

Assessment of Indian Forests and Forest Management in the United States

The Fourth Indian Forest Management Assessment Team
for The Intertribal Timber Council

2023



Assessment of Indian Forests and Forest Management in the United States

The Fourth Indian Forest Management Assessment Team
for The Intertribal Timber Council

2023

This report contains three parts:

1. The Main Report (this document)
2. The Executive Summary
3. A Two-Page Summary

For more information regarding the report *Assessment of Indian Forests and Forest Management in the United States*, please contact the Program Manager at the following address:
Intertribal Timber Council, PO Box 11790, Portland, OR 97211; (503) 282-4296; www.itcnet.org

Photo Credits:

Cover page, clockwise from upper left:

Penobscot hardwood forest – Vincent Corrao

Cow Creek timber harvest – Tim Vredenburg

Post-wildfire restoration on Santa Clara Pueblo – Serra Hoagland

Wildfire on the Yakama Reservation – Ryan Sanchez

Page iii: IFMAT IV site visit to the Spokane Reservation – Vincent Corrao

Page iv: Redwood on Yurok ancestral territory – Vincent Corrao



Table of Contents

Authors and Acknowledgements	v
List of Abbreviationsxi
IFMAT IV Executive Summary	1
Introduction to IFMAT IV	17
Overview of Indian Forests and Forestry: Organization, Health, Productivity, and Cultural Significance	19
Vision: Tribal Member Values, Perceptions, and Priorities	27
Non-Timber Forest Products (NTFPs).....	35
The Evolving Role and Progression of Self Governance in Forest Management	45
Alaska’s Federally Recognized Tribes.....	49
Allotments	51
Task Findings and Recommendations	53
Task A: A comparative analysis of management practices and funding	53
Task B: A survey of the condition of Indian forest lands, including health and productivity levels.....	79
Task C: An evaluation of staffing patterns of forestry organizations of the Bureau of Indian Affairs and of Indian tribes.....	99
Task D: An evaluation of procedures employed in timber sale administration, including preparation, field supervision, and accountability for proceeds	109
Task E: An analysis of the potential for reducing or eliminating relevant administrative procedures, rules, and policies of the Bureau of Indian Affairs consistent with the Federal trust responsibility.....	117
Task F: A comparative analysis of forest management plans and their ability to meet tribal needs and priorities	123
Task G: An evaluation of the feasibility and desirability of establishing minimum standards against which the adequacy of the forestry programs of the Bureau of Indian Affairs in fulfilling its trust responsibility to Indian tribes can be measured	137
Task H: A recommendation of any reforms and increased funding levels necessary to bring Indian forest land management programs to a state-of-the-art condition.....	153

Task Findings and Recommendations (*continued*)

Task I: An evaluation of tribal climate risk and adaptation to climate change (for forests and forest operations) 161

Task J: An assessment of how Indian forests fit into the general scheme of landscape ecology and restoration 185

Task K: An assessment of institutional capability, staff, equipment, facilities, and organizational components necessary to support landscape scale management 201

Literature Cited 209

Appendices A-1

Appendix i: National Indian Forest Resources Management Act Statute Legal Authority A-1

Appendix ii: NTFP Interview Protocol A-18

Appendix iii: NTFP Species A-20

Appendix iv: IFMAT IV Trip Log A-27

Appendix v: IFMAT I-III Crosswalk Table of Recommendations A-34

Appendix vi: Table of Tribes Visited and Governance Status A-58

Appendix vii: Survey/Questionnaire Template A-59

Appendix viii: Recommendations for IFMAT V A-68

Appendix ix: IFMAT IV Site Visit Handbook A-70

Appendix x: IFMAT IV Tribal Site Visit Sampling Scheme A-78

Appendix xi: How well are tribes supported by the BIA? A-79

Appendix xii: Additional Information About Alaska A-84

Appendix xiii: Additional Information about Allotments A-86

Appendix xiv: BIA Regional Office Visit Questions A-87



Authors and Acknowledgements

The IFMAT IV core team would like to thank the tribes that participated in this assessment, as well as the Intertribal Timber Council (ITC) Oversight Committee for providing comments on the draft report. The team also expresses its appreciation for the assistance of numerous individuals who were interviewed, including the BIA Central

Office and Regional staff, as well as tribal leaders who participated in focus groups and surveys. Finally, this report could not have been possible without the technical specialists, group of student participants, and editors. Funding was provided by the BIA and the USDA Forest Service.

The Core Team



John Gordon, PhD, Co-chair

John C. Gordon is Pinchot Professor Emeritus of Forestry and Environmental Studies and former dean at the Yale School for the Environment (formerly the School of Forestry and Environmental Studies). He has participated in all four IFMATs to date and has worked with tribes to regain some of their ancestral lands. He was Head and Professor, Department of Forest Science, Oregon State University from 1976 to 1983. Before that he was Professor of Forestry at Iowa State University, and Principal Plant Physiologist at the Pioneering Project in Wood Formation, USDA Forest Service, Rhinelander, Wisconsin. He has a B.S. (forest management) and a Ph.D. (plant physiology and silviculture) from Iowa State University and has been a Fulbright Scholar in Finland (University of Helsinki) and India (Bangalore). He is the principal and sole proprietor of John Gordon

Consultant, a Portland, Oregon, firm. He is also chairman and founding partner in the Candlewood Timber Group, a sustainable forestry company with operations and substantial forest holdings in Northwest Argentina. His primary expertise is in the biological basis of forest productivity, the management of research, and forest policy and management. He has consulting experience with public and private organizations, including forest products firms, the ITC and several individual tribes, the World Bank and the United Nations Development Programme. He has authored, coauthored, or edited over 100 papers and books, and has overseas experience in a variety of places, including India, Pakistan, China, Costa Rica, Brazil, Argentina, Finland and Scotland. In 2005 he was awarded the Gifford Pinchot Medal by the Society of American Foresters.



John Sessions, PhD, Co-chair

John Sessions is University Distinguished Professor of Forestry and Strachan Chair of Forest Operations Management at Oregon State University. Before coming to OSU he served in various positions in the USDA Forest Service in engineering and timber management and as harvesting manager of a 3.4-million-acre property in northern Brazil. He has consulted in 16 countries for NGO's, companies, and agencies on five continents as well as participating in several congressionally mandated assessments including co-chair or vice-chair of four national assessments of Indian forests and forest management. For 15 years he supported the strategic planning efforts of the Oregon Department of Forestry. His

research focuses on searching for efficient solutions to forest planning problems and all aspects of the forestry supply chain and is documented in 360 publications and reports. He has a BS in civil engineering, MS in civil engineering, MS in forest engineering, and PhD in forest management. Since 2013, Dr. Sessions has chaired the Oregon Professional Forest Engineering licensing examination. In 2013 he was recognized by the Society of American Foresters with the National Award in Forest Science. In 2015, he received the Forester of the Year award by ITC and the 2015 International Forest Engineering Achievement Award from the Council on Forest Engineering. Dr. Sessions is a Fellow of the Society of American Foresters.



Serra Hoagland, PhD, Co-chair

Serra Hoagland (Laguna Pueblo) serves as the Tribal Relations Specialist for the USDA Rocky Mountain Research Station of the USDA Forest Service. She focuses on building partnerships with tribes and intertribal organizations, mentoring students in natural resources, and conducting research that is relevant to Native communities. As the first Native American to graduate from Northern Arizona University with a PhD in forestry, Serra studied Mexican spotted owl habitat on tribal and non-tribal lands in south-central New Mexico.

In 2020, Dr. Hoagland was nominated and selected as the most promising scientist by the American Indian Science & Engineering Society. To date, she has co-authored 2 dozen books and peer reviewed publications including co-editing the first contributed volume on Tribal Wildlife Stewardship. She served as a graduate student observer for IFMAT III and as co-chair of the ITC Research Sub-committee. Over the years, she has been actively involved with the Society of American Foresters, ITC, the Native American Fish & Wildlife Society as well as The Wildlife Society.



Adrian Leighton, PhD, Co-chair

Adrian Leighton is a professor of forestry and Director for the Center for Tribal Research and Education in Ecosystem Sciences (TREES) at Salish Kootenai College. He helped start the first Bachelors of Science in Forestry at SKC in 2003, the first and only such program at a tribal college. As well as teaching and developing curriculum, Leighton has served as Forestry Department Head, Dean of Natural Resources and most recently Dean of Sciences. He has been

involved nationally with ITC, as co-chair of the Research Sub-committee and member of the Education Committee, a member of the Forest Research Advisory Council (FRAC) and an executive Board Member of the National Association of University Forest Resource Programs (NAUFRP). Leighton was a member of the 3rd Indian Forest Management Assessment Team. He has a B.A. in Anthropology, an M.F. in Forestry, and a PhD in Forest Ecology and Silviculture.



Vincent Corrao, BS, Program Manager

Vincent Corrao (Vinny) is the Founder and CEO of Northwest Management, and he has worked with ITC and individual tribes for more than 40 years. He has participated in several regional and national forest products and wildfire management studies as well as the IFMAT III assessments. He has consulted in strategic planning, business development, all aspects of the forestry supply chain,

land acquisitions/exchanges, and forest policy. Vinny was honored with the Natural Resource Award for development of programs exemplifying integrated natural resource management from the University of Idaho, the ITC Northwest Regional Award, and the Nez Perce Tribal Executive Committee special appreciation award for work conducted with the Nez Perce Tribe.

The IFMAT IV Core Team would like to express its appreciation to **Laura Alvidrez**, the Program Manager for ITC, for her support and assistance.

The 41 Participating Tribes

Bristol Bay Native Association, Alaska	Grand Portage Band of Lake Superior Chippewa	Passamaquoddy Tribe
Chugachmiut, Alaska	Hoopa Valley Tribe	Penobscot Nation
Confederated Salish and Kootenai Tribes	Houlton Band of Maliseet Indians	Pueblo of Acoma
Confederated Tribes and Bands of the Yakama Nation	Kalispel Tribe of Indians	Pueblo of Santa Clara
Confederated Tribes of Grand Ronde	Karuk Tribe	Quinault Indian Nation
Confederated Tribes of the Colville Reservation	Leech Lake Band of Ojibwe	Red Lake Nation
Confederated Tribes of the Coos, Lower Umpqua and Siuslaw Indians	Makah Indian Reservation	San Carlos Apache Tribe
Coquille Indian Tribe	Menominee Tribe	Spokane Tribe of Indians
Cow Creek Band of Umpqua Tribe of Indians	Mescalero Apache Tribe	Stockbridge-Munsee Band of Mohican Indians
Eastern Band of Cherokee	Metlakatla Indian Community, Alaska	Tanana Chiefs Conference, Alaska
Gana-A 'Yoo, Limited, Alaska	Mi'kmaq Nation	Tulalip Tribes
	Mississippi Band of Choctaw Indians	Tule River Tribe
	Navajo Nation	Yurok Tribe
	Nez Perce Tribe	Warm Springs Tribe
		White Earth Nation
		White Mountain Apache Tribe

Technical Specialists



John Bailey, PhD

John Bailey is a Professor of Silviculture and Fire Management in the College of Forestry at Oregon State University. He obtained his BS and MF degrees from Virginia Tech (as a native Virginian). He completed a PhD at Oregon State University in silviculture, addressing structural development of Douglas-fir forests, and subsequently joined the faculty at Northern Arizona University for

nine years before returning to OSU in 2006 to continue teaching and research on fuels/fire management and sustainable forest management in fire-prone forest types. His most recent research and outreach focus is on landscape-scale wildfire risk and how to use active forest management to minimize the adverse impacts of future wildfire in uncertain climatic times.



David A. Cleaves, PhD

David A. Cleaves is the owner of Cleaves Consulting LLC, offering services in risk management, planning, leadership development, and climate change policy. Cleaves was formerly the Climate Change Advisor to the Chief of the US Forest Service where he led and coordinated agency activities in climate change adaptation, mitigation, policy, and communication. Cleaves was formerly the deputy administrator for the Forest Service national R&D program and director of the Rocky Mountain Research Station. He was also

the national staff director for research in economics, fire management systems, forest products, social science, recreation, urban forestry, and resource assessment. Previously, he was professor of economics and the marketing extension specialist at Oregon State University. Cleaves has a B.S. and an M.S. from Michigan State University and a Ph.D. in economics from Texas A&M University. Cleaves was the Forest Service representative on IFMAT III assessment and has been lead on Task I – climate change – in IFMAT IV.



Mark Corrao, PhD

Dr. Corrao has expertise in many diverse aspects of leadership, analysis, and policy across the disciplines of forestry, rangeland, and water resources. His experience throughout the U.S. with multiple Tribal Nations, State, Federal and private industrial forestlands afford him a unique perspective in natural resource services and research. Mark has more than 20 years' experience in natural resource field data collection, academic research, environmental policy,

and leadership. As adjunct faculty, Mark serves as a mentor for graduate students in both the College of Agricultural Sciences and College of Natural Resources within the University of Idaho. He has provided multiple technology seminars through the U.S. and has attended ITC as a speaker and workshop lead since 2014. Mark holds a B.S. in Forest Ecosystem Management, M.S. in Watershed Hydrology, and a multi-disciplinary Ph.D. in Soils Physics and Environmental Law.



Greg Dillon, MA

Greg Dillon is the Director of the Fire Modeling Institute, part of the USDA Forest Service Rocky Mountain Research Station. He is an ecologist and geographer with

almost 25 years in the US Forest Service. He has an M.A. in Geography from The University of Wyoming and a B.S. in Geography from James Madison University.



Michael Dockry, PhD

Mike Dockry is a member of the Citizen Potawatomi Nation. He works at the University of Minnesota as an Assistant Professor of tribal natural resource management in the Department of Forest Resources. His interdisciplinary research and teaching focus on incorporating Indigenous knowledge and tribal perspectives into

forestry and natural resource management. He was a technical specialist supporting social science research for the IFMAT IV. He earned a B.S. in Forest Science from the University of Wisconsin, an M.S. in Forest Resources from Penn State University, and a Ph.D. in Forestry from the University of Wisconsin.



Marla Emery, PhD

Dr. Marla R. Emery retired after 25 years as a scientist with the USDA Forest Service. During that time, she had the honor to

conduct research in partnership with numerous tribes, intertribal organizations, and indigenous scholars, especially in the Upper Midwest and Northeast.



Lloyd Irland, PhD

Growing up in Chicago, Irland earned his B.S. at Michigan State; an M.S. at University of Arizona. He served in the Army in Vietnam, then earned a Ph.D. at Yale. He served as a U.S. Forest Service economist in the South, and worked ten years in Maine state government, serving in the Maine Forest Service, as Director of Public Lands, and as State Economist. He has worked on tribal issues on several occasions, including

as consultant to the first Indian Forest Management Assessment Team. He has given talks at several ITC meetings. He is now on a student's committee supervising a Ph.D. thesis at Yale on native rights and timber management in British Columbia, and while on faculty there for 2 years co-taught a workshop in tribal resource management and religions, joint with noted scholar John Grim. He is a Fellow of the Society of American Foresters.



Dave Mausel, PhD

Dave is enrolled in the Muscogee (Creek) Nation of Oklahoma and of Austrian and Scottish descent. He was raised in Massachusetts and studied forestry at the Univ. of Massachusetts B.S., and Forest Entomology at the Univ. of Washington M.S.

and Virginia Tech Ph.D. Before joining the USFS in 2020, Dave worked for Menominee Tribal Enterprises and continues to work for the Keshena Fire Department. He lives in Shawano, WI with his wife, Pehsapan, and three sons, Julian, Rowan, and Henry.



Mark Rasmussen, MS

Mark Rasmussen is Emeritus Forest Economist at Mason, Bruce & Girard, headquartered in Portland Oregon. Mark’s career focused on long term forest management planning and public forest management policy. During his 26-year tenure at MB&G, the company developed

long-term harvest schedules for nearly 250 public and private forests covering nearly 80 million acres. Mark has testified about forest management issues before Congress, the Endangered Species Committee, various State agencies, and in several Courts. Mark served on the IFMAT III and IFMAT IV teams.



George E. Smith, MPA

George Smith is the President of Pacific Management Associates, a natural resources consulting business located in North Bend, OR. He holds a BSF and MPA from the University of Washington and Cornell University. George is an SAF Certified Forester with more than 55 years of Native American forestry experience. During his 31-year career with the Bureau of Indian Affairs, George served in the positions of Chief Forester, BIA Director – National Interagency Fire Center, Regional Forester – Northwest Region, and Assistant Area Forester – Billings Area. Following

federal retirement, George served 10 years as Executive Director for the Coquille Indian Tribe. His tribal experience also includes serving as President of the Sek-Wet-Se Corporation responsible for management of private tribal forestland and as a member of the Board of Directors for the Makah Forestry Enterprise. His federal career and private consulting work experience includes organizing and participating in foreign trade missions to China, Hong Kong and the Federated States of Micronesia, and forest management planning for two regions of the Russian Far East.



Tim Vredenburg, BS

Tim Vredenburg is from southwest Oregon. For the last twenty years he has assisted private landowners and Indian Tribes manage forestlands while navigating challenging issues like wildfire, Endangered Species, and an ever-changing regulatory landscape. Since 2012, he has served the Cow Creek Band of Umpqua Tribe of Indians, as their Director of Forest

Management. In his current capacity he is working to develop an expanded timber land base that will provide for the cultural and economic wellbeing of the Tribe for many generations to come. He offers a unique breadth of experience that spans Indian Self Determination/Self Governance, Forest Policy, Endangered Species and Environmental Compliance, along with practical on the ground forest management.



Dave Wilson, BS

Dave Wilson participated in IFMAT IV as a subject matter expert in the area of forest inventory and planning, budgeting and other financial analysis, and policy. Dave retired from the US Forest Service in 2022 after serving in various positions on the

Washington Office Forest Management staff. Prior to that he spent 29 years (1986-2015) in Indian Forestry, starting at the Menominee Reservation followed by 17 years at the BIA BOFRP office where he was a Senior Inventory Specialist.

Student Participants



Chase Christopherson

Chase is an enrolled member with the Mandan tribe of the Three Affiliated Tribes from the Minneapolis, MN area. He has a M.S. in natural resource sciences from North Dakota State University in 2022, where he conducted research on the recovery of soil

and vegetation following reclamation on degraded lands. He is particularly interested in traditional ecological knowledge (TEK), filling data gaps and making the necessary data accessible to improve tribal land management and further tribal self-governance and determination.

**Anthony Ciocco**

Tony Ciocco has worked with numerous tribal natural resource management departments, with the Bureau of Indian Affairs, and currently works with the U.S.

Geological Survey Climate Adaptation Science Center. His research involves ecological modeling, structured decision making, and co-production with Indigenous Knowledge.

**Austin Durglo**

Austin Durglo is an enrolled member of the Confederated Salish and Kootenai Tribes. Graduating in 2024 with an M.S. in Water Resources and a J.D. emphasizing Native American Law, Austin hopes to learn and support Tribes further their self-governance

throughout his career. Austin plans to use the opportunity as a student participant in IFMAT IV to further his network of Tribal professionals and leaders across Turtle Island. Austin is excited to work in Indian Country and help realize Tribal visions for the next generations.

**Tyler Everett**

Tyler is a citizen of Mi'kmaq Nation, a PhD student in the School of Forest Resources at the University of Maine, a forester working for the Passamaquoddy Forestry Department, and the Forest Adaptation Technical Assistant with United South and Eastern Tribes. His current research focuses on addressing the impacts of emerald ash borer in the culturally significant ash forests

of the northeast. Tyler's research endeavors and professional work have both benefited from the experiences he has gained in participating in the IFMAT IV report by raising his awareness about the current and on-going issues and challenges being faced by Tribal Nation forest managers and natural resource staff across Indian Country as we all work to protect these forests.

**Hannah Funke**

Hannah is a first-generation descendant of the Flathead Nation in Northwest Montana. She is currently working towards her Ph.D. in Natural Resources with an emphasis on fire ecology at the University of Idaho. She looks to promote Indigenous knowledge and

burn practices to help promote better land stewardship goals. Hannah's participation in IFMAT IV has helped her gain insight into what adversities and successes are occurring and continue to occur on tribal lands. She hopes to aid in solutions faced by Tribal Nations in her future career path.

Editor and Graphic Designer

**Adam Herrenbruck**

Adam is a Planning Associate with Northwest Management, Inc. in Moscow, Idaho. He has worked in many facets of the forestry consulting industry, including inventory, reforestation, forest management

planning, wildland firefighting, hazard abatement, wildfire mitigation planning, and writing/editing hazard mitigation plans. Adam holds a B.S. in Journalism with a writing emphasis from the University of Idaho.

**Margaret Parker**

Margaret is a graphic designer with extensive experience in the printing industry. She specializes in layout, typography and

prepress production services. Margaret is based in Portland, Oregon, and works with clients throughout the Pacific Northwest.

List of Abbreviations

AAC	Allowable Annual Cut	FIP	Forest Inventory and Planning
ADS	Aerial Detection Survey	FMD	Forest Management Deduction
AFN	Alaska Federation of Natives	FMP	Forest Management Plan
ANA	Alaska Native Association	F&PA	Funding and Position Analysis
ANC	Alaska Native Corporation	FTE	Full-Time Equivalent
ANCSA	Alaska Native Claims Settlement Act	FY	Fiscal Year
ASIA	Assistant Secretary of Indian Affairs	GAO	Government Accountability Office
BAER	Burned Area Emergency Response	GIS	Geographic Information System
BBF	Billion Board Feet	GNA	Good Neighbor Authority
BIA	Bureau of Indian Affairs	HFPAS	Hazardous Fuels Prioritization and Allocation System
BIARS	Bureau of Indian Affairs Road System	IFMAT	Indian Forest Management Assessment Team
BIL	Bipartisan Infrastructure Law	IIM	Individual Indian Money
BLM	Bureau of Land Management	IMT	Incident Management Team
BoFRP	Branch of Forest Resources Planning	IRA	Inflation Reduction Act
BOWFM	Branch of Wildland Fire Management	IRMP	Integrated Resource Management Plan
CFI	Continuous Forest Inventory	IRR	Indian Reservation Road System
CFLRP	Collaborative Forest Landscape Restoration Program	ISDEAA	Indian Self Determination and Education Assistance Act of 1975
CFR	Code of Federal Regulations	ITAMP	Indian Trust Asset Management Plan
CO2	Carbon Dioxide	ITARA	Indian Trust Asset Reform Act
DOF	BIA Division of Forestry	ITC	Intertribal Timber Council
DOI	Department of the Interior	ITEK	Indigenous Traditional Ecological Knowledge
EMDS	Ecosystem Management Decision Support	LCC	Landscape Conservation Cooperative
EQIP	Environmental Quality Incentive Program	LTRO	Land Titles and Records Office
ESA	Endangered Species Act	MBF	Thousand Board Feet
FAEIS	Food and Agriculture Education Information Statistics	MEL	Minimum Expected Level
FEPP	Federal Excess Property Program	MMBF	Million Board Feet
FHWA	Federal Highway Administration	MOA	Memorandum of Agreement
FIA	Forest Inventory Analysis	MOU	Memorandum of Understanding

NASP	National Advanced Silviculture Program
NCA	National Climate Assessment
NCCE	National Center for Cooperative Education
NEPA	National Environmental Policy Act
NGO	Non-Governmental Organization
NIFC	National Interagency Fire Center
NIFRMA	National Indian Forest Resource Management Act
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NTFP	Non-Timber Forest Products
OPM	Office of Personnel Management
OST	Office of Special Trustee
OTR	Office of Tribal Relations USFS
P.L.	Public Law
POA	Power of Attorney

REIT	Real Estate Investment Trust
RPA	Resource Planning Act
RTRL	Reserve Treaty Rights Land
SOTA	State of the Art
S&PF	State and Private Forestry USFS
TAAMS	Trust Asset and Accounting Management System
TCU	Tribal Colleges and Universities
TEK	Traditional Ecological Knowledge
TFPA	Tribal Forest Protection Act
TIMO	Timber Investment Management Organization
USDA	US Department of Agriculture
USFS	USDA Forest Service
USFWS	US Fish and Wildlife Service
USGS	United States Geological Survey
WHP	Wildfire Hazard Potential

IFMAT IV Executive Summary

Introduction

The Intertribal Timber Council (ITC), for the fourth time, has organized a team to conduct this federally mandated assessment of forestry on American Indian lands. The statute mandating the Indian Forest Management Assessment is the National Indian Forest Resources Management Act (NIFRMA), enacted as Title III of Public Law 101-630 on November 28, 1990. The Secretary of the Interior is required under NIFRMA to undertake an independent national assessment of Indian Forests and Forest

Management every ten years. This assessment is contracted to the ITC which in turn has engaged a team of nationally known experts in forest management to do the assessment and prepare the report for Congress. As with previous assessments, the 4th Indian Forest Management Assessment Team (IFMAT) is required to address eight tasks defined in NIFRMA and three additional tasks specified by ITC.

In the 2019 base year there were 19.3 million acres of tribal trust

forested lands in the United States (F&PA 2019), which includes approximately 10.2 million acres of commercial forests and woodlands. These lands provide important economic, social, and cultural resources to Indian communities. The federal government has a fiduciary duty to ensure that the lands are managed in the best interest for Indian people.

Past IFMAT reports and current findings show that tribal forestry can serve as a positive example



Woodland restoration project at San Carlos Apache. PHOTO CREDIT: SERRA HOAGLAND



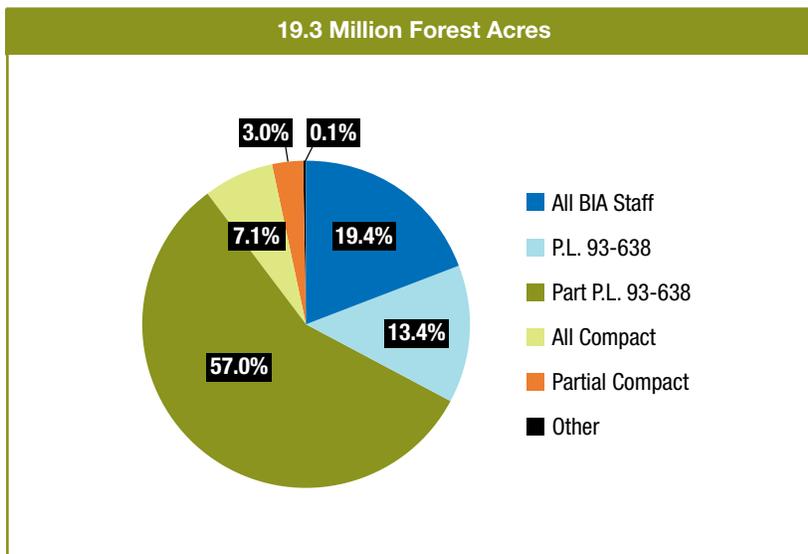
Helicopter drafting water during an active wildfire on the Spokane Tribe of Indians Reservation.
 PHOTO CREDIT: VINCENT CORRAO

of promoting environmental stewardship, but numerous urgent challenges exist in sustaining tribal forests for the benefit of Indian people. Most notably, tribal forestry departments are

underfunded and understaffed compared to their neighbors and high stand density conflated with limited processing infrastructure has created complex forest health conditions. However, increases

in co-management authorities, tribal self-determination, and the creation of new programs that support tribal workforce development may begin to alleviate these challenges.

Figure ES.1. Forestry Self-governance program by number of trust acres. (Source: 2019 F&PA report).



This executive summary is intended to provide a condensed overview of the main IFMAT IV report findings and recommendations. Additional details with further analysis can be found in the various task sections of the main report. Where applicable, specific task findings and recommendations are listed in parenthesis (i.e., A2 for Task A finding or recommendation #2). Additional sections with findings and recommendations might also be referenced (i.e., V for Vision, NTFP for Non-Timber Forest Products, etc.).

Methods

Over a period of two years IFMAT addressed the eight congressionally mandated tasks and the three additional tasks provided by the ITC by 1) visiting 37 tribal forests and hosting 41 virtual calls with tribal forestry departments of varying sizes and governance structures; 2)

surveying tribal communities and the BIA staff about tribal forestry and staffing issues; 3) conducting focus groups during visits to obtain the perspectives of tribal communities; 4) comparing forest management on tribal lands to similar federal and private lands; and 5) hosting virtual and

in-person visits with BIA agency offices, regional and central office. Eight major findings arose from these efforts that are listed below with supplemental information for each. From the eight major findings IFMAT proposes a suite of major and supporting recommendations.

Major Findings

1. There is a unique tribal vision of forest management including a focus on stewardship and non-timber forest products (NTFP) as self-governance (SG) increases yet the Secretary's trust responsibility remains and is vaguely defined.

- As in previous assessments, forest-based income continues for many tribes to be a less-important value (V1). Many tribes are prioritizing stewardship and traditional uses of their forests over timber production (A1). Tribes continue to question Allowable Annual Cut (AAC) achievement as a success measure, as used by BIA in the past (E7). The aggregated AAC for tribal forests has increased slightly overtime but timber harvests have generally not been achieved, with 2019 being the lowest since the Depression era, and management of tribal forests has shifted from a focus on timber production toward forest stewardship (H1).
- There is a wide range of NTFP and benefits that come from tribal forests that sustain tribal lifeways and traditions. Most commonly identified NTFP include herbaceous plants,

fish and wildlife species, roots, moss, firewood, gravel and minerals, fungi and tree components (bark, sap, leaves/needles, seeds/nuts) that are harvested by the community for food and medicinal purposes, to maintain cultural traditions, ceremony, and connections to the land (NTFP1).

- Numerous threats exist to NTFP. These include reduced access, decline in NTFP populations, increased human pressure, changes in forest structure, as well as loss of native language resulting in loss of traditions around gathering, preparing, and processing NTFP (NTFP4).
- Approximately 80% of tribal trust forested acres (includes all categories) are managed wholly or partially under P.L. 93-638 contracts, cooperative agreements, or SG compacts rather than direct service. This is 38% of all tribal forestry and fire programs. The continued advancement of tribes to SG and new opportunities provided by the Indian Trust Asset Reform Act (ITARA) makes the current BIA manual and handbook approach to development and compliance

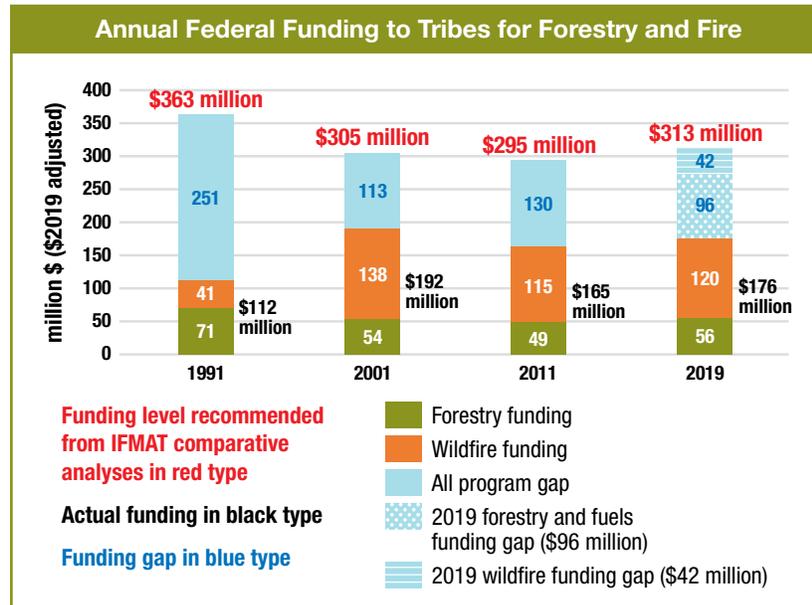
with federal standards less relevant (G6, Appendix xi). Also, inconsistent requirements and guidance exist between BIA direct operations and SG tribes relating to trust oversight, trust standards and trust responsibility (G7).

- A significant shift in concept and performance of inherent federal function for SG/ITARA tribes leaves unaddressed issues relating to the Secretary's trust responsibility: As tribes continue to move towards SG and perform programs under ITARA, the context of the inherent federal function and the relationship of the performance of this function in fulfilling the Secretary's trust responsibility changes. This leaves a residual trust responsibility that is not well understood and can lead to underutilization of SG authorities (G18). In theory the intent of SG can improve the ability for tribes to accomplish their vision (Table SG.1).

2. Funding to support tribal forest management is limited.

- Funding for BIA forestry and wildfire preparedness continue to be far below investments in National Forest and BLM

Figure ES.2. Annual federal budgeted funding level to tribes for forestry and fire adjusted to \$2019. IFMAT IV recommended funding level of \$313 million is based on a comparative analysis to the U.S. Forest Service and other federal programs. This amount does not include estimated federal contributions of \$11 million from other BIA programs or other federal sources such as NRCS. It also does not include needed funding to address the road maintenance backlog which was \$200 million in 1991 and has increased to \$1.33 billion in 2019. Subtotals may not add to total due to rounding.



funding for comparable lands (A2). The Tribal Forestry Program funding requirements set forth in NIFRMA Section 3310 are not being met, more than 50% were being funded at levels below those prescribed in 25CFR163.36.

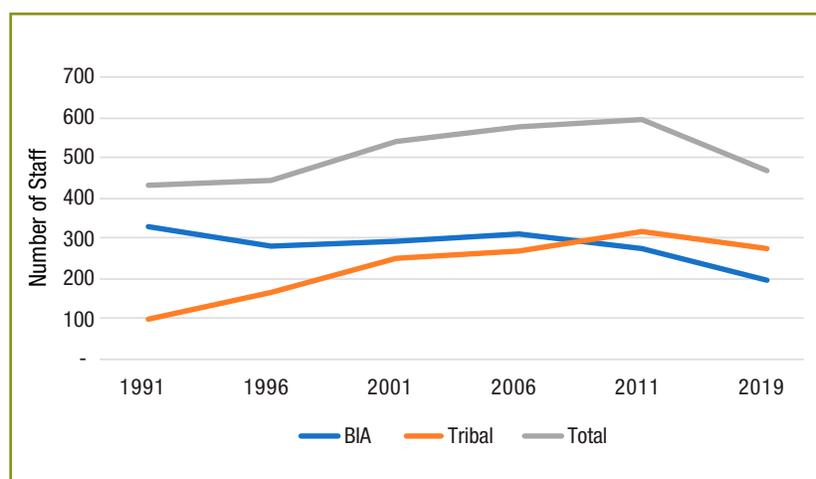
- The gap between federal funding for tribal forests and other lands held in trust by the federal government decreased sharply between 1991 and 2001 (Figure ES.2) due to a significant reduction in Forest Service funding coupled with a large increase in tribal wildfire funding (including fuels reduction). However, since 2001 the gap has been increasing due to a combination of rising federal investments in the Forest Service for forestry and wildfire and reduced or stagnant tribal funding.

- There is an imbalance between recurring funding and nonrecurring funding as well as no adjustments for inflation (A5). Funding has trended to favor nonrecurring project funding rather than recurring funding that supports stable tribal capacity to carry out long

term forest management and, the project funding model may undermine self-governance. Costs of management increase over time, but recurring funding has not kept up with inflation (C2/H11).

- Due to congressional continuing resolutions regarding the federal budget and agency delays, appropriated funding is arriving too late in the year to efficiently implement forestry practices increasing costs, reducing effectiveness, and jeopardizing both regeneration success and forest sustainability (A6).
- The need for Burned Area Emergency Response (BAER) funds has increased significantly due to more frequent and larger wildfires on Indian lands. However, BAER funding is often insufficient to meet emergency needs and the policies and procedures for administering these funds are not aligned with the timing needs for project implementation. The BIA only has two BAER staff officers (H6).

Figure ES.3. Professional staffing levels for tribes and the BIA for fire and forestry staff.





A wildfire salvage timber sale operated by the Confederated Salish and Kootenai Tribes in Montana.
PHOTO CREDIT: VINCENT CORRAO

3. Limited staffing and issues around workforce capacity are impacting tribal forest management.

- Forestry Tribal Priority Allocation (TPA) funding has remained relatively static, compared to budget increases that are used to fund annual, mostly competitive projects. The result of this is that neither the BIA nor tribes have adequate funds to pay for staffing (C1). This problem is especially acute for tribes that compacted or contracted programs several decades ago. In multiple visits the team was told that the annual funding from the Bureau has not increased in 20 or more years and is no longer a sufficient amount to pay salaries it was originally designed to.
- It is increasingly difficult for tribes to bring on permanent staff due to uncertainty in funding levels (C2). In many cases, the team heard that future increases in project funds were irrelevant because there was a shortage of staff to perform the work and in many cases the facilities to house them.
- Indian and tribal preference hiring policies have led to an increase in Native foresters working for tribes and the BIA, but can have unintended consequences (C4) such as the positions not being filled when they cannot identify a qualified tribal applicant or the forestry positions being filled with tribal members who have experience in other natural resource disciplines (i.e. wildlife, range, hydrology, etc.) which makes it more challenging for them to pursue the National Advanced Silviculture Program (NASP) certifications.
- The lack of qualified personnel for timber sale layout makes it difficult for tribes to complete timber sales for meeting annual harvest volumes (D1).



The mouth of the Klamath River, critical salmon habitat for the Yurok and Karuk Tribes in California.

PHOTO CREDIT: VINCENT CORRAO

- BIA training tends to be technical and compliance oriented and tribes are not receiving access to the broad scope of trainings that would benefit staff (C5) and build capacity.
- At most locations, tribal staff are fully engaged in carrying out ongoing forestry operations and lack capacity to take on new initiatives even if those initiatives will streamline processes and result in more cost-effective program execution (H10).

4. Roads, facilities, and enforcement on tribal forests are in dire state.

- BIA and tribal road systems are in very poor condition jeopardizing forest protection, water quality, and active forest management (A3).
- The overall condition of the facilities used for forest management are in poor or worse condition, posing safety

and security issues. There are also needs for additional buildings to house equipment that is being left outside. While the BIA facilities are in fairly good shape, tribal facilities are significantly worse in condition (A9).

- There is limited law enforcement on Indian forest lands for the protection of the natural resources (A7).

5. Major challenges continue to exist for forest protection, forest health, and planning.

- For most tribal forests, excessive stand density, high fuel accumulations, and insect and disease issues remain a major forest sustainability issue (B1). This is conflated with an overall decline in processing infrastructure resulting from federal policies that limited timber harvests on National Forest lands more than three decades ago. This situation has created immense impacts on

tribal forest product industry employment and revenue to tribes.

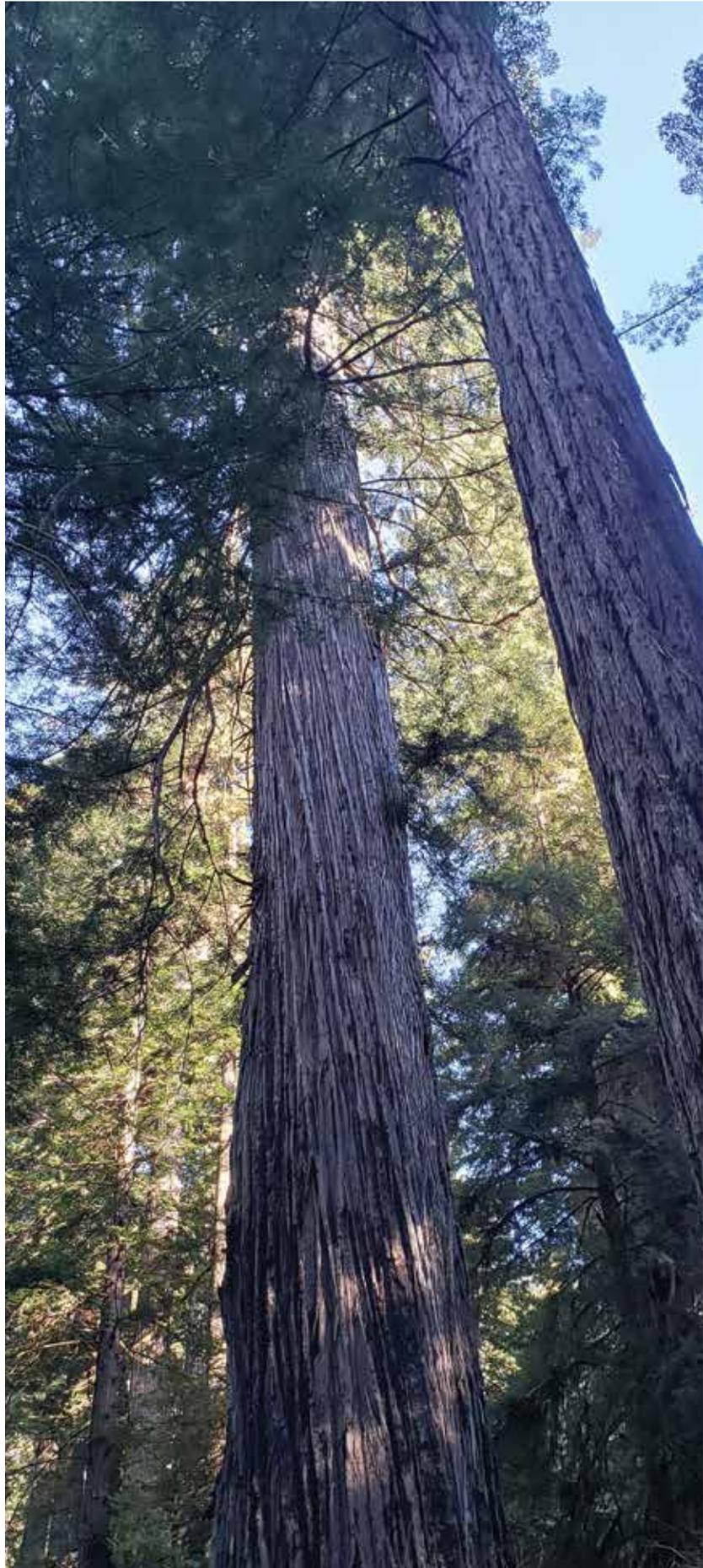
- Tribal forest managers face immense forest health challenges following 100 years of fire suppression policies and historic fire suppression. Current Incident Management Teams (IMTs) who are generally not trained in tribal values, management, and culture are assigned to work on tribal trust lands on incidents. This is a significant issue for tribes due to the conflict between forest health, cultural and archeological sites, and wildfire suppression tactics.
- A 500,000-acre backlog of precommercial thinning treatments remains since the IFMAT III report despite the pressing need for density regulation (B2). Implementation of hazardous fuels reduction treatments is often made difficult by the separation of traditional

forestry and fuels management units (B3).

- Woodland forests are in need of restoration (J12) and are increasingly being treated for fuels hazard reduction, range/forage improvement, fuelwood gathering, food security, and carbon sequestration; however, those goals are not well articulated, and funding is often done outside the BIA. The carbon status of woodlands and woodlands research is limited. BIA guidance for woodland planning and management needs to be strengthened and better integrated into the forest management plan (B8).
- There is thirty years of documented dissatisfaction with grazing, protection from trespass and poaching and other underserved values (such as access to culturally important plants) (V2).
- Wild horses and burro (WHB) populations continue to damage forests and watersheds in Indian Country, particularly in the West. Funding for wild horse control remains far below those provided to other federal agencies. Tribal participation in federal programs to control wild horse and burro populations is not occurring. Funding appropriated for WHB issues is not being shared across the Department of the Interior (A8).
- There is a lack of forest insect, disease, and invasive plant staff positions in tribal programs and the BIA to be fully engaged in addressing these threats (B9).

Redwood trees located on the Yurok's ancestral lands, California.

PHOTO CREDIT: ADRIAN LEIGHTON





Maple syrup collection tube network run by the Passamaquoddy Tribe in Maine. PHOTO CREDIT: VINCENT CORRAO

- Lack of additional timber sales that are “shelf ready” makes it difficult to take advantage of fluctuating market conditions. Few tribes have more than one year’s access to commercial volume for marketing purposes, reducing the opportunity to capture high market conditions (D4).
- Few tribes complete the sale layout of their AAC volume and this shortfall in annual sale volumes results in annual revenue losses (D4). Most tribes lack the process to evaluate whether the tribe is

receiving fair market value for their forest products (D7).

- Maintenance of planning inventories and Forest Management Plans (FMPs) is not keeping up, especially regarding climate change. FMPs are not updated to include new techniques and ideas such as monitoring, climate change, forest health, modern planning techniques, carbon goals and accounting, sustained yield management practices to promote forest resilience, and new approaches for calculating the AAC (F1/F2).

- Many FMPs do not integrate with other plans such as non-trust land management, woodland management, non-timber forest products (NTFP), transportation, tribal business, and hazardous fuels mitigation plans (F3).
- Forest inventory work is lacking yet needed for developing modern forest plans. Forest Inventory and Planning (FIP, formerly the Branch of Forest Resource Planning, or BoFRP) is not able to keep up with the needs of the BIA and tribal Forest Management and Inventory Planning (FMIP) needs (F8).
- The gap between the aggregate Allowable Annual Cut under current management plans and the volume offered for sale continues to grow (F6).
- In many areas there is a lack of manufacturing infrastructure resulting in poor markets and in some areas no market for the harvested products (D11).
- Suppression activities during large wildfire incidents are increasingly inconsistent with tribal goals (B6).

6. Cross cultural relationship building, and landscape-scale management projects are needed.

- Indian forests are being showcased as models of good stewardship which should be applied to management of federal lands (J2). There is overwhelming tribal member support (82%) for involvement in the management of federal lands (V3) yet capacity and funding to carry out projects is limited (J1/J5/K7). Projects are also hindered by rotating leadership of federal partners



An active timber harvest unit on the Quinault Reservation in western Washington. PHOTO CREDIT: VINCENT CORRAO

(J4) and, unfortunately, new authorities aimed at promoting tribal partnerships may often benefit the partners more than the tribes themselves (J7). A champion is needed on the tribal side as well as on the federal side to keep the collaborative process moving forward (K2). Federal agencies' views on co-management and co-stewardship should be clarified and the tribes should be included in funding discussions regarding these projects (K4).

- Prescribed fire, including cultural burning, is a consistently mentioned tool that tribes want to utilize in cross-boundary projects. However, this is often the most complex, although very critical component of many silvicultural treatments. Fire planning needs cooperation

among multiple agencies, landowners, and municipalities and without agreements in place this limits progress (J8). Presently there are not enough trained fire management qualified personnel in Indian Country (K10).

- Fractionated, highly allotted tribal lands are especially challenging when promoting landscape-scale cross-boundary projects (J13).
- 7. There is a need for policy reform and increased education regarding available pathways to self-governance to fulfill the trust responsibility.**
- NIFRMA is one of the most recently legislated major federal forest policies and the ultimate basis of BIA Forestry rules and regulations, but the legislation is over 30 years old

and should be reviewed for relevance and applicability with current conditions, particularly the rapid progression of tribal self-governance (E1).

- There are two divergent BIA forestry functions: direct service to tribes and working with self-governance tribes. It is not clear that BIA Forestry is adequately funded and staffed to do both at the required scale (E6). Furthermore, BIA staff have outdated resources (such as basic computer programs), oftentimes lack basic program information (G11), and show limited attention to some requirements in NIFRMA (A4, F1, G11).
- There are special concerns/benefits for tribes and BIA in carrying out forest management activities under ITARA and self-governance



Landscape management on the Makah Reservation, Washington. PHOTO CREDIT VINCENT CORRAO

generally. BIA rules and procedures have lagged the advance of self-governance (E3) creating limited progress and understanding of ITARA demonstration projects (G17). ITARA promises self-governance benefits for interested tribes. However, many tribes have little or no knowledge about ITARA (E11). Tribes carrying out forest management activities under ITARA are performing functions previously considered inherent federal functions performed by the BIA (H9), yet funds are not made available to the tribes for these additional responsibilities (Table SG.1).

- Levels of BIA service vary greatly between self-governance, self-determination,

and service-provided tribes due to BIA regional policies and funding mechanisms (F7) which adds another layer of confusion.

- Many tribes feel that the BIA requirements are burdensome in that they take up an inordinate amount of time, and do not always support the tribe in their goals and objectives (D12). For instance, the timber cruise accuracy standard of 5% for realty and timber sale transactions is difficult to achieve and often requires a 100% cruise of timber stands. This presents further challenges for limited staff in tribal forestry departments (G10). There is a misunderstanding by some BIA and tribal personnel, that the BIA handbooks and

manuals must be followed by self-governance tribes (G7).

- Currently the BIA has no program review policy or procedure to evaluate BIA direct service (G8).

8. Many other challenges exist for tribal forests.

- Tribes are increasingly acquiring fee land, some of which is brought into trust, and acquired fee land is often not within the reservation boundaries (H2).
- Centralization of wildfire suppression programs (national and regional control of allocation of resources) has had serious negative impacts on tribal ability to respond quickly at the local level and keep fires small (H4). Fire suppression

tactics implemented by Incident Management Teams (IMTs) are degrading timber and other cultural resources on thousands of acres of Indian forest land while attempting to manage large wildfires. These outside teams with no direct relationship to the reservation land and resources are risk averse and often prefer indirect attack using backfires far from the fire front. This often results in the destruction of timber stands on many acres of tribal forestlands that did not need to be burned to contain the fire (H5).

- Many tribal communities do not have sufficient local mills and log markets to support a viable wood products economy (D11). The BIA and some tribes themselves have invested in milling infrastructure, but most tribal mills (especially those dealing with small diameter material) have had limited success. However, the ecosystem services and tribal employment that tribal mills can provide are often undervalued (D13).
- Some tribes express interest in selling timber using direct log sales instead of selling stumpage. BIA's timber sales policies and procedures are designed for stumpage timber sales unless the tribe has established a tribal forestry enterprise under CFR 163.13. BIA's process for creating and securing approval of tribal enterprises can be overly complex and involve multiple reviews and delays (H7).

- BIA forestry regulations and policies restricting delivered log sales need to be reviewed and reforms implemented to facilitate timely creation of forestry enterprises or other acceptable processes for log sales. BIA needs to improve communications to provide other current options for log sales (D8).
- There are differences in the nature and levels of involvement of the forestry program in voluntary carbon market arrangements and other ecosystem services, although the shorter time frames and greater flexibility have piqued the interest of

many tribes. Carbon market arrangements have often been led by tribal government, sometimes with little input by the forestry program. IFMAT was unable to determine if funds are being reinvested to support forest management. DOI solicitors' opinion found that carbon is not a trust responsibility. While there are carbon market protocols for both forests and grasslands, woodlands are currently not eligible as a source of projects. There is no single set of standards, guidance, or principles for assessing and managing climate-related forest vulnerabilities.



Culturally significant cedar bark stripping on the Coquille Reservation in Oregon.

PHOTO CREDIT: MARK RASMUSSEN

Major Recommendations

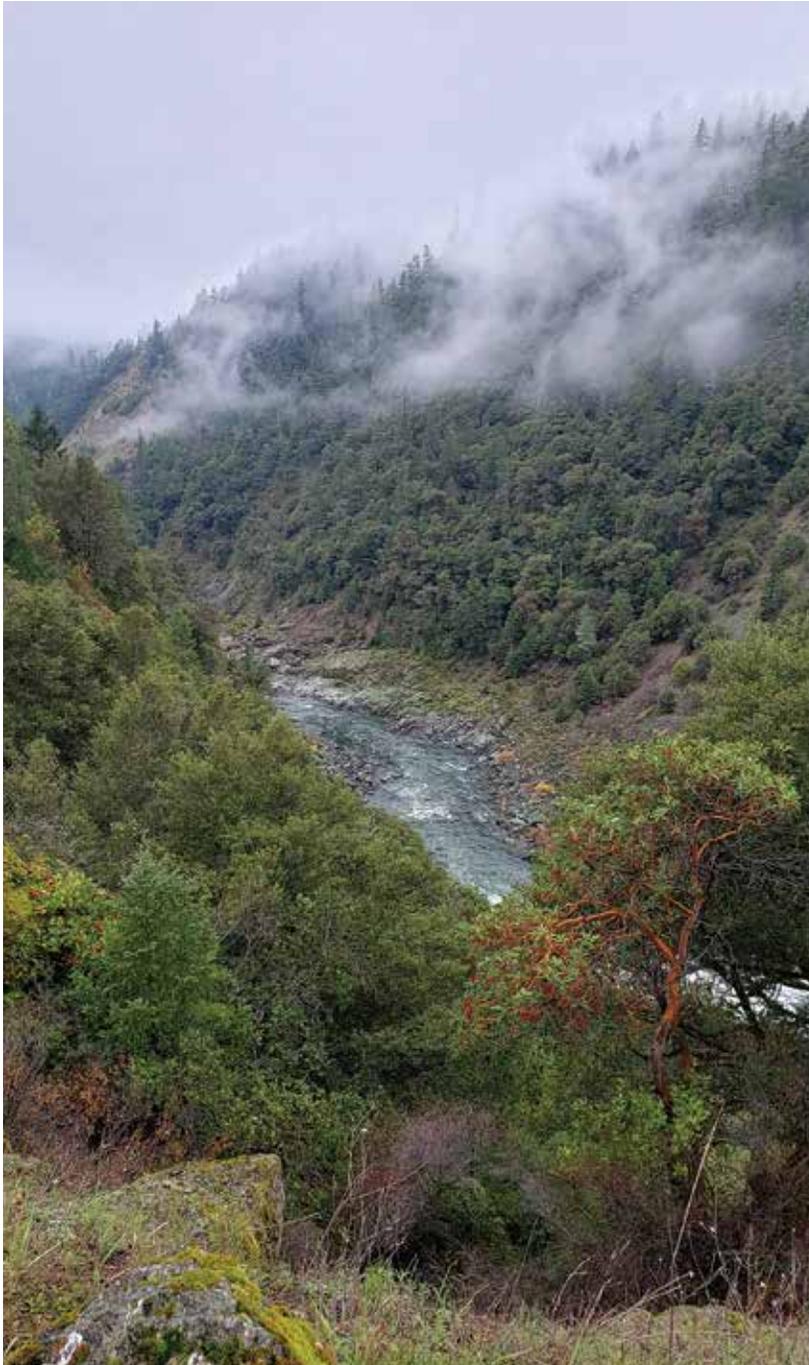
Achieve funding parity:

- Revise the federal funding model to provide for basic land stewardship costs including hazardous fuel reduction and roads, plus additional support for active timber management, consistent with tribal goals (A1). Review

statutory, regulatory and policy requirements for Indian forest management including budget justification and reporting processes and determine needed reforms to address a change in the balance between timber production and stewardship. This includes an

increase in annual funding by \$96 million to support forest stewardship and timber harvest for Indian forests to reach parity with National Forest and BLM funding on their respective land classifications, an increase in fire preparedness funding by \$42 million (A2) as well as establish a separate DOI Budget Justification (Green Book) line item for tribal forest roads with a target of eliminating the forest road maintenance backlog over 15 years with a budget of at least \$89 million per year (A3). With the responsibilities for management of federal lands (including tribal lands) being similar, these increases reflect the principle of equal pay for equal work (C1).

- Increase BIA funding by Congress to at least fund the minimum staffing needs established by NIFRMA for Tribal Forestry Programs (A4).
- Provide adequate funding for law enforcement (trespass) on Indian forest land (\$3-5 million per year) (A7).
- Achieve parity with the Forest Service and BLM to address the current overpopulation of wild horses, up to \$40 million may be needed (A8).
- Increase base funding that allows for direct investment in staffing for all tribes and for the BIA to support self-governance. Rather than funnel budget increases into project funds, there needs to be sufficient TPA funds to fulfill the NIFRMA mandate that each tribe receive an adequate amount to support an appropriate number of



Upper Klamath River in California, critical salmon habitat for the Karuk Tribe. PHOTO CREDIT: VINCENT CORRAO



Road repairs needed for the Chugachmiut in Alaska. PHOTO CREDIT: NATHAN LOJEWSKI

- forestry staff to implement the FMP approved by the Secretary (C1).
- Funding agreements for contract services and compacts should include budget for staffing and should compensate tribal staff at a GS level equivalent to what a federal worker would be paid. This will allow tribes to become more competitive in a workforce beset with scarcity (C1).
- Adjust the balance between recurring funding and nonrecurring forestry funding to fully fund the forestry workforce and annually adjust federal funding to recognize inflation (A5). Recurring and nonrecurring funding needs to be increased to levels commensurate with federal neighbors.
- Reform the system of funding so that “project” funding comes to tribes for the broader “Forest Management Activities” as defined in 25 CFR 163, rather than narrow and more specific criteria (H11).
- Develop mechanisms to provide funding to bridge (A6) the time between seasonal operations and when appropriations are received.
- Initiate an independent review of adequacy of BAER and BAR funding and staffing for Indian lands is needed and necessary actions taken to ensure sufficient funds are allocated to fulfill the Secretary’s trust responsibility and NIFRMA’s statutory objective of maintaining Indian forest land in a perpetually productive state. Reform policy and procedures for administering
- BAER and BAR funds to align with project implementation requirements (H6).
- Redirect funds to tribes retained by the DOI/BIA for performing functions previously considered inherent federal functions but now carried out by tribes under ITARA. This reform would shift funds from the BIA to the tribes who are actually performing the functions and provide additional funds for tribes to achieve tribally defined state-of-the-art forest management (H9).
- Adequately fund and staff tribes to implement cross-boundary projects (J1) and recurring funding must be sufficient to maintain tribes existing forestry needs before a tribe can take on additional responsibilities (K7). Allow

tribes to retain receipts from federal Good Neighbor Authority (GNA) projects, similar to states and ensure that cross-boundary authorities, initiatives and projects also serve tribal entities, not just their partners (J7). Create a specific non-competitive funding source for tribes to apply to that facilitates building relationships with neighbors (J6). BIA needs to provide opportunities for more tribal certified NASP training and/or provide the technical support for landscape projects (K9).

Defining the governance structure of tribal forestry for the future:

- Initiate a special independent commission to 1) evaluate the need to restructure and/or consolidate the BIA, 2) conduct a balanced assessment of potential positive and negative impacts for both tribes and the BIA of increased numbers of tribes moving to self-governance, 3) what or how should the BIA be structured (E3) and 4) reassigning regions that are based off cultural-ecological characteristics rather than geographical boundaries (such as merging Maine tribes with the Midwest BIA region rather than being in the Eastern region). Consider strategically located forestry BIA service centers that tribes are allowed to reach out to based off their needs.
- IFMAT IV recommends the Secretary of the Interior extend the ITARA Demonstration Project indefinitely (E12/G17). Funding, policy, and procedural guidance concerning ITARA

implementation needs to be provided to BIA Regional offices (C10). Establish a training program that provides BIA officials and tribal leaders with better strategies of engaging with self-governance tribes through a spirit of government to government and consistent with Congressional policy rather than domination (G16). Sources of funding should be identified, and information provided to tribes about how to secure needed funding to participate in the ITARA Demonstration Project (H10).

- Streamline the process of converting fee land into trust land (G10).
- Clarify the relationship between BIA and tribes with respect to acquired fee lands. Allow tribes to integrate management of trust and fee forestlands, and co-management agreements into a single FMP (H2).
- Review, under ITARA, the context of the Secretary's trust responsibility and its fulfillment and changes in performance of inherent federal functions including related funding issues (G18).
- Review the relevancy and effectiveness of "forestry programs of the BIA" to address contemporary needs of tribes (G3) given the increasing trend of SG tribes. Rebrand the BIA to be a champion of tribal forestry that emphasizes support rather than having a focus on being a regulatory/compliance agency.
- Incentivize and reward tribes and federal agency staff that successfully move collaborative

and co-management processes forward. Encourage partners and tribes to maintain leadership for the duration of large-scale cross-boundary projects (J3). Performance evaluations should encourage federal employees to successfully utilize collaborative and co-management processes. As personnel leave positions, a checklist of duties and responsibilities incorporated in a plan needs to be completed for a smooth transition (K2).

Address immediate threats to tribal forests:

- Increase the rate of thinning to reduce stocking and improve forest fire resiliency. Utilization of thinning material is critical to improving forest health. Revise hazardous fuels reduction rules to integrate with thinning activities (D11).
- Provide specific, "capacity building" training by the BIA for tribal foresters and technicians who may not have a strong background in forestry specific education. Such training could take the form of a "boot camp" that would prepare such foresters to be successful and would qualify them for entry into the National Advanced Silviculture Program (NASP) (C4). Training, education, and mentoring programs targeted at timber sales management need to be implemented at the BIA and tribe at all levels (D1).
- Expand "strike team" model to create small, experienced teams that can assist tribes in technical areas of need including BAER, NEPA, geospatial analysis, forest



Camas returning to the Jocko Prairie after prescribed burning conducted by the Confederated Salish and Kootenai Tribe in Montana. PHOTO CREDIT: SERRA HOAGLAND

- inventory, carbon accounting and verification, roads, water and hydrology issues and other technical services (C6).
- Quantify the changes from AAC emphasis toward other forest values, while encouraging tribes to include all important values in their management plans. Review BIA rules and procedures regarding AAC, particularly non-declining even flow. Determine if there is a need for more flexibility in the implementation of BIA AAC rules. Overstocking needs to be reduced to have resilient forests in the face of increased fire risk and AAC rules should allow and encourage this (E7).
- Revise the policies surrounding non-expiring forest management plans to ensure that plans are monitored, reviewed, and updated to meet tribal priorities including the AAC (F1/F6).
- Evaluate the mission of FIP (formerly BoFRP) to better adapt to the current needs of not only the BIA managed programs but all tribal programs (F8).
- Initiate an independent review of the federal rules and policies which restrict use of local fire suppression resources, especially for initial attack, and the process for allocation of national resources for fire suppression on Indian lands (H4/H5).
- Update the paid permit limitation of \$25,000 and continually revise to allow for inflation and to better meet current needs for commercial timber harvest using this authority (H8).
- Reduce the barriers to getting fire back on the landscape where needed for more resilient landscapes and cultural objectives (J8). Training for fire qualifications needs to be re-evaluated and ramped up to meet the demand to use managed fire on a landscape basis. Cooperative agency training for managed fire program should be implemented similar to The Nature Conservancy Indigenous burning network. Cooperative burn plans need to be developed so multiple agencies can participate in prescribed burn projects (K10).



Seedling container operation at the Red Lake Nation in Minnesota. PHOTO CREDIT: VINCENT CORRAO

Supporting Recommendations

- Improve the BIA's understanding of the needs and conditions of the forestry facilities and appropriate funding (including outbuildings and IT components) (A9).
- Encourage coordinated development of annual plans on each reservation for integrating all forest management activities and hazardous fuel reduction activities (B3).
- To increase efficiency, evaluate creating a forest protection unit that includes fire, insect, and disease management programs (B9).
- Provide NTFP support for each region to provide technical assistance to tribes to fulfill their NTFP goals. This would support tribal hunting and gathering initiatives and promote health and wellbeing within tribal communities (NTFP1).
- The BIA should identify an independent audit process to evaluate fair market value for forest products (D7).
- BIA/tribes need to explore other revenue options such as carbon, biofuels, biomass use, water, wildlife, recreation, or other natural resource uses (D11).
- IFMAT IV recommends a review of the current applicability of NIFRMA given the recent shift toward self-governance by many tribes. Recipients would include ITC and Congress (E1).
- BIA, in coordination with the ITC, should develop a table of authorities for self-governance tribes (compact, contract, and direct services). This should include the allottees (H1). Modification of CFRs should be based on the findings from this table.
- BIA forestry regulations and policy restricting delivered log sales need to be reviewed and reforms implemented to facilitate timely creation of forestry enterprises or other acceptable processes for log sales. BIA needs to improve communications to provide other current options for log sales (H7).
- Increase systematic technical and academic support for tribal climate change planning (I3).

Introduction to IFMAT IV

The National Indian Forest Resource Management Act (NIFRMA) stipulates that an assessment of Indian forests and forestry be made every 10 years by an independent team of experts, the Indian Forest Resource Management Team (IFMAT). This report details the composition, methods, activities, findings, conclusion, and recommendations of the fourth such assessment, IFMAT IV.

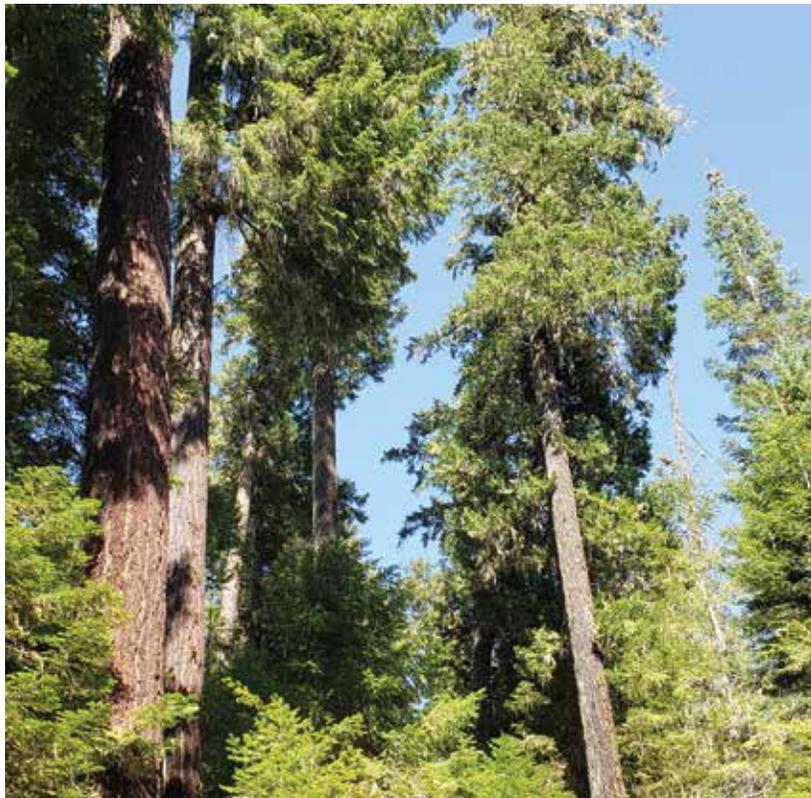
For the 4th decade, IFMAT was formed and overseen by the Intertribal Timber Council (ITC), the nation's leading non-profit organization comprised of representatives of tribes

with significant forest interests. Funding for the project was principally from the Department of the Interior (DOI) through the Bureau of Indian Affairs (BIA) to ITC as well as support from the USDA Forest Service. ITC then contracted with the individuals tasked with carrying out the independent assessment.

IFMAT IV was formed by the appointment by ITC of four co-chairs and a program manager responsible for the further formation and forwarding of the overall task. This group, referred to hereafter as the Core Team (CT), first prepared a study plan and timeline to address the

mandated tasks (see Appendix x). Each task was assigned to a CT coordinator responsible for its timely completion. To gather further expertise to focus on the specific tasks, the CT chose and recommended to ITC a group of nationally and internationally recognized subject matter experts with deep experience in Indian forestry, the Technical Specialists (TS). To further augment the expertise focused on IFMAT IV and to engage students who are the next generation of American Indian forestry professionals, five Native graduate student participants (SP) were selected by the CT from a national call for applications. Both the TS and SP were approved and contracted by ITC. The entire list of CT, TS and SP is found in the Acknowledgements. Throughout the duration of the assessment IFMAT IV participants have agreed to serve as individuals rendering independent evaluations and objective findings and recommendations, and not as representatives of their employer or any other organization.

To gather data relative to the mandated tasks, the CT first developed metrics for each and assigned TS and SP to carry out the task. The CT then developed a schedule of visits (virtual and /or on site) for 41 tribal organizations, BIA regional and national offices and other relevant information sources including the 2019 Funding and Position Analysis prepared by the BIA and tribes.



A mature stand of timber managed by the Cow Creek Band of Umpqua Tribe of Indians in Oregon. PHOTO CREDIT: VINCENT CORRAO

Scope of Work, 11 mandated tasks

The goals, objectives, and methods for IFMAT IV are set out in broad outline by the charge from ITC based on and as added to by the ITC Oversight Committee, as below:

Scope of Work

1. Collaborate with the ITC Contract Compliance Office and ITC Oversight Committee to develop a work plan for IFMAT IV within budgetary and time constraints established by the ITC Oversight Committee.
2. Coordinate with the ITC Contract Compliance Officer to implement the work plan, organize site visits by IFMAT-IV, and revise the Work Plan as necessary.
3. Participate in site visits and the preparation of individual site visit reports
4. Lead IFMAT IV efforts to collect, analyze and interpret information.
5. Provide guidance and direction in the preparation of analyses, written and verbal reports to satisfy informational needs of Congress and ITC which will include periodic progress reports, year-end reports, and final report to Congress and ITC.
6. Familiarize such other members of IFMAT IV with the duties and responsibilities of the Chair as may be directed by the ITC Oversight Committee.
7. Prepare and deliver presentations and testimony to Congress and the

Administration as requested by the ITC President and ITC Oversight Committee

8. Prepare and deliver presentations and testimony to the ITC Executive Board and Membership at the request of the ITC Oversight Committee. This will include an assessment of Indian forest lands and Indian forest land management practices, and a subsequent report that is national in scope and provides the following 11 tasks:
 - a. an in-depth analysis of management practices on, and the level of funding for, specific Indian forest land compared with similar Federal and private forest lands;
 - b. a survey of the condition of Indian forest lands, including health and productivity levels;
 - c. an evaluation of the staffing patterns of forestry organizations of the Bureau of Indian Affairs and of Indian tribes;
 - d. an evaluation of procedures employed in timber sales administration, including preparation, field supervision, and accountability for proceeds;
 - e. an analysis of the potential for reducing or eliminating relevant administrative procedures, rules and policies of the Bureau of Indian Affairs consistent with the Federal trust responsibility, and recent

laws such as the Indian Trust Asset Reform Act (ITARA);

- f. a comprehensive review of the adequacy of Indian forest land management plans, including their compatibility with applicable tribal integrated resource management plans and their ability to meet tribal needs and priorities;
 - g. an evaluation of the feasibility and desirability of establishing minimum standards against which the adequacy of the forestry programs of the Bureau of Indian Affairs in fulfilling its trust responsibility to Indian tribes can be measured;
 - h. a recommendation of any reforms and increased funding levels necessary to bring Indian forest land management programs to a state-of-the-art condition;
 - i. an evaluation of tribal risk and adaptation related to climate change;
 - j. an assessment of how Indian forests fit into the general scheme of landscape ecology and restoration, and
 - k. an assessment of institutional capability, staff, equipment, facilities, and organizational components necessary to support landscape scale management.
9. Provide a status report to Congress as required in Section 208 (c) of the National Indian Forest Resource Management Act.

Overview of Indian Forests and Forestry: Organization, Health, Productivity, and Cultural Significance

Indian forests are found in many of the lower 48 states and Alaska (Figure Intro.6). Most Indian forests are held in trust by the United States Government. This obligates the US Government to see that the forests are well-managed in the interest of the tribes that own them (see Appendix i). Increasingly, tribes own land “in fee” that they have purchased, and these lands may be taken into trust but aren’t necessarily. Native corporations in Alaska own huge areas of forestland, but at present, at least, these lands are managed by the corporations, not by tribal entities. The total acreage of Indian trust forestland, including those classed as woodland, cover about 19.3 million acres, mostly in the lower 48 states, and it is those lands that are the focus of IFMAT IV.



Red cedar bolt salvage on the Quinault Reservation in western Washington.

PHOTO CREDIT: VINCENT CORRAO

Map ID #	Name	Category
1	Confederated Salish and Kootenai Tribes (Flathead)	1
2	Confederated Tribes and Bands of the Yakama Nation	1
3	Confederated Tribes of Grand Ronde	1
4	Confederated Tribes of the Colville Reservation	1
5	Confederated Tribes of the Coos, Lower Umpqua and Siuslaw Indians	4
6	Coquille Indian Tribe	1
7	Cow Creek Band of Umpqua Tribe of Indians	4
8	Eastern Band of Cherokee	1
9	Grand Portage Band of Lake Superior Chippewa	1
10	Hoopla Valley Tribe	1
11	Leech Lake Band of Ojibwe	1
12	Makah Indian Reservation	1
13	Menominee Tribe	2
14	Mescalero Apache Tribe	1
15	Metlakatla Indian Community, Alaska (Annette Islands Reserve)	1
16	Mississippi Band of Choctaw Indians	1
17	Navajo Nation	1
18	Nez Perce Tribe	1
19	Passamaquoddy Tribe	1
20	Penobscot Nation	1
21	Quinault Indian Nation	1
22	Red Lake Nation	1
23	San Carlos Apache Tribe	1
24	Spokane Tribe of Indians	1
25	Stockbridge-Munsee Band of Mohican Indians	1
26	Tulalip Tribes	1
27	Tule River Tribe	1
28	Warm Springs Tribe	1
29	White Earth Nation	1
30	White Mountain Apache Tribe	1
31	Houlton Band of Maliseet Indians	4
32	Kalispel Tribe of Indians	2
33	Karuk Tribe	4
34	Mi'kmaq Nation	4
35	Pueblo of Acoma	1
36	Santa Clara Pueblo	1
37	Yurok Tribe	1
38	Bristol Bay Alaska Native Association, Alaska	4
39	Chugachmiut, Alaska	2
40	Gana-A 'Yoo, Limited, Alaska	ANC
41	Tanana Chiefs Conference, Alaska	2

Figure Intro.1 (map table). Indian Forests in the U.S. visited or Interviewed virtually during IFMAT IV (map on next page)



Figure Intro.1 (map). Indian Forests in the U.S. visited or Interviewed virtually during IFMAT IV (see table on previous page)





Discussing wildfire during the IFMAT IV site visit to San Carlos Apache in Arizona. PHOTO CREDIT: SERRA HOAGLAND

The Indian Forestry Program

The Indian Forestry program is comprised of forestry programs managed by the Bureau of Indian Affairs and individual tribes. Individual forest programs may be managed solely by the BIA or the tribe, or jointly. Increasingly, under self-governance, forestry programs are being managed by tribal staffs. Together as the “Indian Forestry” program, tribes, and the BIA work

together to identify issues and find solutions to them, as well as provide efficient and effective management of forest resources.

Tribal Forest Resources

Indian forestlands are quite diverse across the country. But all have one thing in common, they are a lifeline for the tribes that live on these lands. The tribal needs from their forests are diverse: forest provide everything from stumpage revenue to

employment to harvesting game for subsistence, to being cultural and religious sanctuaries. Clearly, managing for such a broad range of environments and human needs is challenging.

A total of 345 tribal forests are managed across the nation, of which 316 individual forests are held in federal trust (Table Intro.1). The Pacific Region has the highest number of forested reservations, but the Navajo Region has the largest forest land

Table Intro.1: Indian Forestry Resource Summary

Description	Units	1991	2001	2011	2019
Total	Million Acres	49.1	56.3	57.0	57.5
Protection	Million Acres	61.6	65.3	41.8	70.9
Forested	Million Acres	15.8	17.8	18.4	19.3
Commercial Forest	Million Acres	10.1	9.1	9.9	10.2
Commercial Forest Volume	Billion Board Feet	49.0	53.4	54.8	58.1
Total Allowable Annual Cut	Million Board Feet	930	779	743	748
Harvest Volume	Million Board Feet	794	604	360	342
Harvest Value	ACTUAL (\$Millions)	\$90.8	\$87.1	\$43.0	\$50.0
Harvest Value	INFL-2019 (\$Millions)	\$170.5	\$125.7	\$48.8	\$50.0
Stumpage Price per MBF	ACTUAL (Dollars)	\$114.0	\$144.0	\$119.0	\$146.0
Stumpage Price per MBF	INFL-2019 (Dollars)	\$189.0	\$183.0	\$135.0	\$146.0
Commercial Forest Above Ground Carbon ¹	Million Tons	~ 117	~ 127	~ 131	~ 138

A factor of 0.002383 is used to convert merchantable equivalent board feet to tons carbon of above-ground biomass in live trees 1 inch and larger excluding foliage. Factor derived using Forest Service Evaluator application and the 2019 Funding and Position Analysis.

base (Table Intro.2). Of the 19.3 million trust acres, approximately 8.2 million acres of these forested acres are classified as timberland and the remaining 11.1 million acres as woodland. A majority of the timberland and woodland acres are considered commercial, providing opportunities for tribes to generate income from their forests. The Northwest Region has the most commercial timber acres, followed by the Midwest and Western Regions (Table Intro.2).

Tribal forests are classified by an assignment of a “Forest Classification”, which describes the size of the forest and the timber activity of the program

(25CFR 163.36(b)(1)). It is designed to be useful in the funding process to guide the distribution of funds. To facilitate program definition and management properties, reservations are categorized based upon current forest lands data:

- Category 1. Major Forested Reservations. Includes major forested reservations comprised of more than 10,000 acres of trust or restricted commercial timberland or having more than one million board foot harvest of forest products annually.
- Category 2. Minor Forested Reservations. Includes minor forested reservations comprised

of less than 10,000 acres of trust or restricted commercial timberland and having less than one million board foot harvest of forest products annually, or whose forest resources is determined by the Regional Director to be of significant commercial timber value (25CFR 163.36(b)(2)).

- Category 3. Significant Woodland Reservation. Includes significant woodland reservations comprised of an identifiable trust or restricted forest area of any size which is lacking a timberland component, and whose forest resource is determined by the Regional Director to be

Table Intro.2: 2019 Indian Trust Forest Acres by Region

Trust/Region	Count of Forests	Forest Acres (in thousands)				
		Forest	Timbered	Woodland	Commercial Timber	Commercial Woodland
ALASKA	11	418.5	205.5	213.1	144.6	37.6
EASTERN	24	423.3	403.0	20.3	354.4	12.0
EASTERN OKLAHOMA	15	205.4	88.3	117.1	72.5	113.9
GREAT PLAINS	15	381.5	154.6	226.9	140.1	223.1
MIDWEST	41	1,129.3	1,122.4	6.9	983.8	0.1
NAVAJO	1	5,426.5	607.7	4,818.8	399.6	1,139.1
NORTHWEST	47	3,038.9	2,875.2	163.7	2,209.8	72.7
PACIFIC	72	202.2	129.7	72.4	121.1	46.9
ROCKY MOUNTAIN	7	804.4	680.0	124.4	398.9	114.8
SOUTHERN PLAINS	22	99.2	4.6	94.6	4.0	94.6
SOUTHWEST	24	2,857.3	776.0	2,081.4	605.3	830.7
WESTERN	37	4,291.6	1,156.4	3,135.2	740.5	1,346.6
Total Trust	316	19,278.3	8,203.4	11,074.9	6,174.5	4,032.1
EASTERN	14	48.4	45.6	2.8	38.9	-
EASTERN OKLAHOMA	2	0.1	-	0.1	-	0.1
MIDWEST	0	-	-	-	-	-
NORTHWEST	5	32.6	32.6	-	27.1	-
SOUTHWEST	8	74.3	26.2	48.1	21.2	-
Total Non-Trust	29	155.4	104.4	51.0	87.2	0.1
Grand Total	345	19,433.7	8,307.8	11,125.9	6,261.7	4,032.2

of significant commercial woodland value (25CFR 163.36(b)(3)).

- Category 4. Minimally Forested Reservation. Comprised of an identifiable forest area of any size determined by the Regional Director to be of minimal commercial value at this time.
- Category 5. Reservation or Indian property with forest land that the Bureau is charged with some degree of legal responsibility, but the land is not in trust status.

Figure Intro.2 presents trust acres by forest category across all tribal forests. As seen, 81% of the forested acres are on Category 1 reservations. While this is an important statistic, the other category forests are no less important.

Tribal Programs

Tribal programs are funded by various authorities and programs. Programs that are managed by the Bureau of Indian Affairs are funded through BIA Operations funds, while programs that have

been compacted or contracted from the BIA move through the Office of Self-Governance and the BIA Tribal Priority Allocation processes. More tribes are moving toward this compacting or contracting mechanism to be more involved in the management of their forests.

The number of tribes that have moved from being managed by the Bureau has been increasing over the years. Approximately 38% of the forestry programs now have at least some level of tribal inclusion in the operations of the local forest and fire management program. This number is higher on the Category 1 & 2 reservations where the programs are larger and there is more activity. (Figure Intro.3). Although the greatest number of forested reservations are still direct service by the BIA, most of the forested acres are under some form of tribal forestry program (Figure Intro.4), particularly those with larger forests.

Staffing trends in across Indian Forestry programs is following the same program management trend. Overall, staffing has decreased since 1991, the BIA-to-tribal staffing ratio has completely flip-flopped over that period. In 1991 the BIA had a total of 1,479 (65%) employees to the 775 working for tribal programs. By 2019 for the IFMAT IV assessment, only 436 (24%) employees were working for the BIA, while tribal employees nearly doubled to 1,394. This is showing that the Indian Self-Determination authorities are working in allowing tribes to manage their own programs and they can provide staffing opportunities.

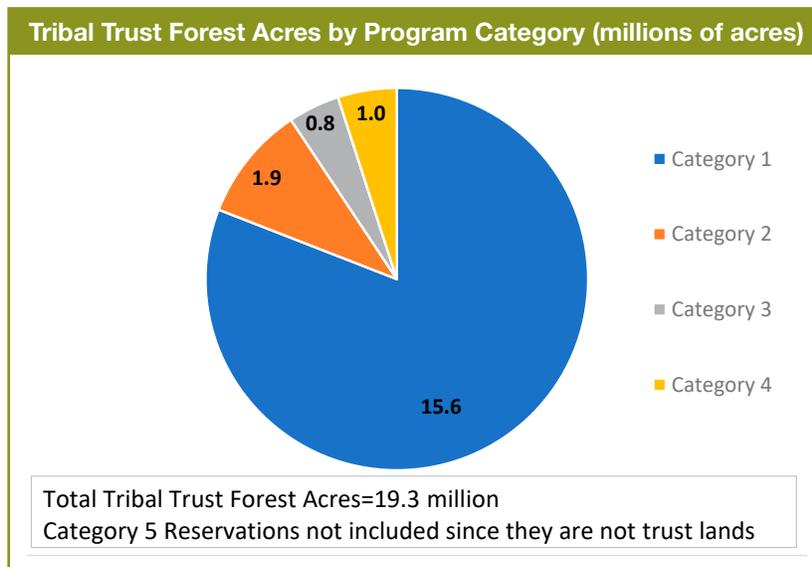


Figure Intro.2. Forest Acres by Forest Category (Source: 2019 F&PA report).

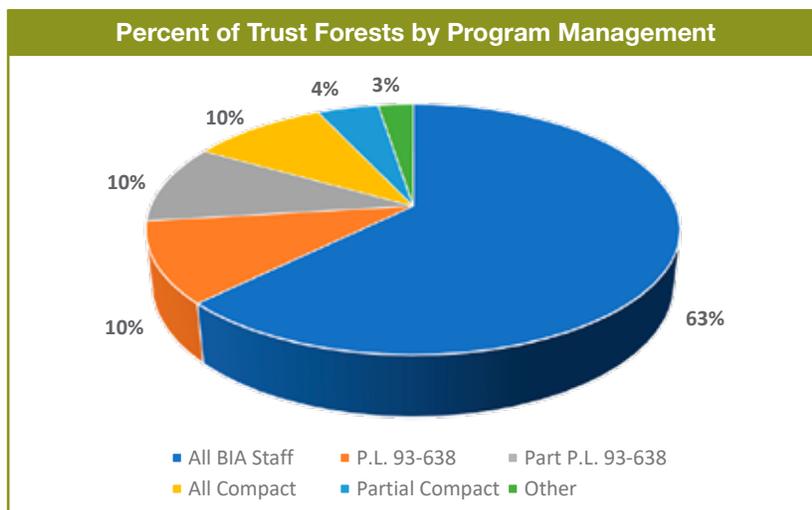


Figure Intro.3. Forestry Self-governance program by number of tribes (Source: 2019 F&PA report).

The Benefits It Provides

The Indian Forestry program provides many benefits to the tribes and their people. In 2019 alone, a relatively low year, the tribal forests harvested 342 million board feet of timber, returning to tribal forestry and other programs almost \$50 million from the forest products harvested. While the timber harvested on tribal lands is down from its historic highs in the 1960's and early 1970's (Figure Intro.6), timber harvests continue to play a large role in the economic viability of tribes. In ways, the decline in Indian harvest parallels the decline in federal forests of the Forest Service and BLM with a shift from a timber production emphasis to a stewardship emphasis.

As presented later in this assessment, more timber volume could be sold and harvested if the funding (and ultimately staffing) levels were increased to levels of other federal programs.

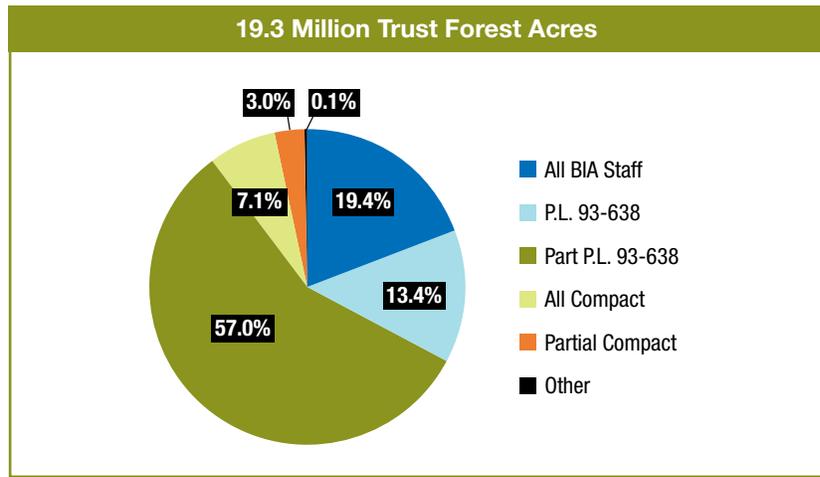


Figure Intro.4. Forestry Self-governance program by number of trust acres. (Source: 2019 F&PA report).

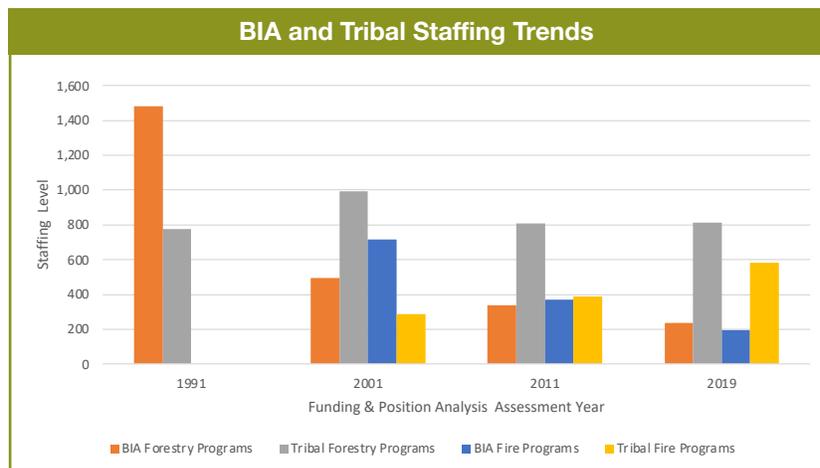


Figure Intro.5. Staffing Trends for BIA and Tribal Programs. (Source: 2019 F&PA report).

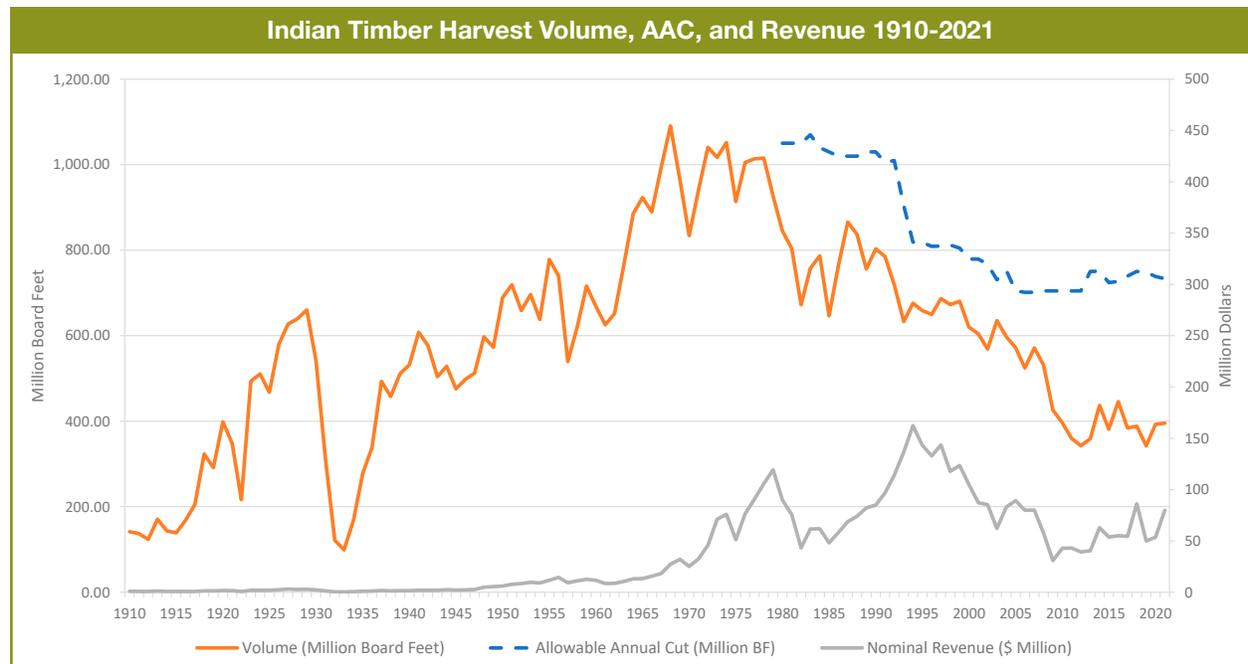


Figure Intro.6. Indian timber harvest, allowable annual cut, and revenue.

Not only are the tribal forests important for economic activity, but these same forests are also needed for fuelwood, pinyon nuts, range forage and other items. Fish, wildlife, range, and water are as important to tribes, so these programs must be integrated into each, and every forest management action assessed and implemented. Recreational, cultural and aesthetics are also valuable components. The ability to hunt and gather are integral parts of not only the survival of the culture of tribe, but the subsistence life of tribal members.

Issues and Opportunities for Tribal Forests

Many issues and opportunities face the tribes and the future of their forests. The following issues make the management of forests complex.

- Climate change causing extreme weather conditions and difficulties in regenerating native species with uncertainty about future climate conditions.
- Wildfire and other catastrophic events that are causing unprecedented destruction at a scale and severity uncharacteristic of historic disturbance regimes.
- Staffing and funding issues make it challenging to maintain programs which contribute to the continuing inability to offer the entire annual allowable harvest from tribal forests losing tribal income from forests and the economic activity and services it provides.
- Lingering effects of the changes in federal harvest policies in the 1990's that led to many mill closures, continues to affect



A regeneration harvest unit for the Confederated Tribes of the Grand Ronde in western Oregon. PHOTO CREDIT: TIM VREDENBURG

access to milling infrastructure, particularly in the drier forests of the Inland West and Southwest.

But many opportunities also exist.

- Carbon sequestration is gaining popularity across the country and a few tribes have embraced it and found it to be successful. With an estimated 138 million tons of carbon on tribal commercial forest lands, there are many opportunities.
- Tribes are finding that integrating their programs with local National Forest lands through the various authorities

both within the BIA and within the US Forest Service, many landscape treatments can be implemented. This will protect tribal lands from within and from the outside. It will also provide tribes with opportunities to influence management on adjacent federal lands where many have treaty or reserved rights.

- Identify new visions for use of the tribal forests.

These issues and opportunities, along with many more, will be discussed in detail throughout the assessment.



Vision: Tribal Member Values, Perceptions, and Priorities

For millennia, tribal forests have sustained tribal communities and tribal communities have sustained tribal forests. One IFMAT IV participant explained, “We need the forest, and the forest needs us.” Another stated, “The Elders always said this forest is going to take care of you.” Tribal forests are valued for every aspect, including biophysical, ecological, spiritual, cultural, and relational.

Today, state-of-the-art forest management can be thought of as the ability to identify the goals and underlying values of those that “own” the forest in order to develop management strategies to achieve those goals and foster those values. Forest management plans are important documents that show how forest management activities will be employed to achieve goals and objectives. Thus, goals and values

are critical components of forest management plans and are central to all management decisions. This is especially true for tribal forests and tribal communities, where the members live in close and intimate proximity to the land and are directly affected—ecologically, socially, culturally, spiritually, and economically—by the consequences of management, or lack thereof. Goals for tribal forests include not only income



Salvage of a hardwood stand at Stockbridge Munsee following a severe wind storm.

PHOTO CREDIT: TIM VREDENBURG

but also fuelwood, fish, game, first foods, medicines, and protection of sacred sites and cultural resources, all of which are of paramount importance to many tribal members and cannot be separated from the cultural, spiritual, and recreational values that are associated with such goals. “There is nothing I don’t value in the forest. I can’t go down a list” is how one IFMAT IV participant explained this.

Methods

Starting with IFMAT I, focus group meetings were conducted with members of host tribes and tribal member surveys were given out during visits and otherwise made publicly available in order to better understand those values and how tribal members feel about how their forests are managed. In order to ensure that results between the IFMAT assessments were comparable, the same focus group protocol and questions were used for each assessment. The survey (see Appendix vii) has remained unchanged except for the addition during IFMAT IV of two questions asking respondents about the management of adjacent federal land and two questions regarding climate change impacts on tribal forest land.

The team collected 241 surveys from a variety of tribal members

and staff (Table V.1) and conducted focus groups at 35 site visits. Each focus group included 5-15 tribal members and, at times, non-tribal natural resources staff. All attendees were identified by the tribal forester and invited to attend. The same three questions were asked as in previous IFMATs: 1) “What do you most value/want from your forest and why?” 2) “What do you think about current management practices on your tribal forest?” And 3) “Have you seen changes in the last 10 years, and if so, what?”

Analysis was similarly consistent with past IFMATs. Focus group responses, including direct quotes where appropriate, were noted by at least one member of the visiting team. These responses were then compared across visits so that consistent themes and concerns became clear. Survey questions, which explored the respondent’s degree of satisfaction with twenty aspects of forest management and the relative importance of seven different forest-related values, were ranked on the Likert Scale, with 1 being relatively unimportant and 5 being extremely important.

Average scores by demographic group were derived and satisfaction with elements of forest management were broken out by the percentage of respondents who felt that things were “good” (Likert scores of 4-5),

“neutral” (Likert score of 3), or “poor” (Likert score of 1-2).

Tribal Members’ Values and Vision

From the very first IFMAT, understanding the goals, values, and priorities of tribal members and how these affect the management of tribal forests has been a central task of the team. While it is important to emphasize that the diversity of tribal cultures, values, and experiences make generalization difficult, the consistency of these findings over 30 years is quite remarkable. It was quite clear from the initial assessment that tribal members put a higher importance on non-commodity values over timber and the associated income. In particular, “forest protection” was most important to tribal members, reflecting a holistic and interconnected view of the forest and that which the forest provided. The 1992 IFMAT I also asked forest managers (native and non-native) what values they thought were most important to tribal members. Additionally, during the IFMAT I assessment, tribal members were asked how satisfied they were with various aspects of forest management. The results at that time showed a divergence between what tribal members wanted (forest protection) and what the forest managers, who were often non-tribal members, thought was most important (income). At the same time, overall satisfaction with forest management was very low. The following two IFMAT teams followed the same procedure and have shown this trend to be decreasing, where both tribal members have more satisfaction with forest management and

Table V.1. IFMAT IV Tribal Public Survey Respondents

Demographic	Number of Respondents
Tribal Public	120
Tribal Council/Government	16
Tribal Forestry	39
Non-Native Tribal Forestry	17
Tribal Natural Resources	30
Non-Native Tribal Natural Resources	19
Total	241

Table V2. Average response by demographic to question “What do tribal members most want from their forests?”

	Recreation	Income	Subsistence	Protection of forest resources	Spiritual values	Cultural values	Beauty/ Scenery
Tribal Member	4.07	3.33	4.57	4.83	4.67	4.81	4.73
Tribal Council	4.36	3.62	4.64	5.00	4.71	4.93	4.79
Tribal Forestry (Native)	4.00	3.58	4.64	4.63	4.63	4.79	4.21
<i>Tribal Forestry (Non-native)</i>	3.69	3.92	3.83	4.71	4.23	4.29	4.08
Natural Resources (Native)	3.55	3.19	4.67	4.77	4.77	4.82	4.41
<i>Natural Resources (Non-native)</i>	3.07	3.20	4.81	4.94	4.57	4.60	4.13

non-tribal managers place higher value on forest protection.

As in previous assessments, IFMAT IV found that income, while averaging 3.0 on the Likert scale, was by far the least important value, with recreation the second lowest. The importance of non-commodity values was also repeatedly emphasized in focus group interviews, especially the importance of the forest as a whole and the interconnection of all forest values with tribal culture and well-being. In fact, focus group participants and survey respondents frequently criticized the reductionist approach taken by the IFMAT team that broke the value of forests into subcategories to quantify each piece. Another frequent comment from focus group participants was that tribal forests were less important as sources of income than they were in the past. This decline in the importance of income, according to focus group participants, was largely due to fewer markets for timber and the increase of other income sources generated by new and diversified tribal enterprises and endeavors. The decrease in economic value of tribal forests was seen by interview participants as an opportunity to realign forest management goals to support cultural values



A timber stand managed by the Kalispel Tribe of Indians in northeast Washington state. PHOTO CREDIT: VINCENT CORRAO

and important non timber forest products (NTFPs) including first foods, medicines, and fuel wood. As one participant said, “Forest management is supposed to be by the book. Now let’s see what kind of book we can write.”

The convergence of views by resource managers toward those held by tribal members first documented in IFMAT II and also demonstrated during IFMAT III can again be seen in IFMAT IV, with overall importance of protection, cultural, and spiritual values receiving similarly high scores among both Native and Non-native resource managers. The only exception to this being the relatively lower importance placed on beauty/scenery by all managers compared to the tribal public.

Unlike the highly consistent tribal values over the last four decades, the degree of satisfaction that respondents have with twenty different aspects of forest management on their reservation has been much more dynamic. IFMAT III found an encouraging increase in positive perception and five aspects of management received more than 50% positive scores. This was the first time in any IFMAT that a majority held a positive opinion. In keeping with the importance tribal members put on holistic, non-commodity forest values, the highest positive rankings went to management for wildlife, fisheries, water quality/quantity, cultural values and forest protection. Overall satisfaction with management during this time increased

to 42%, up from the baseline ranking of 22% in IFMAT I.

During the intervening decade, between IFMAT III and IV, satisfaction with both overall management and all five of the most-approved-of values has decreased, with fisheries management now being the only category that received a “good” score of over 50%. Forest protection in particular suffered a 16% decline in positive rating and a 12% increase in negative ratings. While overall satisfaction went up slightly in one case (spiritual) and remained largely unchanged in two (grazing and timber for tribal use), it was down in the other 17 values. However, in only five cases did negative impression increase more than 5% points (with a maximum swing of 12%)



Forest management is observed and discussed during the IFMAT IV site visit to the Tulalip Tribes in western Washington state. PHOTO CREDIT: TIM VREDENBURG

and in some cases both positive and negative impressions both declined. In no case did the total positive and negative scores from IFMAT IV recipients exceed that of IFMAT III, showing a general shift toward a more neutral opinion. One possible explanation for this is that as markets for conventional forest products have declined, so have opportunities to pay for multi-value management. Another explanation could be that there is a broad decrease in environmental quality due to climate change, invasive species, drought, wildfire, and other changes that have decreased the effectiveness of forest management.

There are several values that have never received good marks from tribal members throughout the IFMAT process, most notably creation of new enterprises, grazing, and protection from poaching and trespass. These have remained poor in IFMAT IV, with two of them seeing the “good” rating dropping to single digits for the first time and trespass with a resounding 61% dissatisfaction.

Since NIFRMA, and therefore IFMAT, were created over thirty years ago, it is not surprising that issues have emerged in the intervening decades. One of these relates to new opportunities and authorities for tribes to participate in the management of federal lands. Two new questions were created in the survey to get a sense of how well respondents felt federal land was managed, and whether they supported tribal involvement in that management. When asked how well they thought that adjacent federal land was managed, tribal members on the whole expressed only a 32% satisfaction rate and

Table V.3. Response of tribal public to the question “How well do you think your forests are being managed for each of the following?”. Good includes responses of 5 or 4, while poor correlates to 1 or 2. Relative satisfaction of tribal membership surveyed during IFMAT III is also included.

Value	Good	Poor	IFMAT III Good	IFMAT III Poor
Wildlife	46%	21%	60	15
Fisheries	52%	18%	62	18
Grazing	25%	41%	25	48
Timber- tribal use	48%	20%	48	22
Timber sale/enterprise	28%	36%	40	33
Recreation	27%	30%	38	25
Water quality/quantity	33%	26%	52	21
Cultural values	38%	24%	51	23
Forest protection	35%	32%	51	20
NTFPs	20%	28%	27	37
Fair price timber	24%	36%	40	32
Employment of tribal members	35%	30%	42	28
Creation of new enterprises	6%	51%	18	55
Food gathering	33%	23%	38	27
Spiritual	44%	15%	38	28
Visual	32%	21%	44	30
Protection from pollution/waste	20%	33%	38	30
Poaching	17%	47%	29	46
Trespass	9%	61%	23	51
Overall Mgmt.	31%	23%	42	22
Mgmt. of Federal lands	32%	29%	N/A	N/A

a 29% negative opinion (see Table V.3). While this is not very different from the perception of the management of tribal land, there was overwhelming support (82%) for tribal involvement in the management of federal lands. This message was echoed in many of the focus groups, with one participant describing tribal engagement in federal land management, “No matter what we do, we should be the managers” and another stating “We don’t consult, we comanage.”

Another issue that has gained increased attention in the last decade is the impact of climate change related events on tribal forests and lifeways. Climate

change came up in every focus group as a major source of change in the last 10 years, and there were many concerns about impacts to forest health and the well-being of culturally important plants and animals. A question was added to the survey to understand perceived changes and threats to the access and use of tribal forests. When asked to rank the amount of impact climate change and related factors such as drought, fire, insect, and disease has had on their use of the forest, 80% of respondents felt that there was significant impact, while only 5% felt that there was no particular impact to their access.

Findings and Recommendations

V1

Finding

Managing tribal forests for forest protection, cultural, and spiritual values, continues to be more important than income for tribal members, tribal council, and natural resource managers.

Recommendation

Tribal forest management should account for, and focus on, stakeholder values, including protection and cultural uses.

- These values have consistently ranked higher than income from forests and are desired by tribal membership and natural resource managers alike.
- The gap between native and non-native IFMAT values has decreased since 1993, however the overall decrease in satisfaction in these values over the past decade is a worrying trend.
- A management challenge for the next decade will be to align management goals more consistently with highly ranked forest-based values.

Reorient “income generation” to “resource generation in support of forest management”.

- While income generation from forests is the least important value, it is still ranked over 3.0 for all groups. It is also important to support the costs of forest management and to maintain forest management infrastructure (loggers, roads, sawyers, etc.) so that future forest management can be implemented.
- There is an opportunity to reorient people’s perceptions around income to focus more on the generation of funds to meet more important forest management goals. For example, income generated from timber sales can be viewed as important to foster forest health, climate adaptation activities, and ecosystem restoration.

*“The forest is more than a resource.
It is part of our identity. It is who we are.”*

—IFMAT IV focus group participant

Findings and Recommendations

V2

Finding

During the last decade, tribal membership satisfaction with most aspects of forest management has declined, although overall dissatisfaction has not increased.

Recommendation

Tribal forestry programs should renew and invigorate mechanisms for communication with, and input from, tribal membership.

- A frequent theme in focus groups was a lack of communication between tribal forestry and tribal membership. Tribal members expressed a desire to understand the reasons and rationale for forest management decisions.
- For their part, forest managers have acknowledged the need for better outreach but generally lack the capacity to engage tribal members and have been frustrated with turnout on the occasions where they have tried tribal public meetings. IFMAT IV encountered innovative examples of tribal member engagement including field trips with elders, surveys, engaged use of social media, and informal gatherings.
- The team would encourage organizations such as ITC to hold a symposium workshop or other vehicle to gather “best practices” for tribal member engagement.

Thirty years of documented dissatisfaction with grazing, protection from trespass and poaching and other underserved values can be used to inform funding and support requests both with the Bureau and Congress.

V3

Finding

Tribal members strongly support the management of adjacent federal lands by tribal resource managers.

- The primary reasons given for this were to strengthen treaty rights, provide management that enhanced culturally important plants and game, and to protect forests from insects, disease, and fire. In the few cases where a tribal member explained that the tribe should not be involved in managing federal land, it was mainly due to concerns about tribal staff capacity.

Recommendation

Tribes are very interested in being involved in their treaty lands or ancestral lands that are adjacent to the reservation. The tribes support opportunities to be more involved in management of these lands and these opportunities should be fostered.

Findings and Recommendations

V4

Finding

Tribal members feel that climate change has a direct impact on their use of tribal forest lands.

Recommendation

Input from tribal members on the loss of forest use can be valuable input and should be used to inform forest management planning and climate adaptation plans/vulnerability assessments.



Tribal garden operated by the Houlton Band of Maliseet Indians in Maine. PHOTO CREDIT: TIM VREDENBURG

Non-Timber Forest Products (NTFPs)

Summary Findings

For many tribes, non-timber forest products (NTFPs) are the most important value of their forests. Fishing, gathering, and hunting are fundamental to tribal identities and cultures. These practices provide food, medicine, material for traditional crafts, and are essential to ceremonies and other spiritual expressions. Wild plants, animals, and mushrooms harvested from forests and grasslands support the lives and livelihoods of tribal members through direct use (subsistence), barter, and sale in formal and informal markets.

Unfortunately, there is consensus among tribes that tribal values, goals, and standards regarding NTFPs are often not articulated in current management plans or in cross-boundary landscape planning with neighbors. Likewise, forest and landscape management on and around tribal lands generally falls short of providing healthy, abundant populations of species important to tribes for fishing, gathering, and hunting. Likewise, regulations on surrounding state and federal lands frequently prohibit tribal members from gathering culturally important plants and mushrooms and have resulted in fines and other penalties, including for members of tribes with reserved rights to hunt, fish, and gather. Tribes want more opportunity to apply traditional ecological knowledge



Chaga mushrooms growing on Chugachmiut tribal lands in Alaska.

PHOTO CREDIT: ADRIAN LEIGHTON

to manage their own forests for hunting, fishing, and gathering benefits. Recently, partnerships with the National Park Service and USDA Forest Service are piloting approaches to improve access for tribal hunting, fishing, and gathering on traditional territories off reservation.

Background

A recent assessment of non-timber forest products (NTFPs) in the United States defines NTFPs as plants and mushrooms used for food, medicine, and other purposes (Chamberlain et al., 2018). In this report, that

definition of NTFPs is broadened to include traditional practices of fishing, gathering, and hunting, as well as uses of firewood, because of the similarities in their cultural and livelihood importance to tribes and tribal members. Another similarity between NTFPs derived from plants, animals, fish, and fungi is that they “have not been fully incorporated into management, policy, and resource valuation” in the United States (Chamberlain et al., 2018: xi), including on Indian forest lands. However, more than a century of US case law bears witness to the importance of

NTFPs to American Indians and Native Alaskans. For example, in its 1905 decision in *United States v. Winans* (198 U.S. 371 (1905)), the US Supreme Court described access to wildlife (including plants, animals, fish, and fungi) as “not much less necessary to the existence of the Indians than the atmosphere they breathed”. In the two decades from 1970 to 1990, federal courts decided nearly seventy cases involving tribal hunting, fishing, and gathering rights (Pevar 1992 as cited in M. Emery & Pierce, 2005). Indeed, some NTFP species are so fundamental to

the cultural identity of a people because of their diverse roles in diet, materials, medicine, and spiritual practices that they may be thought of as cultural keystone species. Loss of access to these species presents a risk to the material and cultural survival of a people (M. R. Emery et al., 2014; Garibaldi & Turner, 2004).

Notwithstanding lack of attention to them in forest management and planning, NTFPs continue to provide important benefits to Indian peoples. These benefits include, but are not limited to (Chamberlain et al., 2018: 85):



Forest management for blueberry fields on the Grand Portage Reservation in Minnesota.

PHOTO CREDIT: VINCENT CORRAO

- Support for food, health, and economic security
- Inputs for culturally appropriate livelihood strategies
- Materials for spiritual and ceremonial observances
- Occasions for sharing cultural stories and teachings
- Conservation of traditional ecological knowledge and connections to nature
- Distribution traditions that create social cohesion and provide security for vulnerable community members.

Methodology

Findings of lack of satisfaction with forest management for NTFPs in IFMAT I, II, and III led to increased emphasis on this important aspect of Indian forest lands in IFMAT IV. The assessment team compiled information on NTFPs from two primary sources:

- Interviews with tribal members and staff
- Site visits

Interviews used a semi-structured protocol (Appendix ii) designed to elicit both a common base of information across tribes and aspects of NTFP use and forest management that might be particular by tribe and region. Data presented herein represent a sample from 35 tribes, not all tribes from the IFMAT IV sample were included due to time constraints or lack of resources. Regional distribution (by BIA region) of tribes for which NTFP interviews, focus groups, and/



Passamaquoddy maple syrup products, Maine.

PHOTO CREDIT: VINCENT CORRAO

or field visits were documented: Alaska (n=1), Eastern (n=4), Midwest (n=6), Northwest (n=14), Pacific (n=4), and Western (n=6).

Because much of the fieldwork for IFMAT IV was conducted during the COVID-19 pandemic, interviews were conducted in person and virtually. In most cases, a primary interviewer asked the question on the protocol and a note taker wrote up the responses. Interview data was supplemented by notes regarding NTFPs taken by IFMAT IV team members participating in

site visits. Written summaries of interview and site visit notes were generally produced within 48 hours. Interview and site visit notes were subsequently analyzed for predetermined and emergent topics using Excel™ and the qualitative data analysis software program Atlasti™. A list of topics can be found in Table NTFP.1. A composite species list was generated from the interviews (Appendix iii). This assessment reports on results of that analysis, supplemented by recent literature on NTFPs and American Indian peoples.

“It’s a problem when forests are managed for only timber.”

—IFMAT IV focus group participant

Importance and benefits of NTFPs for tribes

Nearly two dozen specific topics emerged from the NTFP interviews (Table NTFP.1).

Many tribes have reserved treaty rights to fish, gather, and hunt in their traditional territories and most tribes prioritize these practices on their reservations. Fishing, gathering, and hunting contribute to tribal economies and livelihoods. Sale of crafts, such as baskets made from wild plants, is an important source of income for families and individuals in tribes across the country. Some tribes derive income from the sale of NTFPs such as fish and firewood, as well as fishing and hunting permit fees for nonmembers. While methods exist to estimate the market value of subsistence use of fish, game, and plant foods, tribes generally reject such evaluations as failing to account for the full range of values obtained through fishing, gathering, and hunting. The percentage of people consuming wild foods provides a better proxy for the total value of subsistence practices, with most tribal estimates ranging from 75-100% of reservation residents eating wild foods several times each year and some tribal members relying on them as a primary source of sustenance.

Traditional Foods are a priority for many tribes. Fishing, gathering, and hunting provide healthy, culturally appropriate foods. Rates of metabolic disease are high in tribal communities and many tribal health programs have identified increasing the consumption of wild foods, sometimes known as First Foods,

Table NTFP.1. Main topics that emerged from NTFP IFMAT interviews.

NTFP Topic	Description
Access	Discussion of access to NTFPs, factors affecting access, or access to specific locations
Climate change	Mention of effects of or measures to adapt to or mitigate effects of climate change on NTFPs
Crafts	Mention of craft or artisanal uses of NTFPs and/or their significance
Cultural	Mention of cultural significance or uses of NTFPs, including ceremonial uses.
Enterprises	Any mention of tribal enterprises
Fire	Mention of effects of fire on NTFPs or use of fire to manage NTFPs or NTFP habitat
Firewood	Discussion of tribal firewood program
Fishing	Mention of tribal fishing program or factors affecting it; fish species; fishing by tribal members; significance of fishing of fished species for tribe
Foods (wild)	Discussion of wild foods and/or their uses and significance
Forest planning	Any mention of forest planning or forest plans
Gathering	Discussion of gathering, tribal gathering program, gathered species, importance of gathering or gathered species to tribe
Governance	Mention of tribal governance, need for or consequences of tribal governance
Health	Discussion of effects and/or significance of NTFPs to tribal physical and emotional health
Hunting	Discussion of hunting program and factors affecting it; hunting by tribal members; hunted species; significance of hunting and/or hunted species for tribe
Importance	Any mention of the importance or significance of NTFPs or something relevant to NTFPs
Knowledge	Any mentions of traditional ecological knowledge, science, research, and/or tribal educational programming
Management	Mention of tribal management; need for or consequences of landscape-level management
Partnerships	Discussion of partnerships related to NTFPs with other tribes, agencies, and/or organizations
Species	Apply to all individual NTFP species mentioned and their uses
Staffing	Mention of current or needed staff, staff expertise, factors affecting staffing
Subsistence	Discussion of subsistence use, self-provisioning, and/or uses not mediated by formal or informal trade or markets
Threats	Discussion of threats to NTFP species or tribes' ability to access and use them
Trade	Mention of informal or formal trade of one or more NTFPs by tribe or tribal members

as one important solution to this health crisis. The ability to obtain fish, meat, and plant foods without purchasing them is both economically important for many tribal members and a right guaranteed by many tribes' reserved treaty rights. As multiple court cases have demonstrated, tribes regard the exercise of those reserved treaty rights as essential to their material, cultural, and spiritual survival. Prioritizing fishing, gathering, and hunting in tribal forest management is fundamental to the exercise of those reserved treaty rights.

Fishing, gathering, and hunting are central to tribes' spiritual and cultural practices. From the prayers that are said before harvesting an animal or plant, to the wood used to build fires for ceremonies and the foods that are eaten at them, fishing, gathering, and hunting are embedded in spiritual practices and help to keep tribal cultures alive. As such, it is not a stretch to interpret managing forests to provide healthy populations of plants, animals, and fungi used by tribes as contributing to compliance with the American Indian Religious Freedom Act (42 U.S.C. § 1996.). Given the importance of NTFPs to tribal identities and spirituality, programs to teach youth to fish, hunt, and/or gather are a high priority for many tribes. Language programs also play a role in these efforts. A striking feature of these programs is how often they engage multiple tribal departments, with tribal forestry and natural resource departments often working closely with cultural staff to organize and run them. This underscores the importance of tribal forestry and natural resource programs



Wild ramp harvest for the Eastern Band of Cherokee Indians in North Carolina. PHOTO CREDIT: MICHAEL DOCKRY

to tribal cultural programs and the importance of tribal cultural programs to tribal forestry and natural resource programs.

Firewood is important to tribes for heating homes and processing food, including smoking fish and game meat, and parching wild rice. The organizational structure of tribal firewood programs differs from tribe to tribe, but they commonly provide critical sources of heat in winter for many tribal members, especially for elders. In general, firewood is delivered free of charge to elders and others in need. Most tribes allow members to harvest firewood. Some tribes have large scale firewood operations, which are a source of some income.

The composite list generated a total of 148 species or groups of species (Appendix iii). There is some possibility of over-counting if multiple common names are used for a single species or

species group (e.g., ramps, wild onions, and wild leeks probably all refer to *Allium tricoccum*). Likewise, there is a possibility of under counting if the same name is used to refer to multiple species (e.g., “sweetgrass” is used for both *Hierachloe odorata* and *Muhlenbergia filipis*). Given those uncertainties, the fact that there are many species in diverse taxa is apparent from the interviews. A few key takeaways from the composite list include: 1) There are dozens to hundreds of plant, animal, and fungi species that are important to tribes; 2) These species are important as sources of food, medicine, craft, cultural, and utilitarian materials; 3) Some are so important they are considered fundamental to the cultures and identities of a tribe (cultural keystone species); 4) These species are rarely prioritized in BIA forest planning and management. This oversight is especially true in the



Firewood collection program operated by the Nez Perce Tribe in Idaho.
PHOTO CREDIT: VINCENT CORRAO

case of vascular plants, fungi, and non-timber uses of trees and 5) Management for healthy populations of these species and access to them should be considered part of the Trust Responsibility.

Fire, Cultural Burning and NTFPs

Regular burning was a key aspect of tribes' landscape management for centuries to millennia before it was prohibited and US forest management policy emphasized fire suppression. Oppression of Native Americans, removal from ancestral lands, conflicts with settlers, and criminalization of native burning practices also played a detrimental role. Tribes consistently identify the lack of cultural burning as having very adverse effects on species that

are fished, gathered, and hunted. It is unsurprising, then, that restoration of cultural burning is a high priority for many tribes. These tribal cultural burning efforts are being used to restore habitat for culturally important animals, fungi, and plants, which are valued as food, medicine, artisanal, and spiritual uses. In some cases, partnerships with state agencies and/or nongovernmental agencies are proving to be supportive of tribes' efforts to restore cultural burning. However, regulations and delays in receiving burn permits are hampering tribal efforts to restore landscapes and habitats for fishing, gathering, and hunting. Tribes note that the exact timing and methods of burning in one place will not necessarily work in another area. As a consequence,

tribes want burning programs to be guided by the knowledge of the tribe in whose territory it takes place, including observance of associated spiritual practices.

"Fire is a gift from the Creator. If we don't use it, it will come back and burn us up."

"There are times we have to regulate ourselves if we want the forests to be healthy. But we want that regulation to be directed by tribal visions and standards, not projections on us by or from the BIA."

In contrast, wildfires and, in particular, high intensity wildfires are destroying habitat for wildlife, compromising fish habitat, and eliminating populations of culturally important plants. These high intensity fires are making it difficult for affected tribes to meet their goals with regards to fishing, gathering, and hunting. In some cases, medicinal plants have been especially adversely impacted by large wildfires. This places tribal health at risk.

Enterprises and NTFPs

At least one tribal enterprise provides food for elders and Temporary Assistance for Needy Families (TANF), including wild foods also sold outside the tribe. This enterprise also creates opportunities for tribal youth to earn money and pay for school expenses by gathering these wild foods. Also, many tribes typically retain NTFP for subsistence needs only, which limits opportunities for enterprises that could compete with traditional or subsistence uses.

Forest Planning and NTFPs

While the particular species of interest vary from tribe to tribe, providing opportunities for tribal

members to hunt, fish, and gather is a central goal for many, if not most tribal forest and landscape management programs. Strong collaboration between tribal Cultural Offices and Forestry Departments characterizes the efforts that are considered most successful by tribal history preservation officers and forestry department staff. Where tribes have separate wildlife and/or fisheries programs the degree of collaboration between them and forestry departments to achieve the goal of restoring landscapes and populations of wild plant and animal foods varies.

Where forest management plans do not prioritize fishing, gathering, and hunting, it is regarded as a significant oversight and problem. Likewise, failure to restore culturally important tree species, even where these do not have important market values, is regarded by some tribal members and leaders as short sighted. Siloed approaches, in which forestry departments, wildlife programs, and fisheries management do not cooperate are also identified as producing results that fall short of what would be achieved if they worked in partnership.

Many forestry programs have burning programs and other management strategies to restore and promote habitat for plant and animal species that are culturally important foods. Large wildfires are compromising the success of these programs.

Governance of NTFPs

For the majority of species, tribes do not set limits or require permits for their members. Many tribes prohibit or impose limits of fishing, gathering, and/or

hunting by non-tribal members, including some that sell permits of licenses for fishing or hunting on reservation.

Landscape Management and NTFPs

Tribes want to engage and restore relationships with ancestral lands as well as in landscapes with their neighbors to restore habitat and ensure tribal members' access to species that are important for fishing, gathering, and hunting. Such collaboration is not always welcomed by neighboring landowners and managers. This makes it difficult for tribes to achieve their objectives for landscape management and NTFPs. As a result, many are looking to acquire additional land that will make it easier to engage in landscape management to achieve their goals.

Training and Outreach Regarding NTFPs

Many tribes have instituted educational programs and camps to pass on knowledge about fishing, gathering, and hunting; encourage tribal youth to engage in these culturally important activities; and support their physical and emotional health through harvesting and eating culturally important foods. Tribal language programs also are regarded as important contributors to efforts to ensure tribal youth have the knowledge and skills they need to fish, gather, and hunt.

Infrastructure and NTFPs

Observations of the effect of roads on fishing, gathering, and hunting are heterogenous. On the one hand, reductions in road density and improved stream crossings improve fish habitat. On the other hand, it is noted that

adequate roads make it easier and safer to fish, gather, and hunt.

Staffing and NTFPs

Tribes experience multiple challenges with regards to staffing programs that support fishing, gathering, and hunting. Many note that they have difficulty keeping staff because of their pay structure, lack of opportunities for advancement, and, in some cases, lack of job security. Several tribes note a lack of law enforcement capacity needed to pursue illegal fishing and hunting on their reservations. High reliance on seasonal employees is common and provides important training and income opportunities for tribal members.

Pressing Issues Related to NTFPs

Lack of funding and staff are preventing tribes from fully realizing their goals to restore culturally important species and habitats, and fishing, gathering, and hunting by their members.



Micmac Farms, a farm and fish hatchery owned and operated by the Mi'kmaq Nation in Maine.

PHOTO CREDIT: ADRIAN LEIGHTON

Many tribes need more land to ensure their cultural practices of fishing, gathering, and hunting.

Illegal activities on tribal lands are impediments to tribes restoring gathering and gathering-based practices such as basketmaking by making it unsafe for youth and women to go into the forest to gather.

Cross topic analysis

Additional analyses were conducted with the interview data related to fire and partnerships and are presented below.

Fire AND Various NTFP Categories

Information regarding the significance of nontimber forest products (NTFPs) was obtained through interviews, focus groups, and field visits with 35 tribes, which were documented through notes taken by members of the IFMAT IV team. This document summarizes results of analyses of tribes' statements about the significance of fire and relationships between fire and fishing, gathering, hunting, often in the context of forest planning and/or landscape management as documented in these notes. The analysis used the qualitative data

analysis software, Atlasti to code all notes on NTFP information. This text was subsequently queried for text addressing the code "Fire" in combination with other key codes or topics in order to understand the significance of fire in relation to NTFPs and their significance for tribes.

Fire and Gathering (16 comments)

"Good acorn gathering depends on the right kind of fire at the right time."

As noted for acorns, the influence of fire on gathering in general depends on the timing and intensity of fire. Many tribes are using or wish to use fire to manage for larger, healthier populations of culturally and economically important plants. In the case of species used for basketmaking, fire is used to produce material with the properties needed to weave beautiful, durable baskets. During interviews, tribes mentioned several culturally important NTFP from above- and below-ground parts of woody and non-woody species that benefit from well-timed and well managed fire. These include tanoak acorns, beargrass, camas bulbs, hickory, and huckleberries. Traditional

ecological knowledge was cited as an important source of information on when and how to use cultural burning to produce the desired results. In some cases, methods may also have important impacts on the suitability for use of species managed with fire. For example, beargrass basket makers typically put the material in their mouths, making chemical residue from drip cans a potential health hazard.

In contrast, high intensity wildfires can have very negative effects on culturally important plants and trees. Tribes in the Northwest, Pacific, and Western regions indicate that wildfires have eliminated or otherwise adversely impacted culturally important plants and gathering sites. Efforts to fight fires may also be problematic. One tribe in the Pacific region indicates that they have also struggled to prevent the creation of firebreaks through culturally important gathering sites. Morel mushrooms, which fruit prolifically in the year or two following high intensity fires, are the exception. Many tribes note both a subsistence and financial windfall resulting from post-fire morel booms, although these have also led to some conflict with non-tribal gatherers coming onto reservation lands.

Fire and Fishing, Hunting (7 comments)

Fire may also be beneficial or damaging for fishing and hunting, depending on timing and intensity. Well managed fire can create diverse habitats needed by wildlife. For example, elk benefit from open grasslands promoted by regular, low intensity fire. Winter deer range can also be enhanced by controlled burns. Again, in contrast, catastrophic



Evergreen huckleberries on Coquille Indian Tribe lands in Oregon.

PHOTO CREDIT: ADRIAN LEIGHTON

wildfires can lead to erosion, altered hydrologic regimes, and loss of habitat that are damaging to fishing and hunting. One tribe in the Pacific region indicates that backfires used as wildfire management techniques are needlessly burning many acres and trapping animals, with results that are traumatic for tribal members.

Partnerships AND NTFP

Partnerships AND Gathering (11 comments)

Tribes are engaged in partnerships with diverse agencies and organizations to secure access for gathering, restore populations of culturally important plants, conduct research on them, and keep traditional ecological knowledge about gathering vibrant. As befits the federal Trust responsibility, tribes partner with several federal agencies to support gathering. The USDA Forest Service (USFS) stands out for partnerships with many tribes to secure reserved treaty rights to gather on national forest lands. Some tribes are partnering with national parks in their traditional territories to develop permit systems and other programs to allow tribal members access to selected plant species on lands within park boundaries. Another type of partnership between tribes and federal agencies in support of gathering is shared funding for staff positions. One tribe in the East notes that it has such a partnership with the Natural Resources Conservation



Juniper ash product sold by the Navajo Nation in the Southwest.
PHOTO CREDIT: SERRA HOGLAND

Service. Tribes note, however, that partnerships with federal agencies depend heavily on agency personnel; when committed staff move on, as they often do, these partnerships frequently are disrupted. Unfortunately, tribes note that the BIA has generally lacked the interest in or capacity to support tribal efforts to support gathering by tribal members.

Many tribes also have developed valued partnerships to produce information, restore populations of culturally important plants, and support gathering knowledge and culture within their communities. Examples include a tribal partnership where The Nature Conservancy has partnered with a tribe in the Northwest region to restore edible root populations. Tribes partner with USFS Research & Development scientists in several

regions to co-produce knowledge about culturally important plant species and the effects of harvesting on them, bringing together indigenous and scientific knowledge. Many tribes have long-term partnerships with academics to support gathering, with outcomes that include published ethnobotanists as well as documents for tribal use only. Partnerships between tribal agencies and organizations such as language and culture camps are also providing important support for tribes' efforts to sustain gathering.

Partnerships AND Fishing AND Hunting (7 comments)

In many cases, partnerships to secure reserved treaty rights also cover fishing and hunting by tribal members on lands that are now managed by federal agencies. Here, too, partnerships with federal agencies depend heavily on agency personnel and staffing changes can disrupt these partnerships. Tribal partnerships with state agencies vary widely in terms of trust and successful outcomes. Some examples of partnerships with states that tribes perceive as working well for them include a joint effort in the Midwest region to manage fisheries and a program that tests deer on a reservation in the Eastern region for chronic wasting disease. At least one tribe located near the US-Canada border is engaged in partnerships with government agencies that are catalyzing transboundary work to restore Atlantic salmon.

“This is the most important asset — Reserved Treaty Rights... any adverse impact to tribal members’ exercise of Treaty-reserved rights [to fish, gather, and hunt] would result in significant harm to the continuance of social and cultural values [tribal name omitted for anonymity] of traditional lifeway.”

—IFMAT IV focus group participant

Findings and Recommendations

<p>NTFP1</p>	<p>Finding</p> <p>There is a wide range of NTFP and values that come from tribal forests that sustain tribal lifeways and traditions.</p> <ul style="list-style-type: none"> ■ Most commonly identified NTFP include rocks, herbaceous plants, fish and wildlife species, roots, moss, fungi and tree components (bark, sap, leaves/needles, seeds/nuts) that are harvested by the community for medicinal or subsistence purpose, or to maintain cultural traditions, ceremony and their connection to the land. 	<p>Recommendation</p> <p>Assign an NTFP BIA staff member for each region to assist tribes with their NTFP goals.</p> <ul style="list-style-type: none"> ■ This would support tribal hunting and gathering initiatives and promote health and wellbeing within tribal communities. ■ Include funding for tribal management of NTFP.
<p>NTFP2</p>	<p>Finding</p> <p>Sustainable harvest principles are widely utilized to conserve the NTFP resources.</p>	<p>Recommendation</p> <p>Support and invest in research and development opportunities with tribal partners to promote sustainable harvest principles and ‘honorable harvest’ methods among tribal communities.</p>
<p>NTFP3</p>	<p>Finding</p> <p>Access to NTFP has steadily declined and in some cases has disappeared entirely.</p>	<p>Recommendation</p> <p>Identify and fund an independent team to seek ways that prevent further deterioration of NTFP resources.</p> <ul style="list-style-type: none"> ■ Coordinate and collaborate with the FAO Indigenous Peoples’ Liaison for North America. ■ Focus on expanding access to NTFP while preventing any further loss.
<p>NTFP4</p>	<p>Finding</p> <p>Numerous threats exist to NTFP harvesting.</p> <ul style="list-style-type: none"> ■ These include loss of language resulting in loss of traditions around gathering, preparing, and processing NTFP. The NTFP themselves are at risk or are declining in the landscape (e.g., Pinyon IPS impacting tree health and vigor in the southwest). Poaching and enforcement is often limited or underfunded (see A7) and the NTFPs are often not well regulated or monitored. 	<p>Recommendation</p> <p>Minimize threats to NTFP by supporting language revitalization programs, increased research, and development support around NTFP conservation practices and increase the level of funding and capacity to improve enforcement and monitoring of NTFP on tribal lands.</p>
<p>NTFP5</p>	<p>Finding</p> <p>NTFP are a trust responsibility according to NIFRMA Sec 305 (see Appendix i) but they are not considered in the FMP, IRMP, or Climate Adaptation Plans.</p>	<p>Recommendation</p> <p>IRMPs, FMPs, and Climate Adaptation Plans should be reviewed by tribes to see that these documents adequately define the importance of NTFPs to the tribe and provide direction through standards, silvicultural prescriptions, and management activities for landscape planning and harvest scheduling (see A1, F2).</p>

The Evolving Role and Progression of Self Governance in Forest Management

The following discussion examines the changes in the context of the federal trust responsibility as tribes transition from BIA control and administration to direct tribal operations in management of trust forest lands.

Previous IFMAT reports have noted an increasing trend of a reduction in BIA control and administration of reservation forestry programs to tribes taking over management of their trust forest lands under authorities provided in the

Indian Self-Determination and Education Assistance Act (P.L. 93-638 – 1975), NIFRMA (1990), and more recently the Indian Trust Asset Reform Act (ITARA) (P.L. 114-178 – 2016). In the decade since IFMAT III, this trend has continued.



A discussion of timber harvest and ITARA at the Cow Creek Reservation site visit in Oregon.

PHOTO CREDIT: VINCENT CORRAO

In the IFMAT IV review, forestry program information was collected from 41 tribes nationwide including Alaska. In examining tribal governance structure, it was found that more than 80% of tribal forest acres were being managed in part or fully by tribes under P.L. 93-638 program contracts or compacts. As of the conclusion of the IFMAT IV assessment two additional tribes carry out forest management activities under Indian Trust Asset Management Plans (ITAMPs) authorized by ITARA.

Numerous functions performed in the management of Indian forest lands have historically been identified as residual, non-contractable activities to be performed by a BIA designated official. The BIA uses compliance with CFR Part 163 regulations interpreted and implemented through manuals and handbooks

as the standard for fulfilling trust responsibility and the approval of documents and actions as a validation that trust responsibility is being met. Self-determination contract and self-governance compact tribes are not required to follow BIA policies, manuals, and handbooks (see Tasks G and H). ITARA tribes replace 25 CFR Part 163 regulations with tribal forestry regulations. Except for Forest Management Plans (FMPs), Wildland Fire Management Plans (WFMPs) and Forest Management Deduction (FMD) Expenditure Plans, ITARA tribes operating under tribal law and regulations approve all forest management documents and actions previously viewed as inherent federal functions of the BIA (trust responsibility).

Prior and current IFMAT reports have referenced challenges and offered recommendations to establish standards to ensure

fulfilment of the federal trust responsibility. Past focus has been to ensure that forestry programs of the BIA fulfill the federal trust responsibility (see Task G). Due to an increase in forestry programs now being performed directly by tribes, IFMAT's past focus on BIA delivery of forestry programs is becoming increasingly outdated. ITARA takes the change from the traditional concept of fulfilling the trust responsibility a step further. Under ITARA, tribes are authorized to conduct forestry programs under tribal law and regulations and to assume functions previously considered as inherent federal functions of the BIA (see Task H). Table SG.1. shows a comparison of the applicability of rules, policies and approval actions under different authorities and governance arrangements.

Table SG.1. A comparison of the applicability of rules, policies and approval actions under different authorities and governance arrangements.

	BIA Direct Service	638 Contract & Cooperative Agreement	638 Compact	ITAMP Approved Under ITARA
Follow NIFRMA	YES	YES	YES	YES
Follow 25CFR §163 Regulations	YES	YES	YES	NO
Follow BIA Policies, Manuals & Handbooks	YES	NO*	NO	NO
Provide BIA With Standards for Administering Programs	YES	YES	NO	NO
Have a BIA Approved Forest Mgt. Plan (FMP)	YES	YES	YES	YES
Have a BIA Approved Wildland Fire Mgt. Plan [^]	YES	YES	YES	YES
Have BIA Approve Timber Sales	YES	YES	YES	NO
Endangered Species Protection (ESA)	Sec 7	Sec 7	Sec 7	Sec 9
Comply with NEPA	YES	YES	YES	YES**
Have BIA Approve Prescribed Burn Plan	YES	YES	YES	NO
Have BIA Approve FMD Expenditure Plan	YES	YES	YES	YES

* While the tribal contractor is not required to comply with BIA policy directives, manuals and handbooks, some tribes agree to follow these guidance documents as the standards for carrying out the program.

[^] Wildland Fire Management Plan may be incorporated into the Forest Management Plan and approved as a single document.

** Tribal regulations are created that are consistent with national NEPA compliance.

The Indian Self-Determination and Education Assistance Act states that “*Nothing in this Act shall be construed as authorizing or requiring the termination of any existing trust responsibility of the United States with respect to Indian people*” and the Indian Trust Asset Reform Act states “*Nothing in this title enhances, diminishes, or otherwise affects the trust responsibility of the United States to Indian Tribes or individual Indians*”.

While Congress intends that the federal trust responsibility remains intact and unaltered, under Indian self-determination, tribal self-governance and ITARA implementation there are significant changes in the context of the trust responsibility and the standards and processes by which it is fulfilled. With many forestry programs now under direct tribal operations, such standards need to be tribally focused and aligned with tribal visions for their forests. Forest Management Plans, which continue to be approved by both tribes and the Secretary, are appropriate documents to contain standards for meeting the trust responsibility and achieving tribally defined state-of-the-art forest management (see Tasks F and G).

A consistent IFMAT recommendation has been to create an independent trust oversight body, such as a permanent commission independent of both the BIA and Secretary, to evaluate the overall federal government’s fulfilment



A regeneration unit containing sequoia on the Coquille Reservation in Oregon. PHOTO CREDIT: MARK RASMUSSEN

of its trust duties to Indian tribes (see Task G and Appendix v). However, this recommendation has never been implemented (see Appendix v). In the absence of having an independent trust oversight body, possible alternatives would be to modify the existing trust evaluation processes for self-governance

compacts and ITAMPs. To improve the effectiveness of these evaluations for forestry programs, there is a need to have professional forestry personnel as part of the evaluation team and include a determination of the extent to which the functions performed achieve the tribes’ vision for their forests. Also, the evaluations need to recognize and be consistent with the principles of self-governance. The validity and potential value provided by the evaluations could be enhanced by including independent third-party

“The federal emphasis on single species management is at odds with our view of the world.”

—IFMAT IV focus group participant



A commercial thinning on the Warm Springs Reservation in Oregon. PHOTO CREDIT: VINCENT CORRAO

representation with expertise and experience in Indian forest management.

With transition to direct tribal operations of forestry programs, any method to evaluate fulfillment of trust responsibility needs to be based on tribally focused trust standards agreed to by tribes and the Secretary of the Interior. Such standards need

clear definition and to include a process for trust oversight. The process for trust oversight should be an independent body rendering specific problems with trust oversight (see Task H).

An in-depth evaluation of the structure and role of the BIA is needed as more tribes assume full authority for carrying out forestry program activities under

ITARA. The BIA Central Office needs to issue policy guidance to Regional Offices regarding their continued role and relationship to ITARA tribes. Lack of guidance has created confusion, and sometimes tension, between tribal and Regional Office staffs in such areas as the responsibility for continued project funding and distribution of year-end and special initiative funding.

“We are genetically Native American, but to be a tribe, we have to regain harmony with the land.”

—IFMAT IV focus group participant

Alaska's Federally Recognized Tribes

The Alaska Native Claims Settlement Act of 1971 (ANCSA), which conveyed 45.5 million acres of land to Alaska Natives, authorized the creation of regional for-profit corporations, regional non-profit corporations, and village corporations for the benefit of Alaska Native shareholders. ANCSA authorized tribal members to become shareholders. These lands are not tribal trust lands, and forest management is addressed by both regional for-profit and non-profit corporations. In some cases, regional non-profits provide forestry services to village corporations both within and outside of their geographic region. ANCSA Corporation land holdings are fee simple lands, for which the federal government does not have a trust responsibility. Many of the tribes feel that ANCSA was an act that abrogated claims of Alaskan Native sovereignty by not allowing these lands into trust. The Metlakatla Tribe in Southeast Alaska is the only federally managed “trust” lands in Alaska outside of the individually owned Native allotments.

IFMAT IV found that NIFRMA states “The Secretary, in consultation with the village and regional corporations ... shall establish a program of technical assistance to promote sustained yield management of their resources. Such technical assistance shall also be available to promote local processing and other value-added activities with

such resources.” The IFMAT IV team observed examples of regional non-profits assisting villages with securing funding through BIA programs and other sources for firewood processors, biomass heating units and training to manage wood lots for woody biomass. These same non-profits are also assisting regional and village corporations to enter and maintain carbon projects.

The important Native land status in Alaska is the individually owned Native allotments, which are technically “restricted” lands, and managed as trust lands by the federal government.

Native allotments are under the jurisdiction of the U. S. Bureau of Indian Affairs (BIA), Alaska Regional Office. Native allotments administered by the BIA Alaska Regional Office are “restricted” lands because the titles to these parcels are held by individual Alaska Natives with restrictions affecting the title defined by federal regulations. The restrictions are against alienation and taxation and the title is restricted and requires the Secretary’s review and approval usually delegated to the Regional Director. For all other purposes, Native allotments are managed



A discussion on the impacts of more frequent wildfire on permafrost areas during the Tanana Chiefs Conference site visit tour in Alaska.

PHOTO CREDIT: VINCENT CORRAO

by the U.S. Federal Government as “trust” Indian land and those lands assigned to individuals are referred to as individually owned Native allotments, and the individual owners are referred to as “allottees”. Management of many of these allotments is performed through P.L. 93-638 self-governance compacts with the U.S. Department of the Interior.

The IFMAT IV assessment in applying the National Indian Forest Resource Management Act (NIFRMA) mandates addressing the federal government’s trust responsibility. Trust lands in Alaska are made up of allotments and these allotments are scattered throughout the state with little or no opportunities for active management. Recent attempts to enter carbon projects for trust allotment owners have stalled and the BIA issued on November 4, 2022, a National Policy Memorandum on Carbon Sequestration Agreement Policy to clarify the Bureau’s role.

Top Priorities in Alaska

- Traditional and cultural foods remain the highest priority and subsistence harvest and gathering is a number one concern. In many areas moose numbers have declined, caribou herds that were once large have been reduced by disease and have migrated to areas outside of the tribes’ reach. Fish numbers were down in some areas and are being impacted by commercial harvesting.
- Lack of staffing is an issue in Alaska, specifically professional forestry staff and particularly tribal members on the tribal side as well as with the BIA.



A wildfire fuels break operation conducted by the Chugachmiut community in Alaska. PHOTO CREDIT: ADRIAN LEIGHTON

- Recurring TPA funds initially identified on a per-forested-allotment-acre basis is not sufficient to hire and retain professional forestry staff. This is a top priority for the nonprofit tribal organizations that have compacted or contracted for trust services in Alaska.
- Reducing fuels to protect homes and allotment acres from wildfire.
- Lack of markets and infrastructure for forest products.
- Some areas have used biomass to assist in heating homes and community buildings to provide backup for high fuel costs.
- In most areas firewood is the most valuable forest product and long-term management of this resource needs to be considered when conducting thinning and stand improvement projects.
- Fire suppression has become more difficult and there are more fires showing up where historically there was little to no activity. Changing climate has made new challenges affecting permafrost, increasing melting, and forcing some villages to move due to ice dams and flooding around the communities. These impacts will require adaptive management practices, planning and active implementation to mitigate the impacts.
- Recently there is increasing emphasis on working with adjacent lands and doing co-management and landscape-scale projects. These projects could be an opening for entering into a Tribal Forest Protection Act (TFPA) and/or a Good Neighbor Authority (GNA) type collaborative.
- IFMAT IV found that an Alaska assessment is warranted as this area is significantly different than the lower 48 states in land area, management needs, challenges, and opportunities, and that the Native owners and lands would benefit from an Alaska-specific assessment.

Additional background information and details regarding Alaska can be found in Appendix xii.

Allotments

IFMAT has recommended through all earlier reports that allotment lands be consolidated into tribal ownership through a willing buyer and willing seller program and to identify a simpler more efficient way to deal with the increasingly fractionated ownership. Obtaining permission from a majority share of allottees is challenging and in many cases, it is difficult or impossible to locate the individual owners. The Cobell lawsuit settlement provided some funding for tribes to buy out allotment ownerships for allottees desiring to sell. While the funding helped, it was not sufficient to fully address the scope of the problem. Allotment consolidation can also be hindered in some instances because Indian owners have homes on their allotments. Individual land holdings may also have family and cultural values making the properties unavailable for sale to tribes.

The allotment system, created by the Dawes act of 1887 was implemented by several reservation-specific statues and gave Indian ownership interest in specific parcels. The Secretary of the Interior through the Bureau of Indian affairs holds Indian forest land in trust for individual Indian trustees. The management responsibility for these ownerships is outlined in the 25 CFR § 163 regulations and Indian Affairs Manual. The intent of the responsibilities is to establish and maintain these Indian Forest lands in

a sustained yield condition satisfying the best interest of the beneficiary. Allotments can create conflicts within the BIA when fiduciary responsibilities benefiting individual allottees conflicts with tribal sovereign powers to regulate land uses and management practices to protect cultural, wildlife, water resources or other resources.

IFMAT Continues to Recommend

There is a need to continue consolidation of allotment lands as the problem, noted in all past IFMATs, has worsened with the passage of every generation.

Allotments complicate the management of Indian forests and involve thousands of fragmented



Quinault Allottee Association member visiting her recently harvested allotment on the Quinault Reservation in western Washington.

PHOTO CREDIT: VINCENT CORRAO

and fractionated allotted lands that are owned by individual Indian families and held in trust by the federal government.

The continued fractionation of the allotments has a long-lasting negative impact on the nature, use, and structure of Indian forests. When a majority of interest of the owners cannot be confirmed in a specific time frame, perhaps a lesser percentage should be authorized so that management can be implemented.

Increasing management costs of the allotment ownership structure frustrate landscape level management and result in an uneven distribution of management constraints between allotment owners and tribal lands.

Overall, due to their small size and scattered distribution, as a rule allotments are under-planned when addressing landscape management impacts.

Additional background information and details regarding Allotments can be found in Appendix xiii.



Quinault Allottee Association members participate in an IFMAT IV site visit assessment in Washington state. PHOTO CREDIT: VINCENT CORRAO

Task Findings and Recommendations

TASK

A

A comparative analysis of management practices and funding



Overview

The adequacy of funding of the Indian forestry program was made by comparing management costs on Indian forest land to similar federal, state, and private forest lands.

The primary focus of past IFMAT assessments of the Indian forestry program was on the delivery of forest products. But, as tribes are shifting (or already have shifted) their focus to holistic land stewardship, this assessment focused on these forest land stewardship concepts. Forest land stewardship has gained momentum not only on tribal lands, but across most federal and some private forest land. Forest land stewardship is based on the fundamentals of managing the resource for improving forest conditions, health, and vitality. While forest products can be an output from the management of the forest, it is the outcome of healthy forests that is the goal.

For the stewardship of commercial forest land and wildfire management, the U.S. Forest Service (USFS) is the appropriate cost comparator. For the stewardship of noncommercial forest land and wildfire management, the Bureau of Land Management (BLM) is the appropriate cost comparator.

A seedling greenhouse operated by the Red Lake Nation in Minnesota.

PHOTO CREDIT: MICHAEL DOCKRY

For the goal of timber production, the state forests and private industrial forests with similar management systems are the appropriate comparators for Indian forests. IFMAT IV found the level of forest investment on Indian lands to be lower than states and somewhat similar to private lands. To determine the funding level for Indian forestry, a model that recognizes the cost of stewardship and incremental cost of timber production is proposed. As background to developing the stewardship / production cost model, levels of investment are compared for forestry and wildfire management

by BIA region, to federal, state, and private organizations. Also compared are the results of the stewardship/production cost model with the 2019 BIA Funding and Position Analysis (F&PA) needs assessment. Both the stewardship/production cost model and F&PA needs assessment indicate a funding gap compared to federal forests. The 2019 base year was chosen as representing pre-pandemic conditions as well as considering the time required for BIA data collection and quality control.

The primary funding conclusion is that the base year (2019) federal funding for Indian forests would

need to be increased about \$96 million to reach parity with federal funding for the USFS and BLM on comparable lands. Funding for wildfire preparedness would need to be increased about \$42 million to reach parity with federal funding for the USFS and BLM on comparable lands.

Indian Forestry Funding

Indian forestry is primarily funded in three components: BIA Forestry, BIA Fire, and Tribal Contributions. Support to forestry projects is provided by other BIA programs, primarily Wildlife, Water Resources,



The White Mountain Apache Timber Company sawmill at Whiteriver, Arizona. PHOTO CREDIT: CURTIS ROGERS

Table A.1. Sources of Forest Funding, Allowable Annual Cut (AAC), Harvest Volumes, and Trust Land from 1991 to 2019. Previous period budgets are adjusted using CPI.

Actual Funding by IFMAT Reporting Year (Millions of Dollars)					
Program	Source of Funding	1991	2001	2011	2019
Forestry	BIA	40.8 (37.5) ¹	58.7 (37.6)	52.0 (43.7)	63.6 (55.6)
Fire ⁴	BIA	21.9	95.6	102.0	119.5 ²
Tribal	Contributions	18.5	23.5	15.0	24.4 ³
All Sources	Total	81.2	177.8	169.0	207.5
Inflation Adjusted to 2019 Dollars (Millions of Dollars)					
Program	Source of Funding	1991 (2019\$)	2001 (2019\$)	2011 (2019\$)	2019 (2019\$)
Forestry	BIA	76.7 (70.5)	84.5 (54.1)	58.8 (49.3)	63.6 (55.6)
Fire	BIA	41.2	137.7	115.3	119.5
Tribal	Contributions	34.8	33.8	17.0	24.4
All Sources	Total	152.7	256.0	191.0	207.5
Forest & Harvest					
		1991	2001	2011	2019
AAC	All Regions	930 MMBF	779 MMBF	743 MMBF	748 MMBF
Harvest	All Regions	730 MMBF	606 MMBF	360 MMBF	342 MMBF
Forest Trust Land	All Regions	15.6 million ac	17.6 million ac	18.4 million ac	19.3 million ac

¹ Values in parentheses are Forestry Appropriations from BIA Greenbooks. F&PA values are derived from tribal surveys and include carryover.

² Derived from Office of Wildland Fire reports to maintain consistency with 2011 report, compares to \$112.1 million in BIA F&PA survey.

³ Reported in BIA F&PA survey includes \$2.8 million in other federal sources.

⁴ Includes preparedness and hazard fuel reduction, but not suppression.

Invasive Species, and Endangered Species. The BIA Division of Transportation (formerly Branch of Roads) maintains roads on the BIA road system (BIARS) and is funded by the Federal Highway Administration (FHWA). Other federal agencies contributing forest health and protection services and grant funds are the USDA Forest Service (Forest Service) for insect and disease monitoring and control and National Resource Conservation Service (NRCS) through the Environmental Quality Incentives Program (EQIP) and other conservation programs. GIS and interdisciplinary project support is often provided through tribal natural resource staffs.

Much of IFMAT forestry budget data comes from the BIA

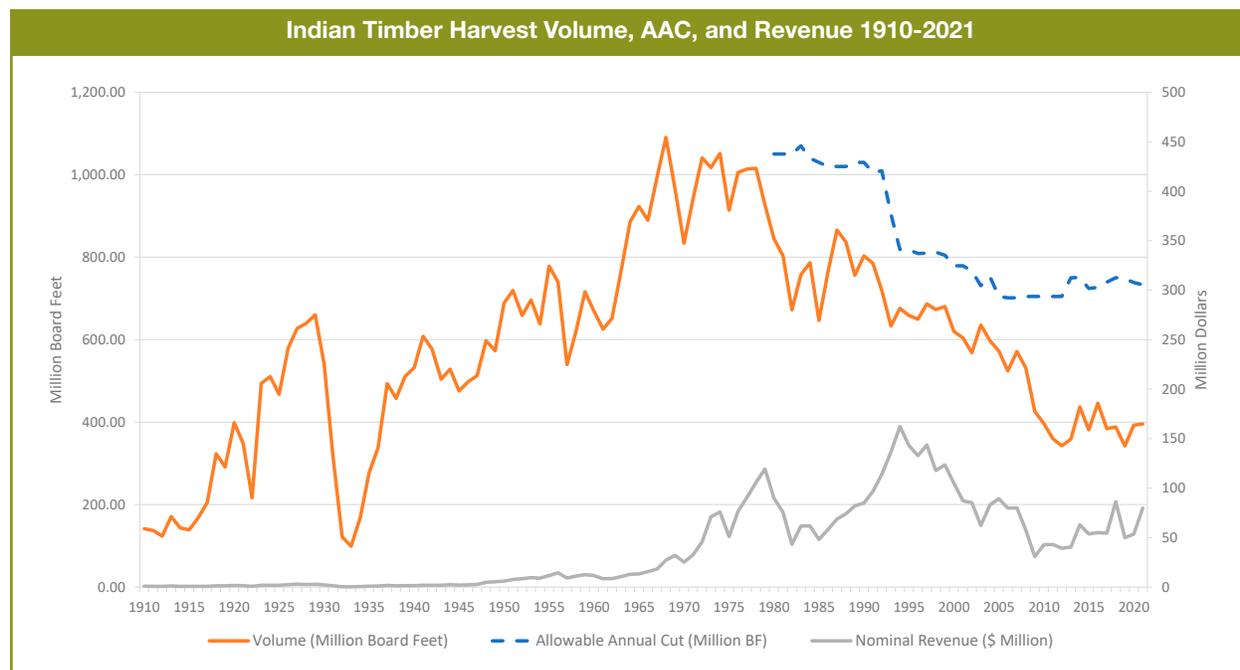
congressional budget justification document known as the BIA Greenbook. Greenbooks are published by several government agencies. The BIA Greenbook provides justifications for all Indian Affairs' programs and performance data. Budget data on fire preparedness and hazardous fuel reduction comes from the DOI Office of Wildland Fire and the BIA Forestry central office.

The BIA Forestry central office also does a survey of the tribes called the Funding and Position Analysis (F&PA) that periodically (once or twice a decade) queries tribes about expenditures, existing staffing, and additional staffing needs.

BIA allocations to Forestry have fluctuated over the last 30

years (Table A.1). In terms of 10-year measurement points, BIA Forestry and Fire funding peaked in 2001 in both nominal and inflation adjusted bases (\$2019). Forestry funding, in real terms, has declined 21% over the last 30 years. During this 30-year period Indian forest trust lands have increased from 15.6 million acres to 19.3 million acres, meaning that on a per-acre basis, funding, in real terms, has declined by almost 36% over the last 30 years. Some tribes have expressed that they have not had a budget increase in 30 years; others have had budgets or services reduced. On at least one major timber producing forest, tribal contributions are paying for BIA personnel. Although timber prices have improved

Figure A.1. Indian timber harvest, AAC, and revenue.



since 2009, tribal contributions to the forestry program across Indian Country have been pressured from reduced harvests (Figure A.1), shifting tribal goals, limited staff capacity, and inadequate funding. For many tribes, forest management deductions (FMD) accounts are exhausted. Planting and thinning backlogs are evidence that forest investments have been inadequate (see discussion under Task B). Decreased BIA funding has increased reliance on outside non-recurring grants (soft money), such as from NRCS. Grant writing, administration,

and reporting is costly in terms of staff time. Tribes are increasingly reliant upon NRCS funding for conservation projects with some staff managers claiming more than half of their time is spent in grant writing, administration, and reporting.

The 2019 F&PA reports \$2.8 million were received as outside grants from other federal programs. Data on outside forestry grants and contracts are likely incomplete. Fire preparedness and hazard fuel reduction budgets that rose significantly in response to the

National Fire Plan (2000) have risen only marginally over the last 10 years in real terms (Table A.1).

In Table A.3 hazardous fuel reduction is included as part of forestry costs. This follows an IFMAT III recommendation to further integrate hazardous fuel reduction activities with forestry. Congress and the Forest Service recognized the interdependence of the two activities in recent budgets and now also present hazardous fuels as part of the National Forest budget instead of part of the Wildland Fire Budget. Although the Forest Service

Table A.2. Category 1 and 2 programs below minimum funding mandated by NIFRMA as prescribed under 25CFR 163.36.

TPA Funding Level	Tribal Program Funding				Grand Total
	All P.L. 93-638	Partial P.L. 93-638	All Compact	Partial Compact	
Zero Funding Reported	3	4	4	3	14
\$1 to Minimum Funding Level	6	6	9	3	24
Total - All Reservations	16	23	19	8	66
Pct of Program Underfunded	56%	43%	68%	75%	58%

Notes: Based on 2 GS09/Step 5 personnel, 2019 GS salary plus 40% fringe (OPM “Rest of US” schedule). The chart does not include BIA-serviced tribes.

Table A.3. BIA Forestry (Greenbook) appropriations for 2019 compared to 2011. Hazardous fuel reduction funding derived from Office of Wildland Fire. All dollars have been adjusted to 2019 using the Consumer Price Index. Land base is total forested acres.

	BIA 2011 (\$1000)	\$/acre	BIA 2019 (\$1000)	\$/acre
BIA Recurring Budget	29,453	1.60	28,666	1.49
BIA Non-Recurring Budget	20,127	1.09	26,925	1.40
BIA Special Budget	2,420	0.13		
Hazardous Fuel Reduction	45,818	2.49	38,728	2.01
Total	97,818	5.31	94,319	4.89
Fire Preparedness (protected acres)	70,028	1.07	80,814	1.16

Notes: Other sources of funding that are not included are:

1. Forest Management Deductions (FMD), originally known as “Administrative Fees” are funds deducted by the BIA from tribal or allotment timber sales on the gross proceeds from the sale of forest products harvested from Indian lands. These can be spent for a wide range of forest management activities under an approved expenditure plan.
2. Natural resource funding from BIA programs outside of forestry that contribute to forestry projects.
3. Road investments funded by the Federal Highway Administration’s Federal-aid account to support the Indian Reservation Roads (IRR) program. This funding goes toward the BIA road system. It does not support construction or maintenance of resource roads, unless forest resource roads happen to coincide with BIA roads on reservations used for tribal public purposes.
4. Burned Area Emergency Response (BAER) or Burned Area Rehabilitation (BAR) funding. Tribal lands are the only lands within DOI that can use BAER funding for reforestation.
5. Reserve Treaty Rights Lands (RTRL) funding.
6. Contracting support overhead.
7. Other tribal contributions.

has requested in FY 2023 that hazardous fuel reduction funding be returned to the Wildland Fire Budget, this report continues to combine hazardous fuel reduction with Forestry. When the sum of all forestry components including hazardous fuel reduction are compared, there was a reduction of funding in real terms of about 4% and a funding-per-acre reduction of about 8% (Table A.3).

At the same time, the number of forest-owning tribes has increased so that the smaller pie is being divided into smaller parts. Several of the tribes that have newer forestry programs are not receiving any recurring funding. And, of the 41 tribal organizations IFMAT interviewed, it was concluded from the 2019 BIA F&PA report that more than 50% were not receiving the minimum recurring funding to staff their programs

as mandated under NIFRMA Section 3110 (Tribal Forestry Programs and prescribed in 25CFR163.36). Similarly, the data from 2019 BIA F&PA suggested that over all the Category 1 and 2 reservations with tribal forestry staffs, 58% were below the minimum level of funding prescribed in 25CFR163.36. A higher percentage of compacted programs appeared underfunded compared to contracted programs (Table A.2).

The changing balance between recurring and non-recurring budgets over recent years affects staff capacity, is discussed in a later section. An increasing reliance on non-recurring allocations, distributed annually, often by competitive funding allocations by regional BIA offices, does not provide dependable funding for multi-year tribal investments. Increasingly, tribes are turning

to other funding agencies, particularly NRCS, to obtain multi-year funding. This has implications for Indian Country as other funding agencies have missions not clearly aligned with tribal forest management, so the tribes must be opportunistic and bend their programs to accommodate other agency priorities.

Other BIA programs also contribute funding to Forestry which was not tracked in the F&PA assessments. These include Agriculture and Range, Fish, Wildlife and Parks, and Water Resources. The total 2019 TPA for these other natural resource programs was \$56.04 million. From a sample of tribes queried it was estimated between 10% and 15% of this TPA supports Forestry or about \$5.6 million to \$8.4 million, particularly for other resource participation in planning and monitoring.

Table A.4. 2019 BIA Trust forestry land base and expenditures by Region excluding hazardous fuel reduction and tribal contributions, Expenditures may differ from appropriations due to carry-over and supplemental funding. Source: 2019 BIA F&PA and BIA Catalog of Forest Acres.

BIA Region	Total Forest Acres (1000 acres)	Total Commercial Acres (1000 acres)	Sum of Analysis Costs (\$1000)	Average Expenditure/ Commercial Acre	Average Expenditure/ Forest Acre
Alaska	419	182	\$1,851	\$10.16	\$4.42
Central Office	0	0	\$1,097	n/a	n/a
Eastern	423	366	\$2,047	\$5.59	\$4.84
Eastern Oklahoma	205	186	\$575	\$3.09	\$2.80
Great Plains	382	363	\$1,011	\$2.78	\$2.65
Midwest	1,129	984	\$6,970	\$7.09	\$6.17
Navajo	5,427	1,539	\$1,648	\$1.07	\$0.30
Northwest	3,039	2,283	\$31,805	\$13.93	\$10.47
Pacific	202	168	\$4,209	\$25.06	\$20.82
Rocky Mountain	804	514	\$1,169	\$2.27	\$1.45
Southern Plains	99	99	\$370	\$3.75	\$3.72
Southwest	2,857	1,436	\$6,218	\$4.33	\$2.18
Western	4,292	2,087	\$7,467	\$3.58	\$1.74
Grand Total	19,278	10,207	\$66,437	\$6.51	\$3.45

Funding by Region or by land base is not equal across Indian forestry. As Table A.4 presents, the expenditures per acre average \$6.51 per acre for the commercial forest, and \$3.45 per acre for all forest lands. However, this rate of expenditure varies significantly from \$0.30 to \$20.82 per acre. While some of this variability is due to economy of scale (discussed later in this section), and regional differences in topography, and silviculture, there is an inherent funding shift to the forests of higher annual cuts to achieve BIA outcome measures.

Roads

A functioning forest road system is fundamental to protection and stewardship of forest resources and for tribes to achieve the maximum value that forests can provide consistent with tribal goals and objectives. The poor condition of forest roads in Indian Country has been documented by IFMAT

beginning in IFMAT I and their environmental effects have been significant issues in several mismanagement lawsuits. IFMAT I estimated that between \$200 to \$280 million dollars (about \$500 million 2019 dollars) would be needed to recondition and/or relocate, surface, and adequately drain an all-weather road system to reach parity with the Forest Service. The joint BLM/Forest Industry Road Maintenance committee composed of the BLM and adjacent landowners who share roads throughout the checkerboard lands of western Oregon established an annual cost basis of \$1,064 per mile (BLM OR/WA State Office, June 2019) for estimating costs of forest road maintenance for cost sharing purposes. The 2019 Forest Service Road budget, expressed per mile of FS road, is about \$500 per mile, per year.

The poor condition of roads continues to degrade forest related resources throughout

Indian Country. The Department of the Interior (2019) reports that 83% of BIA system miles of road did not meet acceptable Service Level conditions in 2014 and that was projected to increase to 88% in 2020. The majority of forest resource roads are not on the BIA system and only receive intermittent attention. Returns from resource mismanagement lawsuits have been used by several tribes to improve tribal road systems.

Secretarial Order 3372 issued in 2019 by the Department of the Interior required an inventory and assessment of the condition and maintenance needs of roads that are potentially beneficial to wildfire, fuels, and vegetation management planning. Roads are used not only in hazardous fuel reduction activities but are also logical places to position resources to stop wildfires. Poor road conditions leading to poor access and a lack of road signage can cause increased response

times to wildfires while the fires grow rapidly in size.

As part of the road assessment under Secretarial Order 3372, over 46,900 miles of roads located on Indian trust lands were inventoried and the condition and maintenance needs were assessed. About 43,300 miles of road were identified by the BIA to need upgrading at a cost of \$1.33 billion. Remedial work included all-weather rock surfacing, grading, resurfacing, adding drainage features, cleaning/adding or replacing culverts, bridge needs or repair, cattleguard cleaning/adding or repair, and road signs throughout the reservations. The largest cost is for rock, grading, and resurfacing. An estimated 379 bridges need repair or replacement, as well as more than 19,000 culverts. In some areas, increases in runoff due to projected seasonal changes in precipitation amount and intensity associated with climate change, as well as runoff following wildfire, make stream crossing and drainage improvements, particularly culvert sizing, even more pressing in order to protect water quality and infrastructure and maintain access for active management.

Decline of Funding for Forestry Staffing.

Tribes have repeatedly stressed the importance of annual recurring forestry funding (tribal priority allocation or TPA) to develop and maintain staff capacity to carry out a state-of-the-art forestry program. Based on the survey of 41 tribes, inadequate recurring funding is often listed as the primary

issue limiting their quality of forest management and the achievement of tribal goals. Non-recurring, or project funding, is useful for carrying out specific projects, but without adequate staff to plan and implement the projects, the forestry program is severely limited. Recurring funding has been increasing slowly over the last 15 years (Figure A.2). Non-recurring funding was relatively constant until about 2013 when it started to increase, much more rapidly than recurring funding. The ratio of recurring funding to total forestry funding reached a peak

in about 2013 and has steadily decreased (Figure A.3). Non-recurring funding is an unreliable source for maintaining or building staff capacity, although because of persistent low tribal forestry allocations, it has been used. Adjusted for inflation, total recurring funding has not kept pace with inflation. This affects tribes at all levels of self-governance. Also, although non-recurring funding has increased, it has not kept pace with inflation in recent years (Figure A.4).

At the same time, Indian trust acres have continued to increase

Figure A.2. Recurring and non-recurring funding for the BIA Forestry Program (USDI BIA Greenbook, various years) excluding hazardous fuel funding and in nominal dollars (unadjusted for inflation)

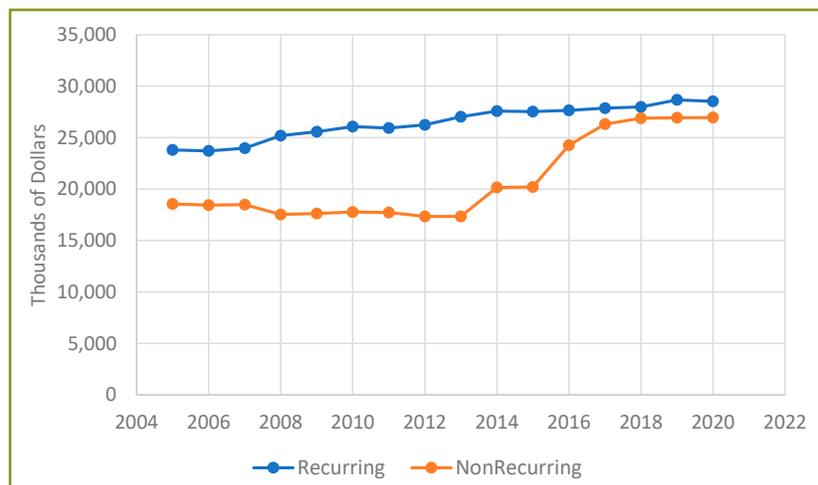


Figure A.3. Ratio of recurring funding to total forestry funding (USDI BIA Greenbook, various years), excluding hazardous fuel funding and based on nominal dollars (unadjusted for inflation).



Figure A.4. Recurring and non-recurring funding for the BIA Forestry Program (USDI Greenbook, various years) excluding hazardous fuel reduction funding and adjusted for inflation to 2020 using the Consumer Price Index.

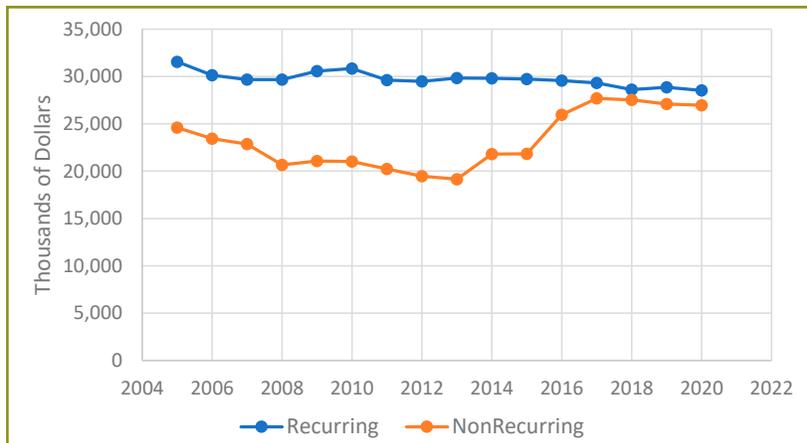
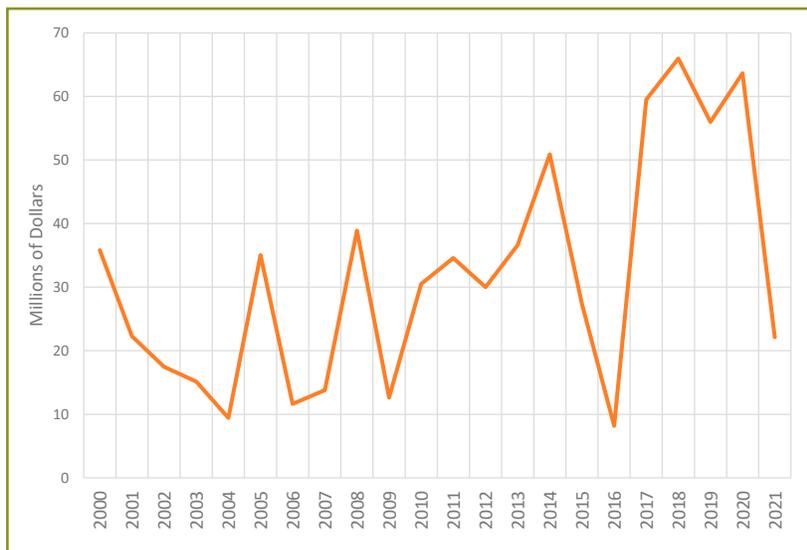


Figure A.5. Estimated potential value from missed sale offerings summed over all BIA Regions (nominal dollars)



as tribes bring additional forest land into trust, often because of adjudication of existing land claims, purchases of private lands within the reservation boundaries, and as additional tribes develop forestry programs. The decline in recurring funding has put pressure on tribal forestry organizations to reduce staff, to substitute technicians for forestry professionals, and, in some cases, positions have not been replaced in order to provide cost of living adjustments to remaining staff (see Task C).

The recent Bipartisan Infrastructure Law (2021) provided significant resources to offset investments in hazardous fuel reduction in green timber sales. One likely contribution to the slow implementation of that program is lack of staff capacity due to inadequate recurring funding.

The House of Representatives proposed 2023 funding (July 2022), that increases recurring funding to \$36 million and project funding to \$33 million, appears to recognize the severe

underfunding of the recurring program and reverses the trend of declining ratio of recurring funding to project funding. This is in the right direction, but still falls short of equity for tribal versus federal forests.

One indicator of the impact of inadequate forestry funding is revenue potentially lost to tribes due to inability to offer the entire volume in the allowable annual cut (AAC). This potential lost revenue, about \$400 million between 2010-2019 (see Table A.5 and Task F), can be estimated by multiplying the difference between the tribal AAC summed regionally minus the volume offered for sale summed regionally times the average stumpage price for the BIA region. This assumes the timber not offered was (1) of equal stumpage value to the timber offered, (2) that stumpage value the tribe would have received in that year was the same as the price for the sold volume, (3) that the additional supply would not have affected the stumpage price, (4) that the volume not offered for sale could not be captured in later years, and (5) that the tribe wanted to harvest the entire allowable cut (see Task F). This direct loss of revenue affects tribal services, forest-related employment, and the indirect economic activity generated by timber harvest. Other impacts of not harvesting the AAC are reduced forest resilience including heightened risk of mortality from drought and wildfire, and delayed or reduced potential growth from either regenerated stands or thinned stands. The large areas of Indian Country burned over the last decade highlight risks of not meeting the AAC.

Table A.5. Comparators used for BIA Regions.

BIA Region	Forest Service	BLM	State	Industry
Alaska	Region 10		AK	-
Eastern	Region 9		FL, ME, MS, NC, NY	Northeast, Appalachia
Eastern OK	Region 8		OK	-
Great Plains	Region 2		ND, SD, NE	-
Midwest	Region 9		MN, WI, MI, IA	North Central
Navajo	Region 3		AZ, NM	-
Northwest	Region 6	O&C lands	OR, WA, ID, MT	OR, WA
Pacific	Region 5		CA	-
Rocky Mtn	Region 1,2		MT, UT, CO,	-
Southern Plains	Region 8		KS, OK, TX	-
Southwest	Region 2,3		CO, NM	-
Western	Region 3,4		AZ, NV, UT	-

Comparative Funding Analysis

As discussed in the Overview, the Indian forestry budget and expenditures were compared to various other federal, state and private organizations. Table A.5 presents a list and groupings of the organizations that were used in the analysis. Where there are overlapping administrative units or states, the data for these units were combined on a weight based on forest acres. Table A.6 presents a summary of the comparison with selected states. These states were selected for a more in-depth analysis of their costs, while Table A.12 presents the averages based on nationally reported data. Table A.7 presents the estimated management costs for private land owners. Table A.9 presents the data for the Forest Service while Tables A.10 and A.11 present cost calculations for the BLM. Table A.12 presents a comparison summary across all analyzed organizations.

State Forestry Program Expenditure

State expenditure in their forest management program varies greatly from state to state, but is primarily based on their land base and forest products infrastructure. Many states have a minimal forestry program, while a few states such as Oregon, Washington and Minnesota are greatly invested in their forests.

Through the 2018 National Association of State Foresters (NASF), cost estimates for all participating states were available. Selected states were extracted for an in-depth analysis to compare expenditures. Table A.6 presents the results of this analysis, while Table A.12 presents the summary of all states used in the comparative analysis.

Indian forestry programs in the Midwest are generally spending the same amount per acre as the states, but tribes in Northeast and Northwest are significantly below their respective state investments. In the Midwest, the Regional Office allocates \$7.09 per acre (Table A.4) where the states allocate in the \$6-10 range (Table A.6, Table A.12). In the East, the Regional Office allocates \$5.59 per acre (Table A.4) where the states allocate \$10-11 (Table A.6, Table A.12). In the western regions, the states spend much higher rates per acre (Table A.6) than the \$13.93 per acre spent in the Northwest Region (Table A.4).

Table A.6. Comparison of federal forest management allocations to tribes to selected states (\$/acre) ¹.

BIA Forestry Allocation to Tribes w/o hazardous fuel reduction	2.89
BIA Forestry Allocation to Tribes with hazardous fuel reduction	4.89
States Midwest/East	
Wisconsin State Lands	6.06
Minnesota State Lands	6.99
Michigan State Forests	6.66
Maine State Forests	10.40
States West	
Montana Trust Lands	7.36
Idaho Department of Lands	18.00
Washington Trust Lands West	34.85
Washington Trust Lands East	11.12
Oregon Board of Forestry Lands	39.23

¹ BIA allocations are shown with and without hazardous fuel reduction funding. Funding does not include fire preparedness. Land base for tribes is all forest land including woodlands. Derived from Deckard (2021), Gonser (2021), NASF (2018), Poudel (2021), Buffo (2021), ODF (2019), Maine BPL (2020).

Table A.7. Private forest management costs (\$/acre) in selected areas of the eastern and western United States¹.

	Average	Minimum	Maximum
Private East			
Southeast - Natural Pine/Hardwood/Planted Pine	5.53	1.52	19.12
Northeast - Spruce/Fir and Natural Hardwoods	5.19	4.25	7.50
Northcentral - Natural Hardwoods	5.05	3.89	7.42
Appalachia - Natural Hardwoods	3.08	1.80	5.49
Private West			
W. Washington/W. Oregon Douglas-Fir/Hemlock	21.66	9.12	70.68
E. Washington/E. Oregon Pine/Fir	8.27	2.28	13.68

¹ Provided by two major forestry consulting companies in 2011 updated to 2019 dollars using CPI. Costs do not include fire management.

Private Industrial Expenditure

There is evidence that private industrial companies that have forest land holdings, spend, on average (Table A.7), about the same as the tribal programs (Table A.4) in the eastern regions of the United States. The analysis indicates higher average management costs for private owners in the western half of the Western US region, but slightly lower in the eastern half (Table A.7).

A separate study of forest management investments by

Table A.8. Forest Administrative Costs (\$/acre) for four ownership groups in Pacific Northwest¹

Consulting Firm or Management Service	\$20
Private industry	\$28
Non-federal Public	\$36
Tribal	\$25

¹ Source: FBRI, 2019

private landowners in the Pacific Northwest (FBRI, 2019), found similar investment numbers for the western US as the first study (Table A.8). But FBRI found that tribes had lower forest administration costs than non-federal public and private industry comparators, but higher

costs than consulting firms or management services. This suggests that use of management services might be one way that smaller tribes might take advantage of management services to substitute for lack of scale.

Forest Service Funding

Appropriations for the National Forests increased about 6% in real terms between IFMAT III (2011) and IFMAT IV (2019) (Table A.9). The increase was largely due to higher funding for hazardous fuel reduction and the increasing importance of several other funding mechanisms: stewardship contracting, the timber salvage fund, and the timber sale pipeline. In 2019 approximately 26% of the National Forest harvest came from stewardship contracts. Funding was not included from brush disposal funds (BD) and reforestation funds (KV) collected from timber sales, the Reforestation Trust Fund derived



Wildland fire engine for the Confederated Tribes of Grand Ronde in Oregon. PHOTO CREDIT: VINCENT CORRAO

Table A.9. National Forest Management Appropriation Budget for 2019 compared to 2011. Land base is National Forest acres less Wilderness. All are in 2019 dollars.

National Forest System				
Surface Land Management	FS 2011 (\$1000)	\$/Acre	FS 2019 (\$1000)	\$/Acre
Collaborative Forest Landscape Restoration	17,006	0.11	40,000	0.25
Land Management Planning (LMP)	51,157	0.32	180,000	1.14
Inventory and Monitoring	189,961	1.20	combined in LMP	
Wildlife & Fisheries Habitat Management	159,335	1.01	137,000	0.87
Grazing Management	56,502	0.36	57,000	0.36
Forest Products	381,752	2.42	368,000	2.33
Vegetation & Watershed Management	209,411	1.33	180,000	1.14
Landownership Management	104,245	0.66	75,000	0.48
Roads (All roads)	272,759	1.73	237,585	1.51
Facilities (1/2 of all facilities)	76,680	0.49	84,073	0.53
Hazardous Fuel Reduction	259,399	1.64	435,000	2.76
Subtotal	1,778,208	11.27	1,793,658	11.37
Stewardship Contracting (Funding of deficit Stewardship Projects)	10,824	0.07	37,182	0.24
Timber Salvage Sales (Funding for sale prep from salvage sale revenues)	26,185	0.17	38,676	0.25
Timber Sale Pipeline (Accelerate High Benefit/Cost sales)	-	-	3,044	0.02
Green Timber Stewardship Restoration Spending (Green timber receipts allocated to restoration in stewardship projects, GNAs)	-	-	58,000	0.37
Total		11.51		12.24
Law Enforcement	104,245	0.66	131,000	0.83
Fire Preparedness	665,303	4.22	1,339,620	8.49

from tariffs on imported forest products, or fuel-tax funds from the Federal Lands Transportation Program. For consistency with previous IFMAT reports, a net land base of National Forest acres less Wilderness was used in Table A.9 (157 million acres). The 2019 GAO report on Federal Timber Harvesting classifies only 96 million acres as forest land

as capable of producing timber crops and NOT withdrawn by statute or law. The largest part of the withdrawal (58 million acres) is designated as Roadless Areas outside of Wilderness (34 million acres). In some following tables, National Forest acres minus Wilderness acres minus Roadless acres is used when comparing budgets to commercial

timberland and commercial woodland acres in tribal forests.

Notice that between IFMAT III and IFMAT IV the fire preparedness budget for the National Forest Systems land went up 101% in real terms. During the same period, fire preparedness budgets for tribal lands increased only 15% (Table A.3).

“The most important thing about the forest is the forest.”

—IFMAT IV focus group participant

Bureau of Land Management Funding

BLM forest land management is primarily concentrated on the 2.5 million acres of Oregon and California (O&C) Lands in western Oregon (Table A.10). They are managed under what could be interpreted as a special trust responsibility to the counties where they are located. Their management cost (\$41.41/acre) is similar to the Oregon Department of Forestry lands (\$39.23/acre) which are managed with a timber production emphasis

under a special agreement to the counties where they are located. The BLM manages an additional 25.5 million acres of forest and woodlands outside

of Alaska and western Oregon (Table A.11). Most of those would be considered woodlands and receive limited funding.

Table A.10. BLM Western Oregon 2019 Budget excluding hazardous fuel reduction (\$/acre)¹.

BLM	\$/acre
Forest Management	12.72
Reforestation and Forest Development	9.28
Other Forest Resource Management	12.93
Resource Management Planning	1.54
Transportation and Facilities	3.72
Forest Road Maintenance	1.22
Total	41.41

¹ Source: 2020 BLM Budget Justification



New road installation on a timber sale for the Confederated Tribes of Grand Ronde in Oregon.

PHOTO CREDIT: VINCENT CORRAO

Summary

Regionally, the Indian forestry program is funded considerably lower than the Forest Service except in the Pacific Northwest. This is likely due to the fact that

substantial acreage of Pacific Northwest forests are in land allocations that preclude active management, such as late successional reserves, but these allocations were not subtracted in Table A.12. Note that state

and private comparators exceed both tribal and Forest Service comparators (Table A.12). State funding exceeds BIA funding in regions other than the Eastern Region.

Table A.11. BLM Forest Management Expenditures, excluding hazardous fuel reduction, excluding Western Oregon and Alaska.

State Office	Allocation (\$1,000s)	Forest and Woodland (acres)	\$/acre
CA	\$1,004	1,449,197	\$0.69
CO	\$950	5,076,349	\$0.19
ID	\$1,790	945,309	\$1.89
MT	\$1,740	1,289,991	\$1.35
NV	\$350	7,831,219	\$0.04
NM	\$390	1,120,539	\$0.35
OR/WA	\$1,489	1,188,679	\$1.25
UT	\$400	7,825,290	\$0.05
WY	\$766	1,290,162	\$0.59
Other Operations	\$948		
Total	\$9,827	28,016,735	\$0.35

Source: For budget allocations: Wade Salverson, Senior Forester, Public Domain, BLM. For forest and woodland acres: BLM Forest Lands, Status and Condition, 2006.

Table A.12. 2019 Expenditure in timber production (\$/acre) between selected groups.

BIA Region	Indian Forestry Average 1/	USFS Weighted Average 2/	USFS Weighted Average 3/	BLM Weighted Average 4/	State Weighted Average 5/	Private 6/
Alaska	\$10.16	\$12.95	\$22.32		\$0.20	
Eastern	\$5.59	\$6.91	\$11.90		\$11.34	\$3.08-\$5.19
Eastern Oklahoma	\$3.09	\$6.33	\$12.43		\$4.00	
Great Plains	\$2.78	\$4.25	\$9.51		>\$100	
Midwest	\$7.09	\$7.58	\$11.27		\$10.23	\$5.05
Navajo	\$1.07	\$2.23	\$8.17		\$2.43	
Northwest	\$13.93	\$4.76	\$9.81	\$41.41	\$27.26	\$28.00
Pacific	\$25.06	\$4.92	\$13.96		>\$100	
Rocky Mountain	\$2.27	\$4.08	\$9.26		\$11.29	
Southern Plains	\$3.75	\$6.33	\$12.43		\$53.17	
Southwest	\$4.33	\$2.23	\$8.17		\$6.60	
Western	\$3.58	\$3.00	\$9.43		\$9.97	

¹ Indian Forestry average based on sum of recurring plus non-recurring costs divided by commercial timberland acres. Source: 2019 F&PA

² Direct expenditures for timber production divided by Total National Forest Acres minus Wilderness minus Roadless. Source: U.S. Forest Service.

³ Direct expenditures for timber production plus stewardship expenditures divided by Total National Forest Acres minus Wilderness minus Roadless. Source: U.S. Forest Service.

⁴ BLM Western Oregon, primarily O&C and Coos Wagon Road Lands, includes reforestation.

⁵ Primarily National Association of State Foresters 2018 report supplemented with individual state information where available.

⁶ Forest Biometrics Research Institute.

Comparing Preparedness and Hazardous Fuel Reduction Funding Between Agencies

Preparedness funds allow agencies to quickly mobilize to suppress wildfires. Hazardous fuel reduction reduces the intensity of fires should they start and makes them easier to control. Fires per 100,000 acres on tribal lands have declined since IFMAT III but occur with greater frequency on tribal lands than on Forest Service lands (Figure A.6). In Task B, Wildfire Hazard Potential ratings (a measure of forest condition and resistance to suppression) are compared between owners. But for an overview here, the percent of acres with a High/Very-High Wildfire Hazard Potential rating on tribal forest lands are higher than any land managing agency in the Pacific Northwest Region and constitute about 41% (almost 8 million acres nationally).

Comparing funding for preparedness and hazardous fuel reduction between agencies, the Forest Service receives the highest per acre preparedness funding among the agencies (Table A.13). Part of this is due to the funding model for how aerial resources are allocated. The Forest Service also has the highest per acre funding for hazardous fuel reduction. Within DOI, the BLM and BIA are funded at about the same per acre levels using timberland and

woodland as the base. However, preparedness funding protects more than timberland and woodlands. In addition, some hazardous fuels reduction is done outside of forests, such as grass management on range lands. Maintaining healthy rangeland and grassland ecosystems will

support the protection of the neighboring forest lands.

Within DOI, BIA percent of total preparedness funding has been growing slightly compared to the other bureaus (Figure A.7) since 2015. Although the BIA Greenbooks show little increase in total trust acres over the 2006

Figure A.6. Fires per 100,000 acres on tribally protected lands (69 million acres) and Forest Service (191 million acres) (source: Mark Jackson, BIA).

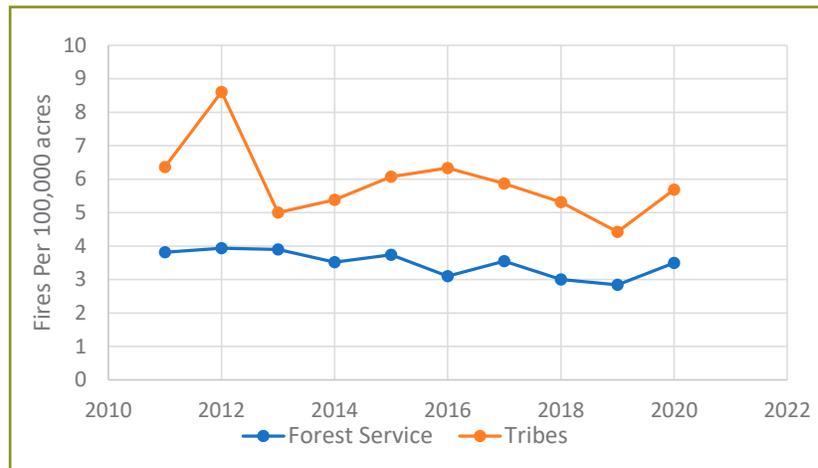
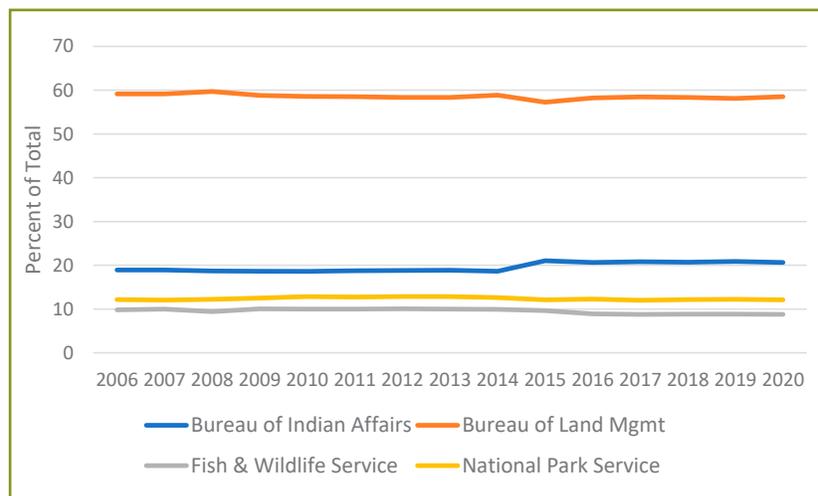


Figure A.7. Relative percent of appropriated total funding for fire preparedness within DOI. Source: Jeff Rupert, Office of Wildland Fire.



“When we went to self-governance, I don’t think we realized that we were inheriting a road network that was already sub-standard.”

—IFMAT IV focus group participant



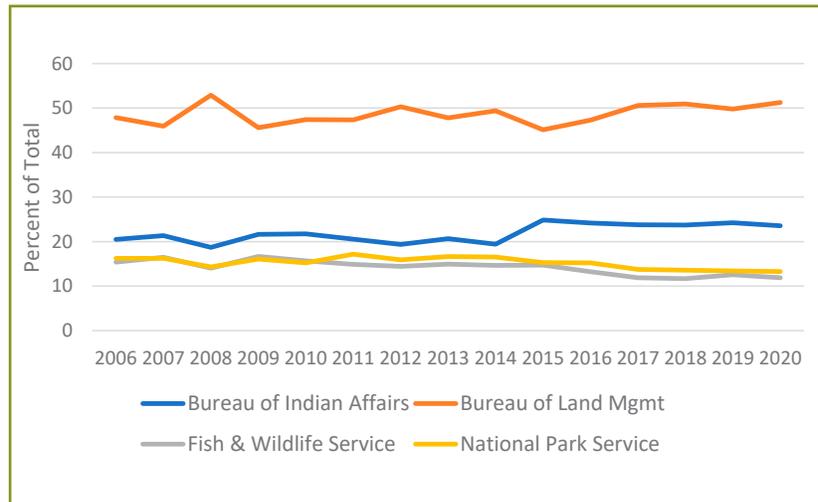
Logs leaving a timber sale on the Makah Reservation in western Washington state. PHOTO CREDIT: VINCENT CORRAO

to 2020 period, BIA forested trust acres have increased about 7%.

BIA percent of total appropriated funding for hazardous fuel reduction relative to other natural resource bureaus within DOI increased in 2015 (Figure A.8) and has remained constant since that time.

For comparison, Oregon Department of Forestry (ODF) provides fire protection to participating public and private owners throughout Oregon. Annual rates in 2020 vary by district with the highest protection cost in Southwest Oregon (\$4.42/acre for timberland) and the lowest in Northwest Oregon (\$2.21/acre for timberland). ODF provides fire protection for the western

Figure A.8. Relative percent of appropriated total funding for hazardous fuel reduction within DOI. Source: Jeff Rupert, Office of Wildland Fire.



Oregon BLM lands and several Oregon tribes. In 2020, the public rate for fire protection costs for range lands protected by ODF in eastern Oregon varied from \$0.30/acre to \$1.66/acre. This

compares to an average fire preparedness budget for the BLM of \$183.5 million spread over 245 million acres or \$0.75 per acre. (Madsen and Chadsey, 2022)

Table A.13. Preparedness and Hazardous Fuel Reduction Funding. 2019 appropriations expressed as a function of timberland and woodland acres.¹

	Timberland + Woodland Acres	Preparedness		Hazardous Fuels Reduction	
		(\$1000)	(\$/acre)	(\$1000)	(\$/acre)
BIA	16,567,479	65,911	3.98	38,728	2.34
BLM (including AK)	42,901,602	183,502	4.28	91,151	2.12
NPS	14,401,976	38,655	2.68	14,542	1.01
USFWS	21,689,901	27,853	1.28	22,981	1.06
USFS	123,123,547	1,339,620	10.88	435,000	3.53

¹ Budget source for DOI is Jeff Rupert, Office of Wildland Fire. For USFS it is from 2020 FS Budget document. Timberland and woodland acres are from Greg Dillon, Rocky Mtn Research Station and may differ from BIA Catalog of Acres and other agency reports. BIA Hazardous fuels do not include RTRL. Preparedness does not include indirect costs for DOI and Forest Service.

Effects of Scale

Economics of scale should be recognized in comparing National Forest management costs with costs of tribal management. Forest Service Ranger districts typically exceed 100,000 acres and can also draw pooled resources and expertise from National Forest supervisor offices which are often responsible for four or more districts. Thus, they enjoy economy of scale. This has been reinforced through consolidation of National Forests, ranger districts, and the establishment of work centers. A management study of private forest land management in the Pacific Northwest (Figure A.9) showed that management costs for smaller properties were more costly to manage than larger properties. A similar relationship was observed on tribal forests surveyed in IFMAT III. More recently (2019), the Forest Biometrics Research Institute (FBRI) plotted forest administration costs from 52 owners in the Pacific Northwest (Figure A.10). Administrative costs for a 50,000-acre forest were about \$30/acre and a 300,000-acre forest was \$20/acre per year.

Figure A.9. Forest management costs (\$/acre) as a function of size of ownership from a 1989 study of 17 private forest lands in the Pacific Northwest (IFMAT III).

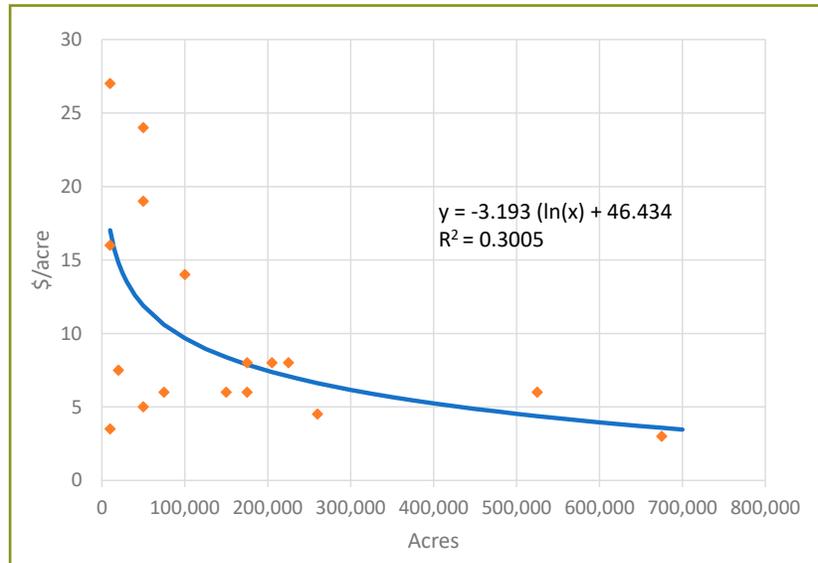
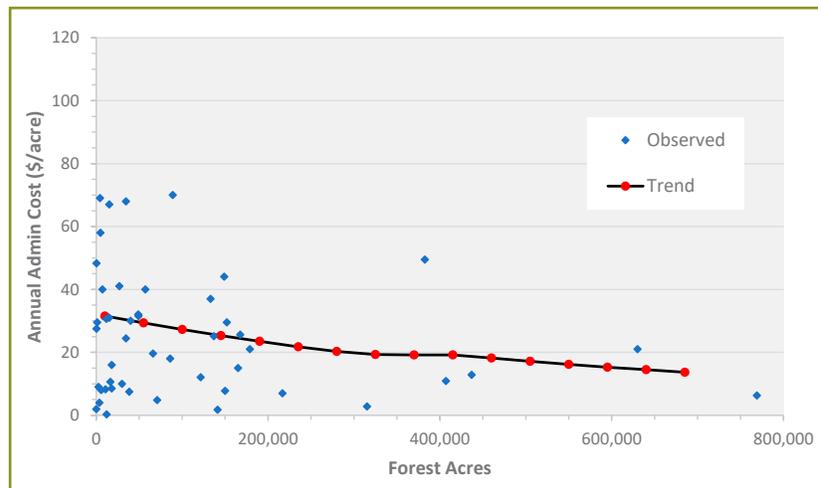
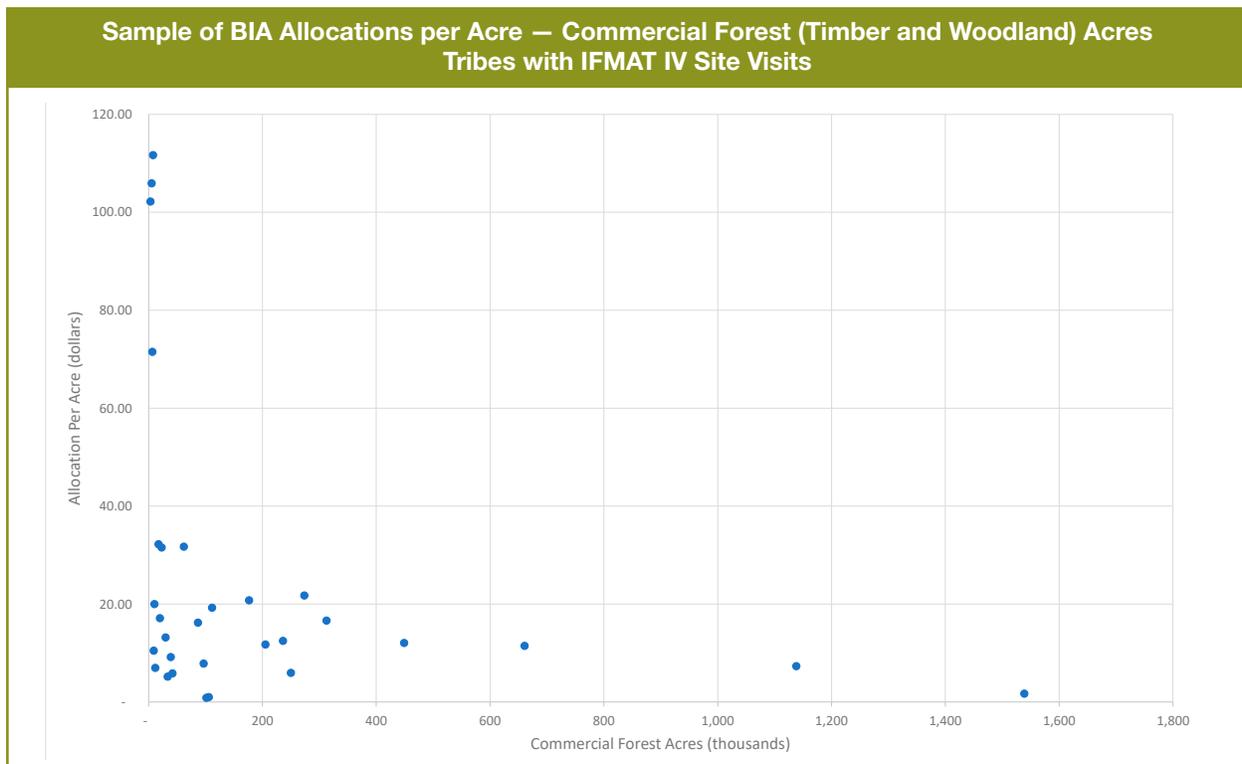


Figure A.10. Annual administration costs as a function of forest acres. Administrative costs include staff, buildings, vehicles, and roads (reproduced from FBRI, 2019).



Seedlings in a greenhouse on the Hoopa Valley Reservation in California. PHOTO CREDIT: VINCENT CORRAO

Figure A.11. Funding allocations (\$/acre) for sampled forested reservations.



To compare this analysis with tribal programs, a sample of 2019 funding allocations for forest management including hazardous fuels reduction funding was done. The tribes that were selected for IFMAT IV site visits and that reported funding allocations were used as a sample of the allocations per acre. Figure A.11 presents the trend of funding programs. The trend shows that the larger the forestry program the less it costs on a per acre basis to manage. This analysis was extended to all Category 1 and 2 forests for more cost efficiency (Figure A.12, Table A.14).

Category 1 and Category 2 tribes account for about 90% of the tribal commercial forest land including nearly all the commercial timberland. Using 100,000 acres or larger of commercial forest land as the base, the management cost multipliers for smaller tribal management units range from

Figure A.12. Cost Multipliers for Program Size and Category.

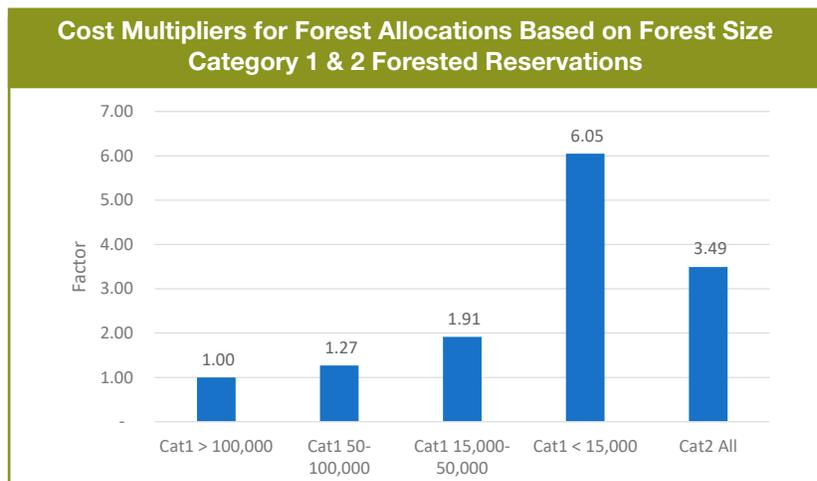


Table A.14. Cost Multiplier Analysis Data as a Function of Program Size and Category.

	Count	Average Funding	Commercial Acres	Factor
Cat1 > 100,000	18	\$9.15	6,735,926	1.00
Cat1 50-100,000	6	\$11.60	472,795	1.27
Cat1 15,000-50,000	14	\$17.52	398,800	1.91
Cat1 < 15,000	7	\$55.34	59,307	6.05
Cat2 All	31	\$31.95	640,501	3.49
Totals	76			

Weighted Factor 1.29

Note: Factors developed from forested reservations that reported forest management and/or hazardous fuels reduction allocations

Table A.15. Estimated Costs for Stewardship for Commercial and Other Indian Lands, \$/ac/year, using estimates based on National Forests for commercial forests and commercial woodland with an adjustment for reservation size and BLM for non-commercial woodland without an adjustment for reservation size.

	Stewardship including Hazardous Fuel Reduction	Preparedness to Support Stewardship
Commercial Forest Land	\$9.32x1.29=12.02 (National Forest)	\$8.49 (National Forest)
Non-Commercial/Range	\$2.35 (BLM)	0.75 (BLM)

1.27 to 6.05 with a weighted average of 1.29 considering the distribution of commercial forest land over 76 reservations (Figure A.12, Table A.14).

Parity with Forest Service and BLM Expenditures

Forest management goals for tribes are being increasingly focused on traditional uses, forest restoration, increasing forest resilience, and non-timber forest products and less on commercial timber production. Forest Service costs are separated between stewardship costs and timber production costs. The term stewardship in this analysis are activities that are performed for the restoration and maintenance of healthy, resilient forests outside of active timber production. The cost of stewardship (Table A.15) on the National Forests is estimated as \$9.32 per acre excluding Forest Products, Stewardship Sales, Salvage Sale Funding, and the Timber Pipeline (see Table A.9). On a per thousand-board-foot basis, the direct cost of timber production on the National Forests based on a planned sales offering of 3.52 billion board feet is about \$143/mbf.

For the BLM, outside of the western Oregon O&C lands, timber production is low, generally supporting forest restoration with an allocated budget of \$9.8 million (Table

A.11) compared to a hazardous fuel reduction budget of \$91.2 million (Table A.13), so they are grouped at a combined cost of \$2.35/acre. For average preparedness costs on non-commercial forest/range lands, the BLM preparedness budget \$183.5 million (Table A.13) divided by the 245 million BLM total surface acres or \$0.75 per acre is used.

To bring funding for Indian forests up to parity with funding for the Forest Service and Bureau of Land Management (Table A.16) it is estimated that a base of \$144 million is needed plus a timber budget depending on timber production consistent with tribal goals. At a harvest level of 400 million board feet, the timber production funding would be \$57.2 million. A timber production cost of \$143/mbf is used recognizing the tribes following federal government policies, other than those in the

ITARA demonstration project, are required to go through similar NEPA procedures as the federal government as well as Section 7 Consultation under ESA. The budget assumptions assume that Indian forest staff are brought up to equal pay for equal work as federal staff (see Task C).

The increase in funding to bring BIA Forestry to parity with federal funding on comparable lands in the Forest Service and Bureau of Land Management at a timber production level of 400 million board feet (MMBF) per year is estimated at \$201.2 million (see Table A.17). Deducting current funding sources of \$105.5 million leaves a budget gap of \$95.7 million additional needs (Table A.17). This combined with the \$41.9 million in additional wildfire funding (see Fire Preparedness section below) makes up a total funding gap of \$137.6 million to raise federal funding in tribal forestry to parity

Table A.16. Estimated Stewardship Cost and Timber Production Costs for Indian Forests for parity with federal investments in Forest Service and Bureau of Land Management.

Stewardship Cost	\$/acre	acres	million \$
Commercial Forest Land	\$12.02	10,206,625	\$122.68
Non-Commercial/Range	\$2.35	9,071,629	\$21.32
Subtotal			\$144.00
Timber Production	\$/mbf	million board feet	million \$
	\$143.00	300	\$42.90
	\$143.00	350	\$50.05
	\$143.00	400	\$57.20
	\$143.00	450	\$64.35

with other federal forest funding (Figure A.13).

Much of this additional funding is needed to build capacity and undertake vegetation density control and road maintenance on tribal forests. Density reduction is the most significant step tribes can take to increase forest resilience to wildfire, insect attack, and disease under projected climate change (Task B). About 41% of Indian forests (almost 8 million acres) are in High/Very-High Wildfire Hazard Potential (see Task B, Table B.4). To treat these high-risk acres periodically will require more than a doubling of the acres currently being treated in Indian Country, after the current backlog has been eliminated.

An Alternative Forestry Funding Needs Approach

For comparison, an alternative approach to estimate the funding shortfall to sustainably manage Indian forests is to use the data from the BIA Funding and Position Analysis (Table A.18) plus an estimate of the increase to reach wage parity for equal work plus funding to address the inequity of forest road funding. The 2019 BIA Funding and Position Analysis identified \$69.1 million in additional staffing and support needs (Table A.18). Assuming a salary equity differential to bring the BIA and tribal workforce up to Forest Service /BLM wage standards is 15% (Task C) plus \$500 per mile for currently unfunded road maintenance on the 46,300 miles of forest roads needed for active management = $69.1 + .15 (69.1 + 94.3) + (\$500/\text{mile}) (46,300 \text{ miles}) = 69.1 + 24.5 + 23.2 = \116.8 million additional needs.

This approach can be compared to the estimated \$95.7 million in Table A.17, thus the \$95.7 is likely a conservative estimate.

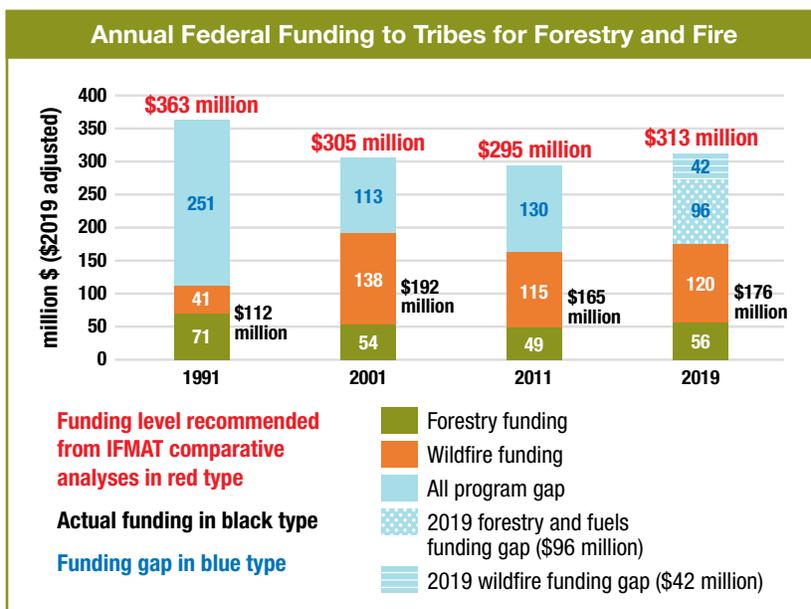
If these funding levels were implemented, significant

revision in BIA HR policies and procedures as well as some tribal HR policies would be needed to provide forestry staff capacity to address the current backlogs and bring equity to Indian forestry (Task C).

Table A.17. Summary of Indian forestry and wildfire funding needs.

Summary of Indian Forestry and Wildfire Funding Needs (Millions of dollars)	
Estimated Funding Needs	
Stewardship Management of tribal lands	\$144.0
Additional funds to support tribal timber production	\$57.2
Total funding needed	\$201.2
Less Current Funding Sources for Forestry	
Current BIA Forestry appropriations (Including Hazardous Fuels)	-\$94.3
NRCS Funding for tribal projects	-\$2.8
Other BIA Program supporting forestry	-\$8.4
Total Additional Funding	
Total additional funding needed for forestry	\$95.7
Total additional funding needed for Fire preparedness	\$41.9
Total Indian Forestry and Wildfire budget gap	\$137.6

Figure A.13. Annual federal budgeted funding level to tribes for forestry and fire adjusted to \$2019. IFMAT IV recommended funding level of \$313 million is based on a comparative analysis to the U.S. Forest Service and other federal programs. This amount does not include estimated federal contributions of \$11 million from other BIA programs or other federal sources such as NRCS. It also does not include needed funding to address backlogs (Table A.20). Subtotals may not add to total due to rounding.



These estimated increases in funding do not include investments to bring BIA roads up to standard for active forest management and protection (BIA estimate of \$1.33 billion), address law enforcement, or wild horse management.

Fire Preparedness

The increase in funding to bring BIA fire preparedness to parity with federal funding on comparable lands in the Forest Service and Bureau of Land Management is estimated as \$122.7 million (Table A.19) minus \$80.8 million (2019 BIA Preparedness including indirect costs) = \$41.9 million. This does not include needed improvements in the forest road system (\$1.33 billion) for forest protection identified under Secretarial Order 3372.

The need for increased preparedness resources until hazardous fuel reduction objectives are met is supported by:

- The higher fire starts (per 100,000 acres) in Indian Country compared to Forest Service land starts (Figure A.6), and
- A higher percentage of forests in the valuable timber of the Northwest Region in the High/Very-High Wildfire Hazard Potential classes compared to the Forest Service (see Task B, Table B.4).

Addressing Treatment Backlogs

In addition to the \$313 million to maintain tribal forests that are in a sustainable condition, there are significant backlogs of treatments that were not initiated

in the past. These backlogs involve delayed density reduction, delayed planting, delayed road restoration, and delayed hazardous fuel reduction. Each of these backlogs are discussed in more detail in other sections of the IFMAT report. This section summarizes the major backlogs and estimates the cost of addressing the backlogs over a 15-year period.

- Density reduction through precommercial thinning treatments to promote growth and forest resilience (see Task B). This reduces stocking in primarily non-commercial stands. An estimated 500,000 acres of tribal forest lands have

been identified as needing precommercial thinning.

- There is an estimated backlog of 500,000 acres of tribal lands that need planting (see Task B) as of 2019. This planting is due to forest lands that have been destroyed by fire, wind, insects or other causes, or lands that did not regenerate successfully from past treatments. The large fires of 2020 probably significantly increased the planting backlog.
- Restoration of forest roads: According to an analysis by the BIA, an estimated \$1.33 billion dollars is needed to restore forest roads and bridges

Table A.18. Identified Annual Funding Needs by Function¹

Program	Total Funding Needed (million \$)
Fire	16.8
Administrative Support	1.7
Forest Development	8.3
Forest Education	1.1
Forest Planning	11.3
Forest Product Sales	9.8
Forest Protection	0.4
Forest Research	0.3
Multi-Use Management	7.7
Other	1.1
Program Administration	4.5
Roads	6.0
Technical Assistance	0.2
Total	69.1

¹Source: BIA 2019 Funding and Position Analysis

Table A.19. Estimated Preparedness Funding for Indian Forests for parity with federal investments in Forest Service and Bureau of Land Management¹.

BIA	Preparedness (\$/acre)	Acres	million \$
Commercial Forest Land	\$8.49	10,206,625	\$86.65
Non-Commercial/Range	\$0.75	48,008,134	\$36.01
			\$122.66

¹ Preparedness for commercial forest land uses 2019 preparedness costs for Forest Service. Preparedness costs for non-commercial and other lands within the reservation boundary use BLM average preparedness costs.

Table A.20. Estimated annual cost to reduce major existing backlogs over a 15-year period.

Program with Backlog	Estimated Backlog	Cost Per Unit to Restore	Years to Accomplish	Annual Funding Need for 15-yr reduction of backlogs (million \$)
Precommercial Thinning	500,000 acres	\$300/acre	15	10
Planting	500,000 acres	\$500/acre	15	17
Road restoration and upgrading	43,300 miles/ 379 bridges	\$1.33 billion (total)	15	89
Reduction of hazardous fuels in the High/Very-High rating category	7.9 million acres	\$240/acre on 25% of the acres	15	32
Total Backlog Need				148

across tribal lands. About 43,300 miles of road and 379 bridges were identified by the BIA to need upgrading. Undertaking this work will also require significant road maintenance, along with the annual maintenance necessary to maintain the entire road system.

- Reduction of high hazardous fuels on tribal forest lands: Analysis by the US Forest Service Research Station indicates that at least 7.9 million acres of tribal forests (approximately 41%) have been classified as High/Very-High Wildfire Hazard Potential. Research has shown an estimated 25% of the total acres would need to be treated for effective control on the landscape (Jain et al. 2021).

If these backlogs were addressed over a 15-year period, an additional investment of \$148 million annually would be needed (Table A.20). Mobilization for these significant catchup projects will also need additional funding for HR and training. In context, the Forest Service received authorization to spend \$2.5 billion under the Bipartisan Infrastructure Law to reduce the hazardous fuel backlog on the National Forests. This compares

to an estimated \$0.5 billion in this report to treat the backlog of hazardous fuels on tribal forests.

Other Funding Issues

Law Enforcement

With the exception of wildlife wardens, there is extremely limited law enforcement on Indian forest lands. Several tribes note a lack of law enforcement capacity needed to pursue illegal fishing and hunting, camping, dumping, and illegal tree cutting on their reservations. Others reported that illegal activities on tribal lands are impediments to gathering and gathering-based practices such as basketmaking by making it unsafe for youth and women to go into the forest to gather (Task B). For reference, Forest Service law enforcement funding is about \$0.83/acre. Even if the entire BIA Fish, Wildlife, and Parks TPA funding was spent on law enforcement on the 19.3 million tribal forest acres, it would be equivalent to only \$0.27/acre.

Wild horses

Wild horse/feral horses are a forest and woodland management issue throughout the semi-arid West particularly on tribal, National Forest, and BLM lands. The impacts on forests and woodlands are discussed under

Task B as well as expenditures by the federal management agencies to address wild horses and burros. There are likely more than 40,000 horses above the acceptable management level on tribal lands. The wild horse adoption programs offered by the Forest Service and BLM provide up to \$1000 per adopted animal that is removed from federal lands. However, on tribal lands no formal program exists for the active management of wild horses and burros. Efforts within the BIA Office of Trust Responsibilities to fund programs to assist tribes is a start, but the incidental funding available does not come close to helping mitigate the issue. Up to \$40 million would be needed to provide support comparable to the National Forest and BLM lands.

Facilities

During site visits there was the observation that many facilities are in poor (or even worse) condition; some at the point they may need to be condemned. BIA Facilities provided the condition of the buildings used for BIA administered forestry and fire programs from their facilities inventory list. After reviewing this inventory list with selected tribal programs, IFMAT found this list is incomplete or out of date. Using



Forestry facility in need of renovation on the White Earth Reservation in Minnesota. PHOTO CREDIT: WHITE EARTH FORESTRY

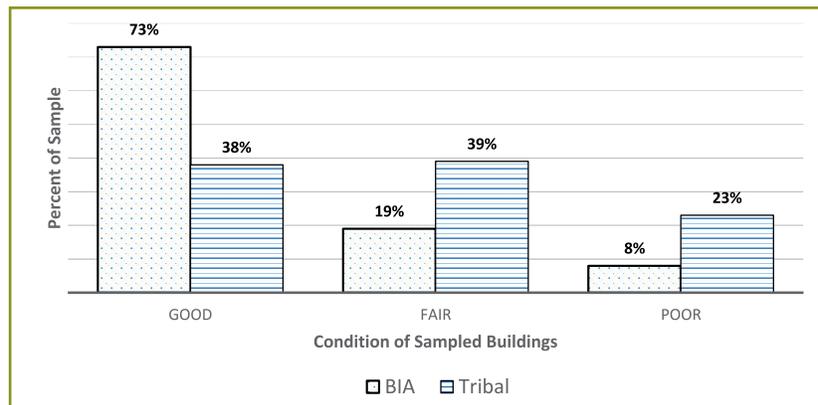


Facilities in need of repairs at the San Carlos Reservation in Arizona. PHOTO CREDIT: SERRA HOAGLAND

this inventory list, forestry related facilities such as warehouses, garages and greenhouses were summarized as to their condition (Figure A.14). Since incomplete data was available for all tribal facilities, a survey was undertaken of the tribes that were visited during the assessment. There is a significant reduction in condition between tribal forestry facilities and BIA forestry facilities.

Many tribal forestry facilities are in poor condition. Examples include blocked doors, unlockable doors, holes in ceilings, unpotable water, shortage of storage buildings for equipment, leaving some machinery outside in the elements and at risk for damage and theft, and many buildings have inferior computer networking, including cabling and wi-fi, causing issues in utilizing the latest technology available for forest management activities.

Figure A.14. Facility condition for BIA administered forestry facilities and tribal forestry facilities.



Funding for tribal facilities is insufficient to meet the significant needs for adequate facilities across all programs, not just for forestry and fire programs. The Bureau has a non-Education/Public Safety facilities program for Regional facilities management and operations with a FY2019 budget of \$18 million dollars. An additional \$4 million is available for Facilities/Quarters

Improvement and Repair (2020 BIA Comparison Table).

These additional funds are designed to correct infrastructure and building deficiencies. When reviewing the budget formulation process used by the BIA, IFMAT could not identify a direct way for tribes to request funding for updating their facilities.

“Our facilities are in an extremely dire state.”

—IFMAT IV focus group participant

Findings and Recommendations

Below are the findings and recommendations for the IFMAT IV assessment. Nine general findings were identified, ranging from issues surrounding tribal priorities, comparison of federal funding for comparable lands, forest infrastructure, funding delivery, and law enforcement.

Task A Findings and Recommendations

A1	Finding Many tribes are prioritizing non-timber uses and long-term stewardship and resiliency of their forests over timber production. <ul style="list-style-type: none">■ Many tribes are focusing on traditional uses for their land and less on the commercial forest products.■ Costs of all-land stewardship outweigh the availability of funds provided for commercial forest management operations.	Recommendation Revise federal funding to provide for land stewardship costs plus timber production consistent with tribal goals. <ul style="list-style-type: none">■ Combine forest management, hazardous fuels reduction, roads, and other natural resource funding sources into one stewardship funding source so tribes can more efficiently meet their objectives.
A2	Finding Funding for BIA forestry and wildfire preparedness continues to be far below investments in Forest Service and BLM funding for comparable lands. <ul style="list-style-type: none">■ Funding levels for commercial forest lands in Indian Forestry are roughly one-third the levels of the U.S. Forest Service for forestry and hazardous fuels reduction, and one-third for preparedness.■ BLM receives \$0.35/acre, BIA receives \$0.05/ac for woodlands.■ Backlogs in planting, precommercial thinning, and hazardous fuel reduction continue to grow.	Recommendation Increase annual funding for both forestry and wildfire preparedness to reach parity with Forest Service and BLM funding on their respective land classification. <ul style="list-style-type: none">■ To bring funding for Indian forests up to parity with fundings in the Forest Service and Bureau of Land Management, a base of \$144 million is needed plus a timber budget depending on timber production consistent with tribal goals. (\$201 million total base for stewardship and timber harvest of 400 MMBF)■ Increase federal funding for fire preparedness funding \$42 million for a base funding of \$123 million.■ A budget of at least \$59 million per year for the next 15 years would be necessary to reduce the backlog of forest treatments (Table A.20).



Lumber products leaving the mill at White Mountain Apache Timber Company in Arizona.

PHOTO CREDIT: MICHAEL DOCKRY

Task A Findings and Recommendations

<h3>A3</h3>	<p>Finding</p> <p>BIA and tribal road systems are in very poor condition jeopardizing forest protection, water quality, and active forest management.</p> <ul style="list-style-type: none"> ■ Funding for forest road maintenance is almost non-existent, with the majority of road funding going towards more used roads. ■ Projected increases, in some areas, in seasonal precipitation and intensity as well as wildfire jeopardize water quality, road infrastructure, and access for active management. ■ In 2014, 83% of BIA system miles of road did not meet acceptable Service Level conditions. ■ In 2019 over 46,900 miles of roads located on Indian trust lands were inventoried and the condition and maintenance needs were assessed. About 43,000 miles of road were identified by the BIA to need upgrading at a cost of \$1.33 billion. ■ Funding for qualified personnel is lacking for adequate road design and management (see Task C). 	<p>Recommendation</p> <p>Establish a separate Greenbook line item for tribal forest roads with a target of eliminating the forest road maintenance backlog.</p> <ul style="list-style-type: none"> ■ A budget of at least \$89 million per year over the next 15 years would be necessary to upgrade major forest roads. This does not include annual road maintenance costs (Table A.20).
<h3>A4</h3>	<p>Finding</p> <p>The Tribal Forestry Program funding requirements set forth in NIFRMA Section 3310 are not being met.</p> <ul style="list-style-type: none"> ■ More than 50% of the sampled tribes that IFMAT visited were receiving less in recurring funding than the minimum NIFRMA established to finance forestry functions assumed by tribes under self-governance. ■ Some newly established tribes with forestry programs are not receiving any recurring funding. ■ Overall, 58% of Category 1 and 2 reservations with tribal forestry staffs were below the minimum level of funding prescribed in 25CFR163.36. Based on analysis of the 2019 Funding and Position Analysis study, a higher percentage of compacted programs appeared underfunded compared to contracted programs. ■ Agency regulatory guidelines for staffing forestry programs are unclear. 	<p>Recommendation</p> <p>Congress needs to increase BIA funding to at least fund the minimum staffing needs established by NIFRMA for Tribal Forestry Programs.</p> <ul style="list-style-type: none"> ■ Agency funding guidelines should be clarified and funded.

Task A Findings and Recommendations

<p>A5</p>	<p>Finding</p> <p>The forestry workforce capacity is being eroded due to an imbalance between recurring funding and non-recurring funding as well as no adjustments for inflation.</p> <ul style="list-style-type: none"> ■ Programs are relying more on non-recurring funding to cover fixed costs of operations. ■ Projects requiring the use of non-recurring funding are being delayed or cancelled due to the reallocation of funds. 	<p>Recommendation</p> <p>Fully fund the recurring program to reduce the reliance on special project funds.</p> <ul style="list-style-type: none"> ■ Adjust the balance between recurring funding and non-recurring forestry funding to fully fund the forestry workforce. ■ Adjust annual federal funding to recognize inflation.
<p>A6</p>	<p>Finding</p> <p>Due to continuing resolutions and agency delays, appropriated funding is arriving too late in the year to efficiently implement forestry practices increasing costs, reducing effectiveness, and jeopardizing forest sustainability.</p> <ul style="list-style-type: none"> ■ Many projects are time sensitive and must be funded accordingly to ensure success. ■ Lack of Contracting and Awarding officials are persistent problems delaying fund distribution (Task C). ■ HR delays severely restrict building capacity when funding arrives. 	<p>Recommendation</p> <p>Develop mechanisms to provide bridge funding and increase workflow efficiency.</p> <ul style="list-style-type: none"> ■ Provide opportunities to carry over year-end funding to allow the funding of projects at beginning of the fiscal year. ■ Increase BIA Forestry Contracting and Awarding capacity and Office of Self-Governance capacity (Task C).
<p>A7</p>	<p>Finding</p> <p>Except for wildlife wardens, there is limited law enforcement on Indian forest lands needed to protect the resources from abuse and trespass.</p> <ul style="list-style-type: none"> ■ Additional law enforcement funding and staffing is needed to increase monitoring of the removal of forest resources. ■ The Forest Service receives \$0.83 per acre for law enforcement. ■ If the entire BIA Wildlife and Fish recurring budget was applied to funding of wildlife wardens, it would amount to \$0.27 per forest acre. 	<p>Recommendation</p> <p>Provide adequate funding for law enforcement (trespass) on Indian forest lands.</p> <ul style="list-style-type: none"> ■ An additional \$3-5 million per year would bring potential funding for law enforcement to one-half to two-thirds of the per-acre funding level on National Forests.

“You can’t put a price tag on the forest.”

—IFMAT IV focus group participant

Task A Findings and Recommendations

<p>A8</p>	<p>Finding</p> <p>Excessive wild horse populations continue to damage forests and watersheds in Indian Country, particularly in the West (see Task B).</p> <ul style="list-style-type: none"> ■ Tribal programs are not being included in national wild horse and burro management programs. ■ Funding for wild horse control is being funded out of existing program dollars and not a fixed budgetary line item as the BLM. 	<p>Recommendation</p> <p>Bring funding for wild horse control to parity with the National Forests and BLM.</p> <ul style="list-style-type: none"> ■ Invite tribes and the BIA to participate in the national action teams that exists between the U.S. Forest Service and BLM. ■ Fund the estimated \$40 million that will be required to address the current overpopulation of wild horses at a level consistent with Forest Service and BLM policies and expenditures.
<p>A9</p>	<p>Finding</p> <p>There is a significant difference between the condition of tribal facilities and those used by the Bureau programs.</p> <ul style="list-style-type: none"> ■ While the BIA facilities are in fairly good shape, tribal facilities are significantly worse in condition. ■ Many tribal facilities listed on the BIA facilities inventory (MAXIMO) are either incorrect or outdated. In some cases, tribal facilities are missing from the list. ■ Funding is inadequate to meet the needs for maintaining and supporting modern facilities. 	<p>Recommendation</p> <p>The BIA needs to better understand tribal program facilities needs and request the funding necessary to improve conditions for the employees.</p> <ul style="list-style-type: none"> ■ The Bureau should update the inventory of facilities to include all outbuildings and their condition. ■ The Bureau should secure funding to replace the federal buildings that are in very poor shape. ■ The Bureau should expand programs to help tribes replace inferior tribal buildings that are used to house contracted or compacted programs. ■ The Bureau should ensure that all building components, including computers, internet and wi-fi meet acceptable standards.

“There is nothing I don’t value in the forest. I can’t go down a list.”

—IFMAT IV focus group participant

TASK**B**

A survey of the condition of Indian forest lands, including health and productivity levels

Overview

This task presents broad overview of the health and productivity of Indian Forests by reviewing land base, growth and yield, forest health and wildfire trends. Based on overall health indicators of growth and mortality, tribal forests remain healthy overall and within the goals of tribal programs. There are issues of concern such as an increasing

number of acres that have high wildfire hazard potential, insect and disease, and the wild horse and burro problem which need to be addressed. Climate change appears to be creating additional risk of more frequent severe windstorms causing major blowdowns in some areas. Precommercial thinning and planting backlogs continue to be an issue in that many acres still need to be addressed.

Forest Condition

Forestland Acres Among Owners

The percent of forestland in tribal ownership is largest in the Southwest and Pacific Northwest (Table B.1). Both commercial and noncommercial trust acres have increased since the first IFMAT assessment (Table B.2). Based on BIA data, commercial forests now represent 53% of Indian forested



The IFMAT IV team looks at a wildfire scar and salvage unit that has been replanted during the site visit to the Colville Reservation in northeast Washington. PHOTO CREDIT: VINCENT CORRAO

“You can’t treat the forest like it isn’t alive.”

–IFMAT IV focus group participant

trust land in 2019, which is down from the 63% in 1991. Although the percentage of commercial forests fell, the commercial forest acreage grew, but not as quickly as the increase in woodland acres.

Stocking, Growth and Yield Among Owners

Stand density or “stocking” on tribal lands as measured by tree basal area, which combines both number of stems and their respective size, is consistently lower on tribal forestlands (including woodlands and reserves) than that on National Forest lands (except in the arid Southwest) and consistently higher than industrial lands (Figure B.1). These differences in basal area may be due to many factors, such as harvesting practices, site productivity and tribal objectives. Private landowners may harvest more aggressively on their lands, but the lands are often higher quality with higher growth rates. In contrast, Southwestern tribal lands are consistently overstocked relative to most of their neighbors, including the National Forests, reflecting a reduction in harvesting (due to a loss of funding, staff, support and markets). Across all regions, tribal lands typically have basal area that is most similar to (but generally greater than) small private, state and local ownerships (Figure B.1). These broad differences, however, must consider differences in site quality, age distributions and disturbance patterns – all of which influence landscape-level density/stocking.

Table B.1. Percent of forestland acres by ownership, based on 2021 Forest Inventory and Analysis (FIA) data.

IFMAT Region*	Ownership	Percent
Eastern	Tribal	.01%
	Industrial	29.1%
	Small Private	53.1%
	US Forest Service	5.3%
	Other Federal	3.0%
	State & Local	9.3%
	Total	100%
Lake States	Tribal	1.5%
	Industrial	12.6%
	Small Private	55.8%
	US Forest Service	10.6%
	Other Federal	2.1%
	State & Local	17.4%
	Total	100%
Northwest	Tribal	2.9%
	Industrial	15.3%
	Small Private	12.6%
	US Forest Service	53.4%
	Other Federal	10.3%
	State & Local	5.7%
	Total	100%
Southwest	Tribal	12.0%
	Industrial	6.6%
	Small Private	12.3%
	US Forest Service	39.3%
	Other Federal	22.4%
	State & Local	7.5%
	Total	100%

Sources: 2021 FIA Data Analysis

*IFMAT/BIA Regions

IFMAT	BIA Regions			
Eastern	Eastern			
Lake States	Midwest	Great Plains	Southern Plains	Eastern OK
Northwest	Northwest	Rocky Mountain	Pacific	
Southwest	Southwest	West	Navajo	

Alaska is not included since no FIA data is available.

Table B.2. Percent of Tribal Trust Forest Acres that are classified as commercial forest

IFMAT Region	IFMAT IV Forest Acres (thousand acres)	IFMAT IV Commercial Forest ¹		IFMAT I Percent of Total Forest Acres
		Commercial Forest Acres ¹ (thousand acres)	IFMAT IV Percent of Total Forest Acres	
Eastern	423	366	86%	57%
Lake States	1,815	1,632	90%	90%
Northwest	4,046	2,964	73%	69%
Southwest	12,575	5,062	40%	55%
Alaska	418	182	44%	96%
IFMAT IV Total	19,278	10,263	53%	63%
IFMAT I Total	15,899	9,941	63%	

Sources: 2019 Catalog of Forest Acres (As revised)

IFMAT I Percentages based on Table 8 in the IFMAT I report

¹ Commercial Forest = commercial timberland plus commercial woodlands

The standing volume on tribal commercial forest lands (as measured in board feet International Rule) has increased across regions with large positive net growth in each region (Table B.3). This consistent and stable growth demonstrates the potential for long-term sustainability on these lands and for these tribes. Tribal lands in the West continue to experience significant mortality from wildfires and other disturbances associated with drought, but typically less than neighboring non-industrial landowners; for example, National Forests currently experience 39-113% greater mortality across all regions. Southwestern federal lands specifically had over twice the mortality rate as tribal lands (187 bf/ac/year) resulting in -4 bf/ac/year net growth for that region.

Tribal lands are generally less productive (in terms of BF/acre/year volume growth rates) than neighboring lands except in the Southwest region; mortality rates are varied by region but are consistently lower than on National Forest lands; and harvest

removals are consistently lower than industrial lands except in the Southwest (Figure B.2). Much of this pattern can be explained by inherent site productivity differences and different management objectives within the different landowner groups, stand age distributions and management intensity. For example, industry tends to own higher-productive lands and manage them for optimal financial return on shorter rotations. Timber management on tribal lands maintains moderate levels of growth, well above the rate of removal (31-61% of net growth), but often limited by inherent site quality and high mortality rates in all regions other than the East. National Forest lands typically

grow more volume per acre per year than tribal lands, but less of that annual volume growth is harvested (only 10-28%) and mortality exceeds harvests.

In the highly productive Northwest, tribal forestlands are much less productive (based on net board foot growth) than all other lands except for National Forest lands, which are not statistically different (Figure B.2). This is likely due to large variability in productivity moving west to east across the region, and the effect of that spatial pattern on ownership; the dominant landowners in the drier forests of the inland Pacific Northwest are tribes and the National Forest. In the Southwest, however, tribal lands are equally or more

Table B.3. Net board foot volume change on Tribal Trust commercial timberlands by consolidated BIA regions, based on 2021 Forest Inventory and Analysis (FIA) data.

IFMAT Region	Bf/Ac/Year			
	Net Change	Gross Growth	Mortality (-)	Harvest (-)
Eastern	155.0	278.5	29.7	93.8
Lake States	88.2	140.4	35.9	16.3
Northwest	193.7	406.1	153.1	59.3
Southwest	128.2	205.4	68.2	9.0

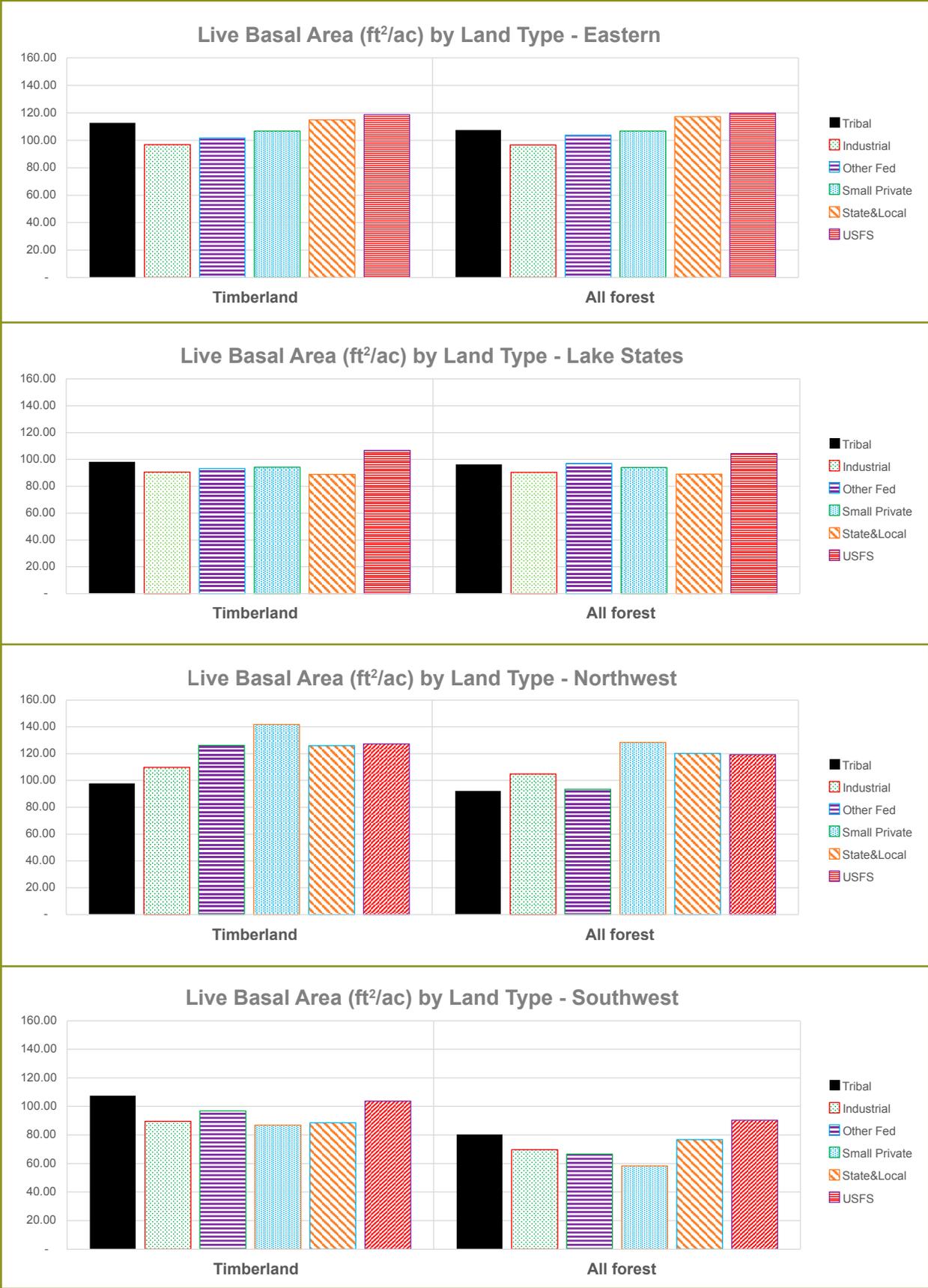


Figure B.1. A comparison of standing basal area (ft²/acre) across landowner categories by consolidated BIA regions; Forest Inventory and Analysis (FIA) data from 2021.

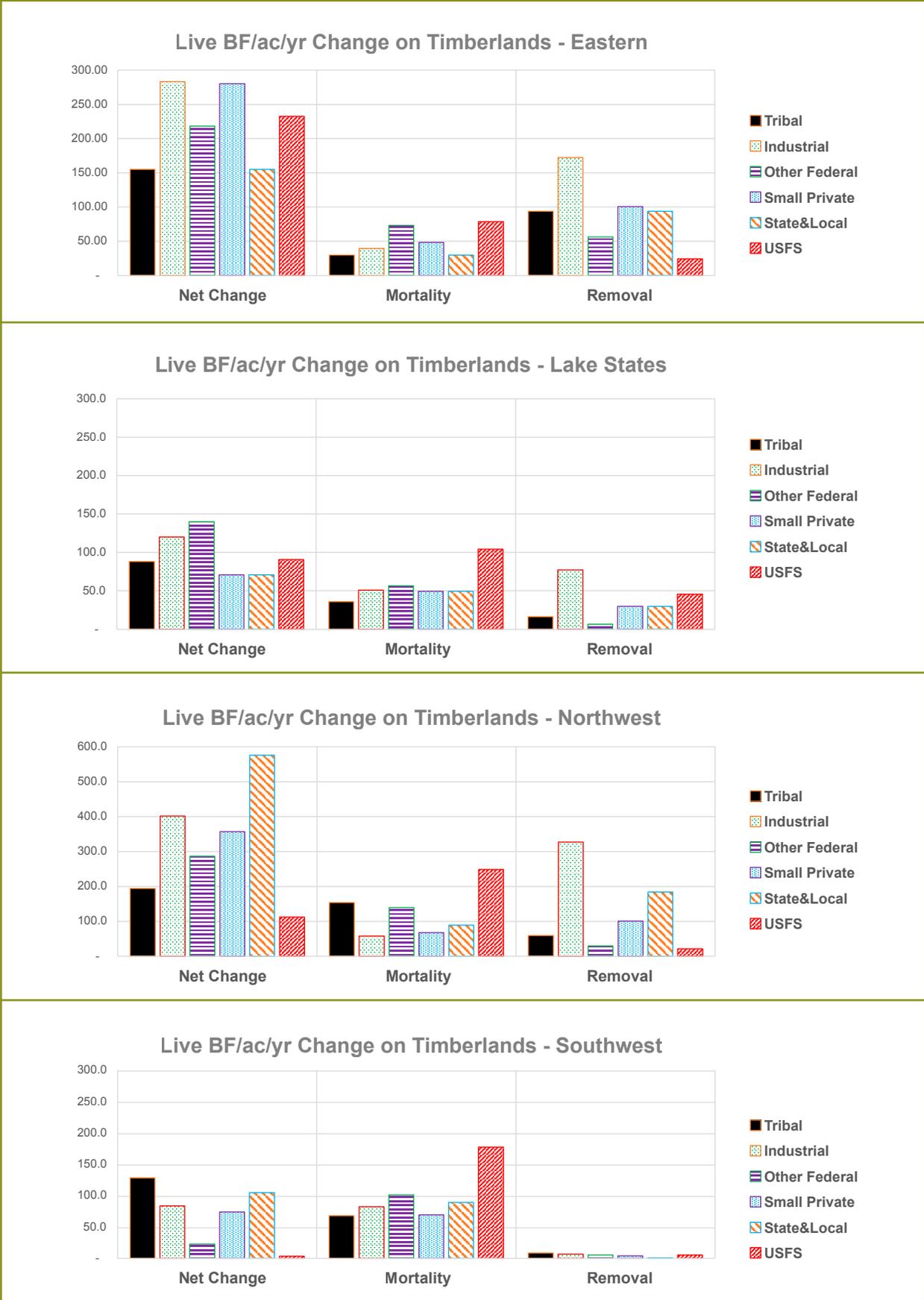


Figure B.2. A comparison of net volume change, mortality and removals in board feet (International rule) per acre per year across landowner categories by consolidated BIA regions; Forest Inventory and Analysis (FIA) data from 2021.

productive than many other landowners including federal lands. This pattern may reflect the history of how lands were allocated, purchased and/or held during the 19th and 20th Century

(the “value” of the land in terms of soils and climate and associated species), as well as any loss or gain of productivity through sound management including

prescribed fire and multi-aged management approaches.

IFMAT saw no evidence of recent loss of productivity on tribal lands, unlike National Forest



Figure B.3. A comparison of age class distribution across landowner categories by consolidated BIA regions; Forest Inventory and Analysis (FIA) data from 2021.

lands where the lack of active management leads to higher mortality from drought, insects, disease, and wildfire. Tribes tend to respond more quickly to address forest health issues through silviculture treatments and salvage operations than

agencies managing federal lands. Drier, fire-prone tribal lands are not immune to fuel accumulation issues and the impacts of climate change (longer fire seasons and drier fuels), but repeated examples were observed of tribal lands actively managed to be

multi-aged using partial harvests (thinning and gap creation) and prescribed burning to increase resistance and resilience to wildfires – a pattern much more apparent on tribal lands than National Forest lands. In the Lake States and Eastern regions,

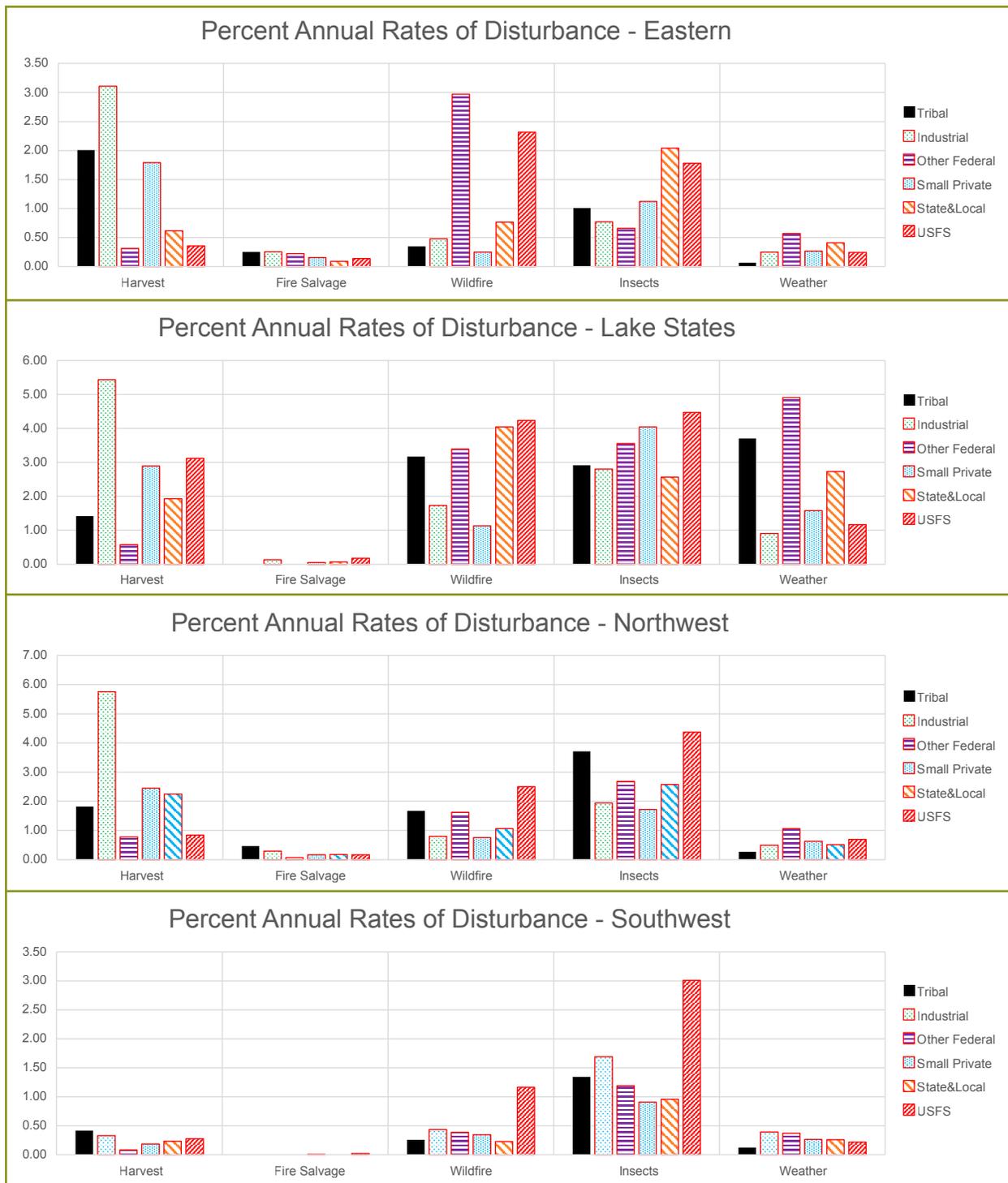


Figure B.4. A comparison of the annual rates (percent of total forest acres) of primary treatment (green harvest and fire salvage) and disturbances (wildfire, insects, and weather) across landowner categories by consolidated BIA regions; Source: USFS - Forest Inventory and Analysis, 2021 FIA reporting database.

most tribes are continuing to rehabilitate standing stock as well as the productive capabilities of their land, but many have been impacted by insects in the last ten years.

Age Class Distributions Among Owners

Other than in the Southwest, age distributions of forests on tribal lands are currently most like federal, state, and local governmental lands (Figure B.3) based on relative percentages of young, early seral conditions. Industrial and small private ownerships (other than the Lake States) have higher proportions of young stands reflecting more frequent harvests and/or natural disturbances. Tribes maintain a higher percentage of their lands in older stands, at or above that of the National Forests except for the Northwest (given the Northwest Forest Plan). More acres in older forests in the Southwest (60+% in stands >100 years) is likely related to a higher percentage of tribal lands managed with uneven-aged silvicultural approaches, which produce an “old” age class designation within these FIA data but represents a balanced age distribution (old and young trees within the same stand). Such stand conditions are maintained by regular, active management with high per-acre productivity and low insect/disease mortality. Stand disturbance patterns are fundamental to the age structure, productivity, and mortality patterns above. Except for the Southwest, harvesting on tribal lands has been sustained at 1-2% per year (Figure B.4), consistently lower than industrial lands but comparable to small private landowners and well above National Forest lands. Post-wildfire salvage is negligible

across ownerships. Federal agencies have adopted policies of no or very little salvage (hazard trees) following wildfires while tribes have expressed interest in increased support from the BIA to allow more salvage and more quickly following disturbance. The mortality rate on tribal timberlands has been significant in the Pacific Northwest, like on National Forest lands, and 40% greater than the rate of harvest. These latter losses are comparable across landowner groups but lowest on industrial lands where management of forest health is most proactive (consistent with aerial detection data – Figure B.4).

Backlog Trends for Precommercial Thinning and Planting

The backlog of precommercial thinning operations planned for managing stand density and fuels has remained a fairly constant 500,000 acres in the decade between IFMAT III and IFMAT IV (Figure B.5). Although lower than the one-million-acre backlog in 2000, progress to reduce this backlog has largely

stalled. The planting backlog has doubled recently given large, high-severity wildfires, particularly in the West. Tribes report difficulty in obtaining planting stock given a surge in demand for seedlings without a corresponding investment in seed collection/storage and nursery operations. Regeneration success has fallen in the last decade due to the combination of increased weed competition from delayed planting, harsh post-fire environments, and prolonged drought associated with climate change across many regions; some tribes are testing the effectiveness of herbicides to increase regeneration success. Tribes utilizing uneven-aged management approaches and prescribed burning have not reported regeneration issues.

Reforestation has averaged about 14,000 acres per year over the last 10 years and precommercial thinning has averaged 21,000 acres per year. This is a 10-year average of about 4% of the backlog for both reforestation and precommercial thinning.

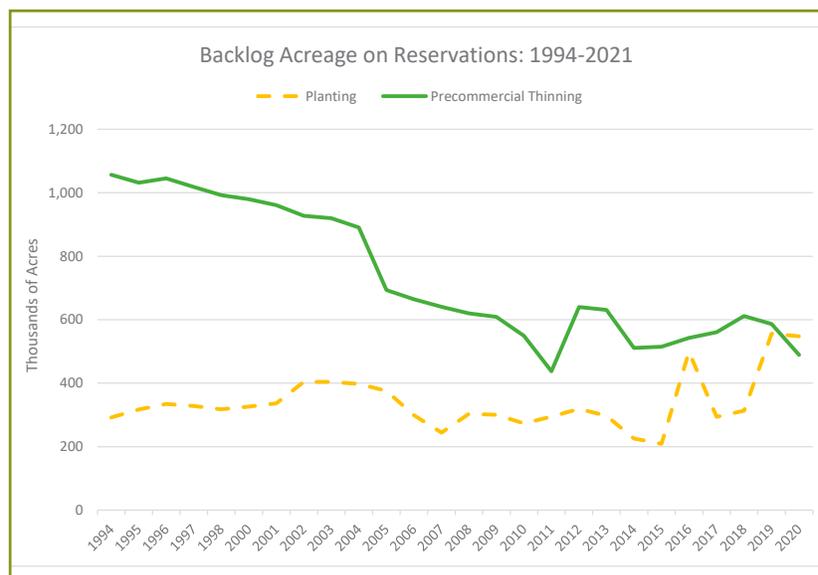


Figure B.5. Planting and precommercial thinning backlogs reported to Congress (BIA 2021).

Forest Health

Wildfire Trends and Risks Among Owners

Wildland fires are an ever-increasing threat to many tribes, primarily in the West but across North America (Figure B.6). Wildfire risk was a prominent theme in the IFMAT III report; that risk has only grown over the last decade for all landowners but often disproportionately for the tribes. Wildfires threaten tribal communities, their timber base, economic development in general and the long-term sustainability of their lands.

The threat of loss from large, high-intensity wildfire transcends the classic Euro-American perspective of wildfire risk and loss, dominated by a focus on risk to the wildland-urban interface, evacuation planning, fire-adapted homes and communities, insurance rates, timber loss/salvage, and economic impacts to businesses. Most tribes do not have the luxury of sufficient wildfire risk analyses and planning, nor widespread availability of fuels treatments in the wildland-urban interface, creation of home defensible space, and ample insurance coverage for their membership. Forest management, performed or administered by the BIA, is often already marginal in both extent and effectiveness to address wildfire risk, which limits tribal capacity to restore and maintain fire resistant and resilient landscapes. And, finally, effective wildfire suppression responses/campaigns during large wildfires preferentially focus on protecting human structures that are often non-tribal.

Tribes traditionally view their timber and woodland resources

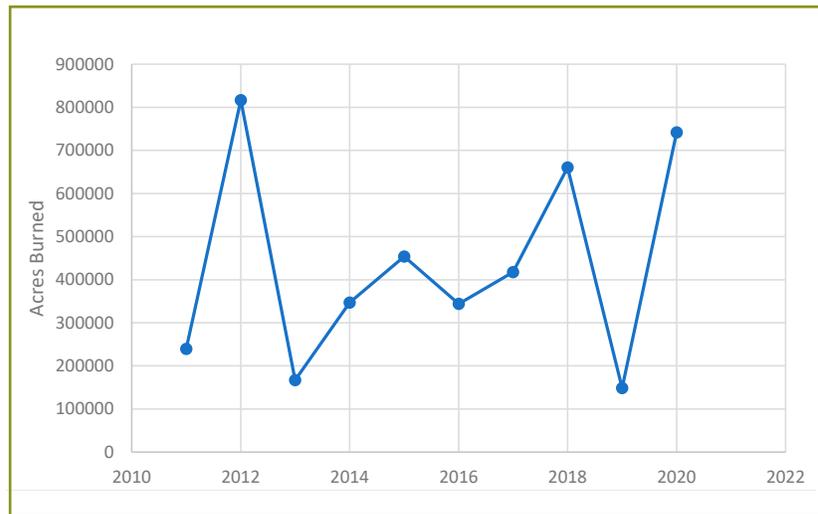


Figure B.6. Acres burned on tribal trust lands from 2010 through 2020 (BIA Central Office, Mark Jackson).

much more broadly than Euro-Americans and see the natural role of fire in wildlands more broadly than most current federal, state, and private landowners and managers. Tribes value their forests and waters with all their natural resources (first foods, cultural plants, timber, aquatic and wildlife species, forest products and life force) more than human structures; tribes are therefore less willing to sacrifice the forest and woodlands in order to protect second homes and recreational cabins dispersed in the adjacent National Forests. Beyond this fundamental difference in prioritization of fire management resources, the team heard many examples of ignored tribal input about:

1. potential proactive fuels treatment priorities to protect culturally sensitive resources and first foods;
2. reactive incident management decisions and suppression resource allocations that devalued tribal inputs and resources, altering ongoing risk analyses and resultant suppression and containment decisions; and

3. post-wildfire recovery and restoration analyses biased against tribal resources.

In short, the current Euro-American land and fire management system consistently disadvantages the tribes and has disproportionate impacts on their land base.

The Wildfire Hazard Potential (WHP) is a rating developed and maintained by the US Forest Service Fire Science Research group. It is a combination of wildfire likelihood and intensity and vegetation data from the 2010 LANDFIRE national database. Table B.4 presents the percentage of land by owner that is considered High/Very-High rating. The change in areas is due to changing field conditions between 2010 and 2021 holding the vegetation layer constant. Field conditions have been worsening in the West and moderating in the East. The changes in percentages and the regional ranking provide a method of evaluating the change in risk. WHP ratings using the 2020 LANDFIRE vegetation

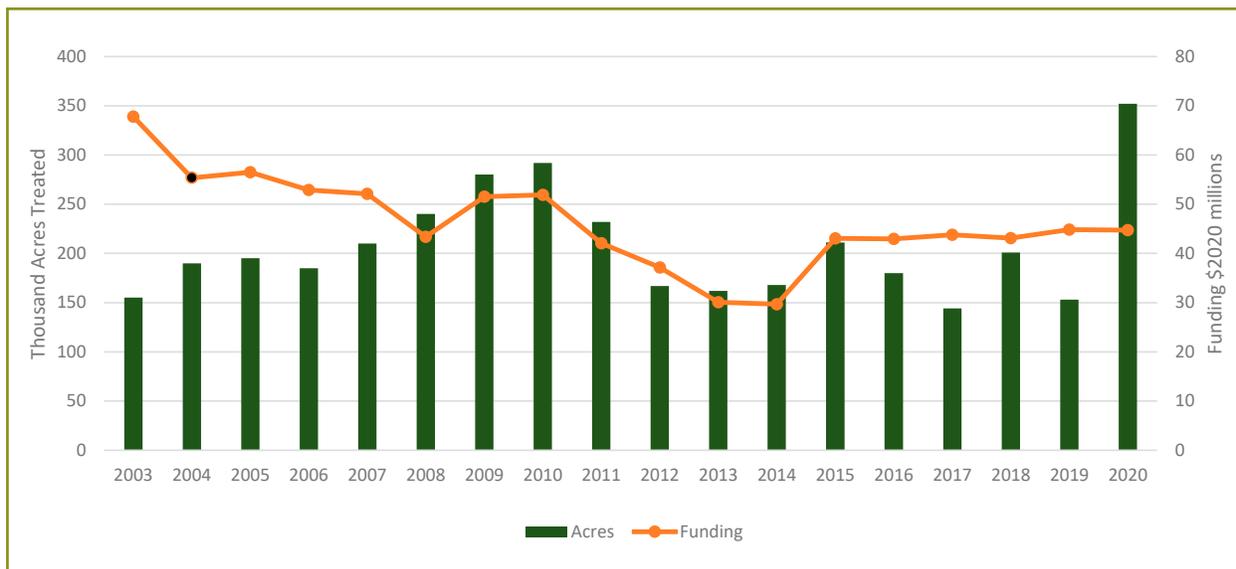


Figure B.7. Hazardous fuel accomplishments and funding (\$2020) including RTRL. Source: Funding from Jeff Rupert, DOI Office of Wildland Fire, Accomplishments from Mark Jackson, BIA. Note that reporting standards changed in 2020.

database were not available when this report was prepared.

The proportion of forested tribal lands in the consolidated BIA Pacific Northwest Region ranks highest among the ownerships, slightly worse than on Forest Service lands. For the other Regions, the BIA lands fared better, typically ranking lower than the other ownerships. However, like most other ownerships, the land in this hazard category has been increasing since 2010 due to increasingly harsh field conditions. Across tribal forests only, the percentage of acres in High/Very-High Wildfire Hazard Potential rating grew by 5% nationally over the last ten years, with the Southwest Region (9%) growing the fastest, followed by the Pacific Northwest Region (2%). This 5% increase is second only to the National Forests which increased at almost twice the rate (9%), but outpaces other federal lands (2%). State, local, and private lands saw no increase or an actual decrease over the same time.

The large severe fires in the Pacific Northwest Region in 2020 are a likely reflection of the severe weather conditions although suppression policies and forest condition likely contributed. Tribes have regularly identified wildfire hazard/risk as a major concern and offered many examples of successful fuels management programs; however, tribes also regularly expressed frustration at their lack of ability to treat more of the mounting acres of fuel hazard given lack of funding, staff time and capabilities, cooperation from the BIA where needed, and a marketplace for harvested materials. Tribes have also been concerned about suppression strategies that ignore tribal values.

Backlog in Treatment of Hazardous Fuels

Acres treated for hazardous fuels on forested lands increased following the large increases in wildfire funding in the early 2000's but accomplishments have fallen since 2010 to a trough in 2013 and have largely stagnated

since 2013 (Figure B.7). The large accomplishment in 2020 reflects a change in accomplishment reporting to align with other agencies as well as inclusion of treated non-forest acres following DOI policy guidance in January 2019. The 2020 on the ground accomplishment for forested acres are in line with previous years. A persistent problem has been the inability of tribes to expend the funds they have been allocated due to HR delays, lack of Contracting and Awarding officials, tribal employment priorities and late distribution of funds (Task A and C). Table B.4 suggests that 41% of Indian forests, or about 8 million acres are in High/Very-High Wildfire Potential. Although a significant amount of that area was likely impacted by the wildfires during the 2015-2020 period (Figure B.6), the hazardous fuel reduction program will need a significant and sustained boost to treat the remaining high hazard areas if they are to be protected within the next 10-20 years.

Insects and Disease Damage Among Owners

Mortality rates on tribal lands are relatively low across regions (Figure B.2) compared to other landowners, particularly the US Forest Service. These FIA data are confirmed by aerial detection

survey data trends over the last 25 years (Figure B.8). These 25-year trends, and the last 10 years, show consistently low levels of detectable insect and disease damage on tribal lands with two exceptions, damage levels comparable to non-federal forests and woodlands (comprised of industrial, small private and

state lands) and consistently lower than US Forest Service lands, a dominant landowner in the Northwest and Southwest BIA regions. Aerial detection surveys are valuable for detecting significant disturbance, but the technique has its limitations, for example, not all lands are flown each year, flights only occur

Table B.4. Wildfire Hazard Potential (WHP) in High/Very-High Hazard group by consolidated BIA Region as percent of total timberland plus woodland acres (derived from Dillon 2023). 2010 WHP ratings use 2010 LANDFIRE vegetation database combined with 2010 field conditions (burn probabilities). 2021 WHP ratings use 2010 LANDFIRE vegetation combined with 2021 field conditions (burn probabilities).

Region	Agency/Ownership	2010 Data	2021 Data	Change in Percent	Rank
Pacific Northwest (NWRO, RMRO, PRO)	BIA	46%	48%	2%	1
	USFS	39%	47%	8%	2
	Other Federal Govt	31%	32%	0%	3
	State & Local Govt	30%	28%	-2%	5
	Private	34%	29%	-5%	4
Eastern Region (ERO)	BIA	28%	11%	-17%	5
	USFS	19%	16%	-3%	2
	Other Federal Govt	30%	19%	-10%	1
	State & Local Govt	19%	16%	-3%	2
	Private	15%	15%	0%	4
Lake States (MWRO, SPRO, GPRO, EORO)	BIA	17%	10%	-7%	2
	USFS	17%	15%	-2%	1
	Other Federal Govt	6%	5%	-1%	4
	State & Local Govt	7%	5%	-3%	4
	Private	8%	7%	-2%	3
Southwest (NRO, SWRO, WRO)	BIA	36%	45%	9%	4
	USFS	35%	53%	18%	2
	Other Federal Govt	52%	58%	6%	1
	State & Local Govt	34%	47%	13%	3
	Private	26%	45%	19%	4
Contiguous US	BIA	36%	41%	5%	3
	USFS	35%	44%	9%	1
	Other Federal Govt	41%	43%	2%	2
	State & Local Govt	19%	18%	-1%	4
	Private	17%	17%	0%	5

once a year, and the method cannot capture highly dispersed mortality and invasive plants. In the decade since IFMAT III, increases in insect and disease

damage, primarily due to the tulip polar weevil, occurred in 2013 and 2015 in the Eastern region. This damage was apparent across all landowner categories,

but primarily affected tribal and National Forest lands. The Emerald Ash Borer is an important emerging insect pest, particularly for the Eastern region

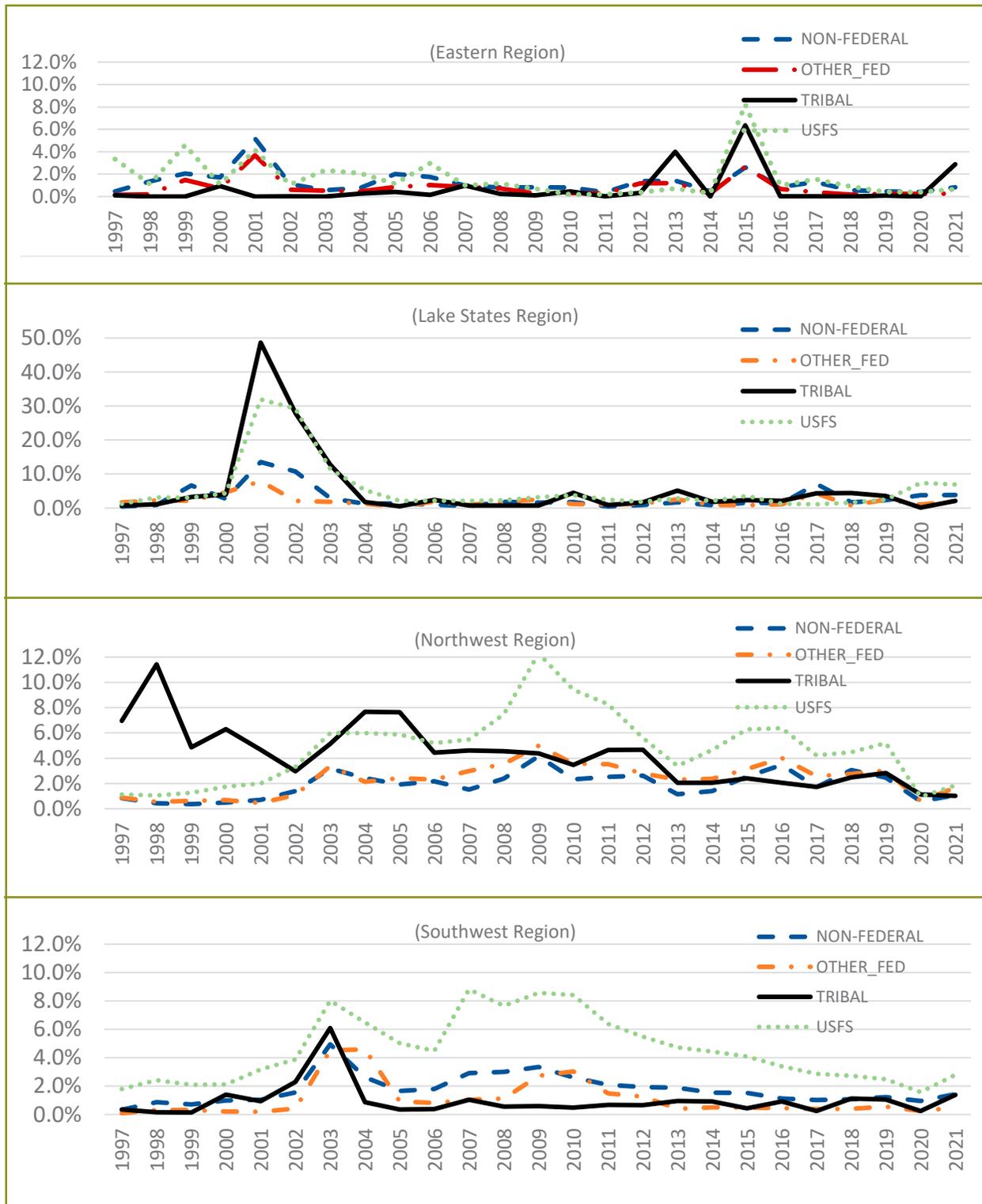


Figure B.8. Percent of estate impacted by insect defoliation and insect/disease mortality across landowner categories by consolidated BIA regions (aerial detection survey data through 2020). Note the scale change for the Lake States region (Janine Pashke, RedCastle Resources).

Table B.5. National summary of US Forest Service insect, disease, and invasive plant funding on DOI lands from 2013-2022. Note: there are separate call letters and funds earmarked for the Department of the Interior and Department of Defense, National Forest System, and State lands (David Mausel, USDA Forest Service).

Forest pest funding allocations (\$ thousands)										
Agency	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
NPS	793	1,038	513	446	576	773	642	488	674	830
BLM	475	310	588	273	250	323	250	435	472	250
FWS	-	94	343	230	288	157	171	55	187	85
Tribes/BIA	768	674	636	620	468	434	730	616	167	264
Total DOI	2,036	2,116	2,080	1,569	1,582	1,687	1,793	1,594	1,500	1,429

but likely to spread westward to affect riparian areas.

A number of tribes noted the higher levels of insect and disease damage and mortality on adjacent National Forest lands. An example of an invasion from off-tribal lands would be the Sudden Oak Death outbreak in California and Southwestern Oregon. That damage represents the dual threat of contagion and spread onto tribal lands and increases in dead fuel loading and wildfire hazard. Indirectly, lack of sustainable forest management on neighboring lands had implications for the work force, local economies, mill and biomass operations and the marketplace.

The most recent aerial survey data (2022) suggests abiotic mortality (wind, ice, heat, drought) in the Pacific Northwest was elevated in 2021. National forest and private lands were most severely impacted. Tribal lands were impacted, but to a relatively lesser extent. The elevated mortality may be associated with the unusually high temperatures in the Pacific Northwest during June 2021 referred to as the “heat dome”. Defoliation and mortality increased in the Eastern region in 2021 likely due to a combination of a large outbreak in the spongy moth (*Lymantria dispar dispar*), as it had its largest outbreak in 30

years, but also mortality from the Emerald Ash Borer.

Funding for insect and disease suppression on tribal lands was equivalent to the NPS and higher than the BLM and FWS (Table B.5). However, funding to tribes declined after 2020, possibly due to staffing changes in the BIA and the COVID-19 pandemic.

There is a lack of forest health staff in BIA and tribal programs engaged in addressing threats from forest pests. The application process for USFS funding is complicated with biological evaluation site visits and reports required. Awareness of forest health protection (FHP) funding, by tribes or the BIA, other than NRCS EQIP, may need improvement. The Forest Health Protection (FHP) group under USFS State & Private Forestry has several Special Project Program funding opportunities: Special Technology Development Program (STDP), Forest Service Pesticide Impact Assessment Program (FSPIAP), Biological Control of Invasive Forest Pests (BCIFP), Forest Health Evaluation Monitoring Projects (EM), and the Emerging Pest Program. All these grants fall under the regulations at 2 CFR 200, effective December 26, 2014 (USDA, Special Project Program Grants). Under USFS

authorities, funding must be used only for suppression and eradication of insect and disease. No prevention, restoration, or invasive plant projects are allowed. Establishment of a BIA dedicated FHP program would be an alternative. The National Park service is a good model, with their own dedicated FHP program.

Wild Horse and Burro Damage Risks

The impacts from Wild Horse and Burro (WHB) populations on tribal lands is of great concern to tribes across the West. While the Bureau of Land Management (BLM) and the US Forest Service (USFS) are more visible on this issue, the impacts on tribal lands are as great, and may even be greater. The tribes’ reliance on tribal natural resources makes the issue more impactful. Their need for water for subsistence, and the use of plants and herbs for medicinal and food makes decisions on reducing the herds of horses and burros more significant. While in most cases the WHB issues do not have a significant impact on the tribal forest lands, the impacts on range can and do seep over to the forests and need to be addressed even as part of the forest management program.

This issue has not changed over the decades, and in most cases is now getting worse. If these herds are not reduced to sustainable levels, the damage to the land may be beyond repair. Many tribes have individual programs and plans in place to address the situation, but most do not. The BIA does not have a plan to address this issue, they tend to address this under other programs on a very limited scale. Currently, the BIA is now in the process of inventorying WHB populations on all tribal lands through a research project with the USGS.

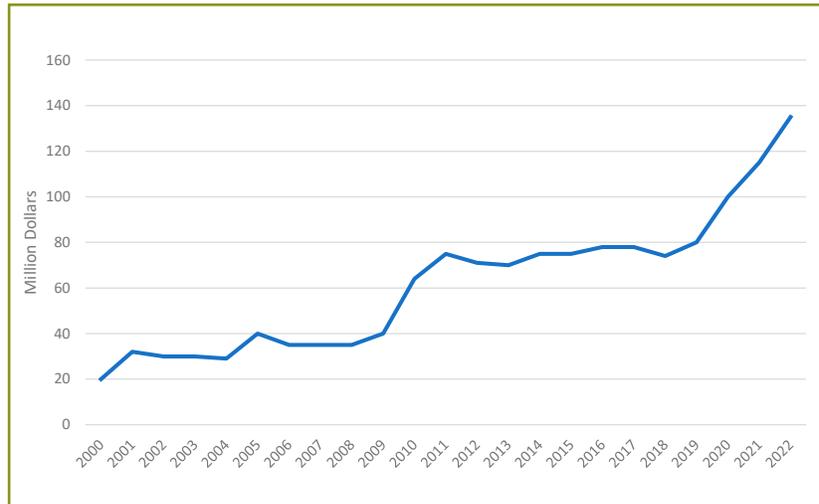


Figure B.9. BLM Appropriations for Wild Horse and Burro Management (derived from Congressional Research Service, Wild Horse and Burro Management: Overview of Costs, July 13, 2022)

While the federal government has developed a task force to address this issue and provide funding for WHB management, the funds only go to the BLM. While the USFS does not receive direct funding for the WHB issue, they do fund through general appropriations and are part of the federal task force to address the issue. Tribes and the BIA are not part of this task force.

Costs to manage the WHB populations on tribal lands greatly exceeds the amount allocated to tribes through the normal project proposal processes. The USFS spends roughly \$1,200 per animal for helicopter round up, trapping around \$1,000 per animal, and \$6 per day to corral the captured horses. The Forest Service and BLM have adoption programs that pay up to \$1000 for horses removed from the federal

lands. In FY21, the BLM spent \$8 million on horse removal. Once the herds are reduced to acceptable levels, there will be annual costs to sustain that level.

Funding for the WHB program is necessary to reducing herds and restoring natural resources on tribal lands. However, the funding for BIA programs is currently incidental. Congress is aggressively funding the BLM Wild Horse and Burro control program. In FY2022, BLM funding (Figure B.9) was increased to \$137.1 million dollars (Congressional Research Service, May 16, 2022), a six-fold increase in funding since FY2000 (\$20.4 million) and more than double the amount funded in FY2010 (\$64.0 million). This funding has allowed the BLM to reduce the herd size from 95,000 animals in 2020 to 82,400 in March 2022.

Table B.6. Comparison of Wild Horse and Burro populations on federal and select tribal lands.

Agency/Tribe	Acres Affected	Population (Wild Horses and Burros combined)	Acceptable Management Level (AML)
Bureau of Land Management	26.9 million	82,384	26,700
US Forest Service	2.5 million	8,000	2,370
Sampled BIA Lands (3 Tribes)	17.6 million	56,000	11,264

Sources: <https://www.blm.gov/whb>
<https://www.doi.gov/ocl/wild-horses-and-burros-0>
<https://www.fs.usda.gov/wild-horse-burro/territories/index.shtml>

Note: BIA AML is calculated by the BLM AML/Thousand Acres * Acres Sampled

Tribes need assistance in acting on this issue. The assessment that is ongoing needs to be completed and the Acceptable Management Level for each reservation needs to be estimated.

Tribal Forests and Climate Change

Site visits to reservations in all regions indicated that the effects of climate change are already evident. In repeated cases, growing seasons are shifting, winter and/or summer temperatures are increasing, fire seasons are longer, precipitation patterns are changing, and tree species are moving higher, or farther north, potentially leaving reservations. Adaptation strategies can be threefold: (1) protect resources from climate change by promoting tree/stand resistance and resilience, (2) promote stand recovery to a prior state or condition after disturbance, or (3) actively facilitate, or accommodate, forest change towards an anticipated future, such as assisted tree migration.

High tree stocking and fuel loading occurs throughout Indian Country, which presents an ever-increasing forest health risk by increasing tree stress during periods of drought and/or fire intensity and severity during wildfire events. Reducing tree density through thinning redistributes available resources among remaining trees, thereby increasing their resistance to drought as well as increasing diameter growth, particularly important for fire-adapted species. The ability of cambium tissue to survive fire is a function of bark thickness, and bark thickness is a function of tree diameter. The thicker the bark, the more resistant a tree is to surface fire. Similarly, reducing surface fuel loading decreases the probability of tree death during fire through reducing scorch height, potential for vertical spread into canopies,



A prescribed under-burn in a ponderosa pine stand on the Warm Springs Reservation in Oregon. PHOTO CREDIT: VINCENT CORRAO

and residence time at the base of trees. Backlogs in thinning and hazardous fuel reduction treatments directly reduce current forest health as well as future health of Indian forests.

Projections of climate change impacts suggest longer and drier summer periods are likely. Increasing acres in the “High to Very High” Wildfire Hazard Potential classes suggest wildfires will have higher resistance to control, potentially burning larger areas as happened in 2012, 2018, and 2020 (Figure B-6). Such wildfires create exceptional seedling demands that quickly exceed normal nursery capacity, delaying forest regeneration projects and making seedling establishment more difficult through delayed planting and higher vegetation competition when weeds and shrubs occupy deforested sites. Although herbicide applications and other treatments can hold back this competition, speculative seed and seedling purchases may

be a useful tool among tribes regionally, and in collaboration with their neighbors. Maintaining a supply of surplus seed and seedlings may be cost effective considering the costs of maintaining plantable sites, physical planting costs, and potential for planting failures.

Experiences by several western tribes suggest that pines at the lower elevations and western larch at the higher elevations have been most successful in weathering climate change and wildfire. True fir and other species are less successful and, as the “heat dome” of 2021 demonstrated, may be less successful in the long run, particularly under high stand density conditions. Species that can be grown under uneven- or multi-aged stand conditions may also have an advantage under changing climatic conditions, with tree density and fuel maintenance remaining crucial to sustainable forest management.

Task B Findings and Recommendations

Below are the findings and recommendations for the IFMAT IV assessment. Ten general findings were identified, ranging from excessive stand density, backlogs, integration of forestry and hazardous fuel reduction, integration of forest and woodland planning, wildfire protection and suppression issues, wild horse management (see Task A), and insect and disease management.

<h3>B1</h3>	<p>Finding</p> <p>For most forests throughout Indian Country, excessive stand density, high fuel accumulations, and insect and disease issues remain a major forest sustainability issue.</p> <ul style="list-style-type: none"> Nationally, tribal forest acres of High/Very-High Wildfire Hazard Potential (WHP) rating are increasing. The forested tribal lands in the consolidated BIA Pacific Northwest Region had the highest percent in acres of High/Very-High WHP among all ownership groups (see Table B.4) 	<p>Recommendation</p> <p>Reduce stocking density and fuel loadings consistent with tribal goals. Update Forest and Wildfire management plans when there are indications through active forest monitoring that the stocking (and ultimate fuel loading) are above critical levels.</p> <p>This can be accomplished by:</p> <ul style="list-style-type: none"> Maintaining an active forest monitoring program that can identify when forest density and fuels conditions exceed critical levels. Update plans as necessary based on this information and implementation of treatments. Building additional internal capacity (work force, training, and funding) to meet these challenges (see Tasks A and C). Better integrating the hazardous fuel reduction program needs into forest management planning and activities (see Tasks A and F).
<h3>B2</h3>	<p>Finding</p> <p>A 500,000-acre backlog of precommercial thinning acres remains since the IFMAT III report.</p> <ul style="list-style-type: none"> The 10-year average annual level of precommercial thinning is about 4% of the backlog acres. There remains a pressing need for density regulation, fuels reductions and maintenance of forest vigor and resilience to climate change stresses, including wildfire. 	<p>Recommendation</p> <p>Develop and implement plans to reduce backlog of precommercial thinning acres.</p> <ul style="list-style-type: none"> Build additional capacity (work force, training, funding, and contracting) to meet these challenges. Review/include treatment plans developed in the FMP planning process to determine where increases can occur. Develop marketing strategies for biomass products. Integrate hazard reduction activities into green timber sales using recently revised authorities (Task F).

Task B Findings and Recommendations

B3

Finding

Implementation of hazardous fuel reduction treatments is often made difficult by the continued separation of traditional forestry and fuels management units, with coordination of such projects often informal within tribal organizations.

- Annual plans for integrating management activities are not currently required and, tribes lack Regional support for implementation.
- Secretarial Order 3372 directs all BIA Forestry units to expedite active management of forests to reduce wildfire risks, but delayed BIA approval of burn plans have been cited by a number of tribes as a primary reason they have not been able to reach targets for hazardous fuel reduction.

Recommendation

Coordinate development of annual plans (Task D, Task F) on each reservation for integrating all forest management activities including hazardous fuel reduction activities and creation of operational wildfire containment lines, in anticipation of future large wildfire events and the need to contain those incidents.

- Build additional internal capacity (work force, training, and funding) to develop plans for integrating fuels treatments into road network maintenance, harvest plans, silvicultural prescriptions, watershed and wildlife habitat protection, and recreation planning.
- Review and streamline Regional Office procedures for burn plan approval implementation of prescribed fire projects and associated silvicultural prescriptions connected to planned operational wildfire containment lines.



A wildfire salvage sale on the Confederated Salish and Kootenai Tribes Flathead Reservation in Montana.

PHOTO CREDIT: MARK RASMUSSEN

Task B Findings and Recommendations

B4

Finding

Tree planting backlogs have doubled since IFMAT III because of large, high-severity wildfires, particularly in the West, and is likely to grow over the next decade across the regions.

- The 10-year average annual level of reforestation is equal to 4% of the backlog acres.
- Available seed and planting stock are often limited, and vegetative competition has reduced regeneration success in many areas due to delayed salvage and planting.
- Delayed funding has also jeopardized regeneration success.

Recommendation

Ramp up capacity (work force development, silvicultural training, funding, and contracting) to promote rapid, successful and appropriate reforestation of the existing backlog acres and new needs as they arise.

- Use all available tools in the silvicultural toolbox (i.e., mechanical, chemical and burning tools and techniques) to create and maintain plantable microsites in order to ensure the successful establishment of tree species; on particularly harsh sites, consider clustered micro-site planting as a regeneration option.
- Expedite Regional Office funding and support to avoid losing planting windows.
- Improve the procedures for securing BAER funding and the distribution these funds to meet reforestation needs of lands damaged by wildfire.
- Evaluate the Forest Development program to determine whether there can be a refocus on this backlog.
- Work with tribal, Forest Service and other nurseries to develop seedling production to meet demand.
- Consider potential for collaborative speculative seedling production at the regional or subregional level.

B5

Finding

Torching and crowning targets based on quantitative wildfire risk assessments are not well articulated in most forest and wildfire plans (or Integrated Resource Management Plans), so fuels treatments and hazard reduction effectiveness are difficult to evaluate in plans or on the ground.

Recommendation

Specify quantitative torching and crowning targets (i.e., acceptable levels of mortality under given fire weather conditions) in all forest plans.

- Use these targets systematically to identify hazardous fuel reduction treatment options and priorities.
- Monitor progress and adapt procedures over time.

Task B Findings and Recommendations

B6

Finding

Suppression activities during large wildfire incidents are increasingly inconsistent with tribal goals.

Given that tribes view their forest resources differently than most neighboring landowners and Incident Management Teams, and that sustained timber revenue is often an important goal for tribes, devaluing green trees during large wildfire incidents is not without significant short- and long-term cost to tribes. Specifically:

- Aggressive back-burning for indirect attack and wildfire containment has often increased the area/number of fire-killed trees;
- Forested acres with high cultural value receive lower priority for protection than human infrastructure; and
- Local interests and knowledge are often disregarded by non-local Incident Management personnel.

Recommendation

Evaluate fire management tactics by interagency Incident Management teams and improve mechanisms for inserting the cost-plus-loss of various tactics to Indian Country.

- Allow for input that dictates when and how back-burning might dually support suppression efforts and tribal goals without high levels of timber loss, and how cultural resources can be protected or even enhanced through collaboration on fire management.
- Train tribal staff to ensure they can serve in leadership positions within the Incident Management Teams once the delegation of authority has been passed off.
- Provide special training for personnel assigned as IMT leaders on tribal land to ensure consideration of tribal values and input when implementing wildfire suppression strategies.

B7

Finding

Tribes are developing new approaches for increasing future resistance and resilience to stresses such as climate change and wildfire.

- Tribes are emphasizing the shift to climate and fire-resistant species, resilient stand structures, and lowering of hazardous fuel levels.
- Tribes are using current approaches to the identification of ideal fuel reduction projects that will protect acres beyond the original treatment. For example, tribes have identified that survival of western larch and ponderosa pine has been higher than Douglas-fir and true fir species following wildfires in the West, leading to changes in timber management prescriptions.

Recommendation

Continue the proactive identification of sustainable forest structures and species mixes in anticipation of climate change and associated future biotic and abiotic stressors.

- Collaborate with other federal agencies, universities, and other research groups to better identify management techniques that will lead to successful, resilient forests. For example, in higher elevation western forests, evaluate increasing the proportion of western larch in planting mixes and harvest operations.
- Work with forestry professionals to identify seed sources that will best fit with changing climate zones.
- Ensure tribes have a voice at the table of all federal climate change and wildfire management programs.

Task B Findings and Recommendations

<p>B8</p>	<p>Finding</p> <p>Woodlands are increasingly being treated for through various forest management activities; however, those goals are not well articulated, and funding is often done outside the BIA.</p> <ul style="list-style-type: none"> ■ Treatments such as hazardous fuels reduction, range/forage improvement, fuelwood gathering, food security, and carbon sequestration are not being well coordinated into forest management activities. This can lead to inefficiencies in program implementation. ■ Funding for the woodland management program is not sustaining the needs of tribal woodland needs. 	<p>Recommendation</p> <p>Strengthen BIA guidance for woodland planning and management and integration into the FMP.</p> <ul style="list-style-type: none"> ■ Integrate woodland management and fire management plans into the forest management plan to ensure all treatments are incorporated into projects (see Task F). ■ Ensure funding for woodland management is adequate to maintain the stewardship of tribal woodlands (see Task A).
<p>B9</p>	<p>Finding</p> <p>Lack of forest insect, disease, and invasive plant positions in tribal and BIA programs does not allow for fully engaging in addressing these threats.</p> <ul style="list-style-type: none"> ■ The 2019 BIA Funding and Position Analysis identified at least five additional forest health protection positions needed within Indian Forestry. ■ There is not a clear point of contact within the BIA national office to manage forest health protection issues. 	<p>Recommendation</p> <p>Increase BIA and tribal staffing and training to recognize, respond, propose, and execute forest pest projects.</p> <ul style="list-style-type: none"> ■ Identify a program that will best suit the tribal forest health protection needs. One alternative is to have the BIA combine fire and forest health under one department of forest protection with year-round permanent positions (analogous to combined structural fire departments and EMS services). ■ Begin filling the positions identified at Regional and local levels to better manage the forest health protection programs. The NPS is a good model with their own dedicated forest health protection program. ■ Provide technical assistance for small tribal programs that may not have the capacity to develop projects.
<p>B10</p>	<p>Finding</p> <p>The US Forest Service insect and disease suppression funding process is complex, and it is important for tribes to learn of this and other federal funding opportunities in a timely way.</p> <ul style="list-style-type: none"> ■ All FHP funding processes are complex and needs to be better understood by tribal program managers. ■ Tribes need to better understand the opportunities available through the FHP program. 	<p>Recommendation</p> <p>Assure that tribes and the BIA are fully integrated into FHP program.</p> <ul style="list-style-type: none"> ■ Ensure that all USFS-FHP call letters are received by tribal programs in a timely fashion. ■ Develop better communications between tribes and forest health specialists in their region. ■ Develop better processes and procedures for requesting USFS assistance on biological assessments. ■ Assist tribes in submitting applications for USFS-FHP funds as early as possible.

TASK
C

An evaluation of staffing patterns of forestry organizations of the Bureau of Indian Affairs and of Indian tribes

An assessment of the adequacy of staffing, both tribal and BIA, needed to manage tribal forest lands is a core component of the IFMAT process and has been central to all previous IFMAT assessments. The number of staff, professional and technical, as well as the ability of tribes and the Bureau to recruit, retain and train individuals have all been key metrics, as well as a staffing comparison with federal, state and private forestry organizations. Overall staffing patterns have continued to trend downward for the third consecutive decade, and many of the barriers to recruitment, retention and access to training continue.

Workforce Demographics

On the whole, despite the decline in numbers, both tribal and BIA workforce demographic trends have not changed significantly since IFMAT III, based on an IFMAT workforce survey answered by 121 respondents. The average employee age was 47 in IFMAT IV, as opposed to 49 based on the IFMAT III survey (145 responses). The one notable trend is the increase in number of employees under the age of 30 from less than 2% in



A recently thinned sugar maple stand at the Grand Portage Reservation in Minnesota was converted into a teaching/demonstration sugar bush for youth education. PHOTO CREDIT: ADRIAN LEIGHTON

2012 to 11% in the 2019 survey. The fact that only 1.5% of the workforce was under 30 in 2012 was a matter of great concern,

especially compared to a 2007 survey of USDA permanent employees which revealed 10.2% of that workforce was under 30. While the increase in younger employees is heartening, the survey also shows a decline in relative portion of the workforce in their 30s and 40s.

The percentage of the workforce that is Native has remained at 48%, unchanged since the last assessment. The percentage of

Table C.1. BIA & Tribal Forestry and Fire Employee Age Distributions, 2019 and 2012

Age	IFMAT IV	IFMAT III
>50	51%	51%
41-49	17%	23.5%
31-40	21%	24%
<30	11%	1.5%

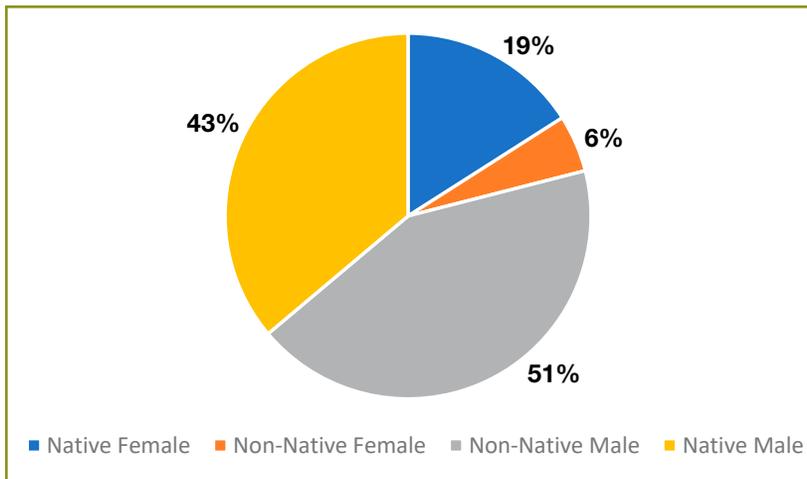


Figure C.1. BIA and Tribal workforce by gender and ethnicity as reflected in 2019 workforce survey.

women in the workforce has increased from 15% to 21%.

An interesting result of the survey is that 76% of the female forestry workforce was Native, compared to only 46% for males.

Staffing

As in past IFMAT assessments, staffing (professional, technical, support, and seasonal/temporary) was determined using the Funding and Position Analysis (F&PA) survey administered to all tribes and BIA agencies and offices by BIA Forest Inventory and Planning (FIP, formerly the Bureau of Forest Resource Planning). Generally, the F&PA is requested every 5, or more recently, 10 years. IFMAT III was based on 2011 data. IFMAT IV made the decision to use 2019 as the base year for staffing evaluation instead of 2021 due to the potential short-term impact that COVID-19 had on staffing

and other productivity metrics during those years.

Overall staffing (including foresters, forest technicians, support, and temporary/seasonal staff) has continued to decline for the third consecutive decade, despite the fact that the number of trust acres and the complexity of management has increased, as well as more opportunities for tribal involvement in the management of adjacent federal lands.

To put this decline in perspective, this is a 19% decrease since 1991 and a 26% decline since the staffing high of 2001. The overall BIA/tribal forestry workforce shrank 21% between 2001 and 2011. The Government Accountability Office (GAO) (2011) reported that while there was a 5% increase in DOI workforce between 1999-2010, there was a 9.55% decline for the entire BIA in FTE, which is still

only half of the decline within forestry. The USFS saw a similar pattern, with a 19% decrease in overall workforce between 1995-2017, and a loss of 24% of FTE in the National Forest System (Westphal et al, 2022). However, the Forest Service has begun to rebuild their forestry staff with over 800 positions in silviculture, timber sales, and forest management advertised in 2022 alone. This sudden increase in hiring by the USFS is likely to further compound existing recruitment and retention issues within the BIA and tribes.

Of particular concern, the total number of professional foresters has declined for the first time since IFMAT began, returning to levels similar to 1991. While the number of professional foresters in the BIA has been decreasing slowly since 1991, in the last 8 years, there has been a precipitous drop, declining 33%. To some degree, the slow decrease in federal foresters has historically been offset by an increase in tribal foresters, as more tribes compact or contract forestry programs. Despite an increase in

Table C.2. Change in number of all BIA and Tribal forestry staff over time

Staff	1991	2001	2011	2019
BIA	1492	1206	734	438
Tribal	775	1277	1239	1399
Total	2254	2494	1906	1837



Sign inside the Mississippi Band of Choctaw tribal building showing the way to offices of non-tribal partners.

PHOTO CREDIT: ADRIAN LEIGHTON



Discussion of silviculture prescriptions at the Grand Ronde site visit in Oregon. PHOTO CREDIT: VINCENT CORRAO

tribal staff in each decade since the 1993 IFMAT assessment, in the 8 years since the last F&PA data call, there has been an 11% reduction in tribal forestry staff, the first decline recorded by IFMAT. A 2023 workforce data call also revealed that there were only 94 professional foresters (OPM 460 series qualified) on the BIA staff, of which 20 were at the GS 9 or lower pay scale. Overall, there is one forestry professional per 40,000 acres of trust land, an increase of 10,000 acres per professional since IFMAT III. When overall forestry staffing is compared (Figure C.2) it can be seen that tribes/BIA staff manage twice the acreage of their National Forest system counterparts and over 6 times that of the BLM.

The relative proportion of fire to total forestry and fire staff jumped in 2001 from 27% in 1991 to 51% in 2001. In 2011, 41% of all BIA and tribal forestry and fire staff were performing fire and fuels related jobs, and this has

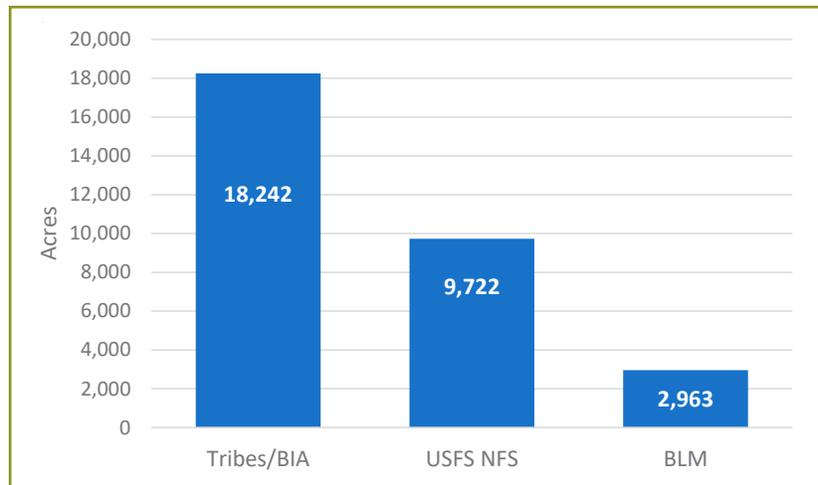


Figure C.2. Comparison of number of acres per forestry staff (2019).

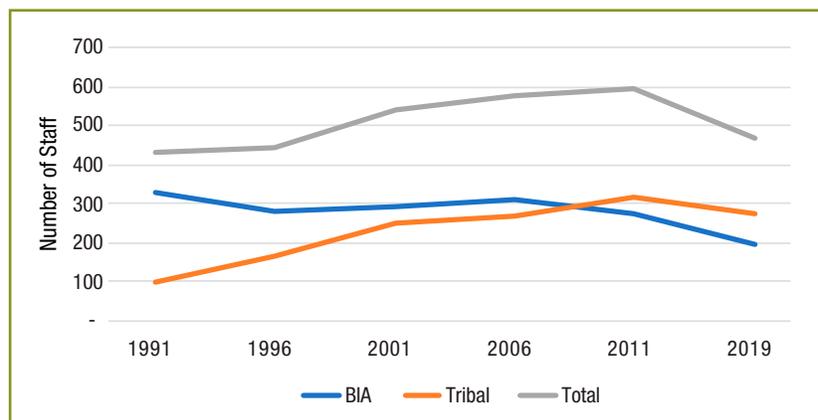


Figure C.3. Change in number of BIA and Tribal professional forestry and fire employees over time.

increased to a new high of 56%. This would be an encouraging sign if overall staffing was increasing but seems to instead reflect a shift aligning with available funding and to some degree, crisis management.

Staffing shortage and need

The Funding and Position Analysis tracks not only current staff, but needed staff as well

in a variety of forestry and fire positions. Respondents are able to list the FTE they feel are needed in a variety of position types (professional, technician, etc.) across discipline areas, such as timber sales, research, forest health, and others.

A total need of 2,057 additional staff were identified, an increase of 120% over current staffing levels. Ten years ago, the additional need was only 72%.

As in past IFMAT assessments, forest planning, forest product sales, forest protection, and multi-use management had the highest need for professionals. These four disciplines combined equaled 71% of the additional professional needs identified in 2019, with forest planning alone comprising about 22% of the overall requested increase. Forest protection, which includes fuels and fire, had by far the

Table C.3. Identified staffing needs for both BIA and Tribal forestry and fire.

	Category	1991	1996	2001	2006	2011	2019
Forestry	Professional	223	286	315	412	373	294
	Support	64	52	80	63	56	56
	Technical	284	223	254	245	329	210
	Temporary	N/A	104	292	49	159	440
	All	571	666	940	769	917	1,000
Fire	Professional	–	–	46	49	59	59
	Support	–	–	24	16	38	18
	Technical	–	–	102	117	157	126
	Temporary	–	–	57	114	208	854
	All	–	–	229	297	462	1,057
Total	Professional	223	286	362	461	431	352
	Support	64	52	104	80	94	74
	Technical	284	223	356	362	486	336
	Temporary	N/A	104	348	163	367	1,294
	All	571	666	1,170	1,066	1,379	2,057

Table C.4. 2019 staffing needs by category and discipline area.

Discipline	Professional	Support	Technical	Temp/ seasonal	Total
Admin support	6	25	1	0	32
Forest development	35	4	51	177	265
Forest education	5	2	6	18	31
Forest planning	79	4	54	5	142
Forest product sales	65	3	62	6	135
Forest protection (including fire)	63	19	127	854	1,062
Forest research	1	0	1	2	4
Multi-use management	43	6	21	156	225
Other	5	1	1	0	7
Program administration	37	11	5	3	55
Roads	12	2	9	9	31
Technical assistance	3	0	0	65	68
Total	352	74	336	1,294	2,057

biggest identified need for both technicians and seasonal workers.

Lack of adequate recurring funding (see Task A) at both the Bureau and tribal level is the single largest cause of staffing shortages. The inadequacy of programmatic funds frequently leads tribal programs to enter an increasingly complex process of grant writing to other federal agencies, non-profit organizations, and foundations. This often results in the extensive investment of staff time in finding, applying for, managing, and reporting on grants. In a significant number of field visits, tribal foresters and other natural resource managers reported that activities connected to grant funding consumed 50-70% of an FTE. Reliance on grant funding, which is temporary by nature, also increases the difficulty of hiring permanent staff.

One recent and innovative solution to the lack of tribal capacity in certain key skill areas is the creation of the BIA Timber Team. This team, located out of Billings, MT has been in place since 2019 and has helped multiple tribes and agencies by providing short term assistance in executing projects such as laying out green and salvage timber sales, and assisting with issues such as trespass, CFI, and stand exams. Such a model provides targeted assistance to tribes with smaller holdings that may not have the funding, even under ideal circumstances, to retain a large staff with specialized capabilities, and also to larger tribes that may have a sudden increased short-term need, as is often seen with salvage layout after major fire or wind events.

Workforce Planning and Organizational Efficiency

In 2010 the GAO found that the BIA, like most other Bureaus in the Department of the Interior, failed to link workforce planning with strategic plans, desired outcomes, or budgets (United States GAO, 2010). The lack of integrated planning and absence of a workforce gap analysis continues to be an issue. Recently, the BIA Deputy Director for Trust Services began a strategic workforce planning process. However, this was an internal

process to the BIA that did not include consideration of tribal staffing needs. The workforce planning process itself is still being formulated several years after initiation.

In 2018, the Intertribal Timber Council launched its own, independent four-year strategic workforce plan (ITC, 2018). In this plan, ITC identified the need for funding to onboard their own workforce development coordinator and also recommended that the BIA should “work with tribes to develop a strategic plan to recruit,



Seedling processing at the Hoopa Valley Tribe, California.

PHOTO CREDIT: VINCENT CORRAO

train, and retain tribal forestry professionals and technicians”.

Recruitment, Hiring, Retention, and Training

At the federal level, inadequate staffing, unnecessarily bureaucratic processes, and an indirect chain of command has led to an inefficient process that can lead to months if not years before BIA positions are advertised, certified, and filled. As in previous assessments, IFMAT IV has repeatedly heard stories of it taking 9-12 months or longer to fill a vacant, funded position.

Almost all instances of efficient HR processes that the team heard of occurred when Regional or Agency staff contracted the work with other DOI Agency HR teams at a local/onsite level. A realignment of human resources personnel to work more directly within the Office of Trust Services has the potential to assist with not only planning but increased efficiency in the creation of position descriptions, advertisement, hiring, and onboarding. A shortage of staff throughout the agency has recently led to a situation where many individuals have had to

step in to vacant positions in an “acting” capacity, often while trying to continue to perform core duties of their regular job. While these individuals gain valuable experience in their temporary positions, it can also lead to inefficiencies. There are also key bottlenecks within the Bureau beyond forestry that have profound impacts. A lack of budgeting and contracting officials and other associated staff greatly reduces the ability of the Bureau to move 638 contract funds to tribes. Not only does this cause long delays in moving funds, but also limits the ability of tribes to benefit from Congressional appropriations that can be used for fire prevention, fuels, and restoration work. For example, after the Infrastructure Law was passed, one high-level BIA official said that a minimum of 70 new contracting officers would be needed to be able to efficiently move the funds made available by this act to the tribes.

As reported in previous IFMAT assessments, tribes continue to struggle with recruitment and retention. The number of Native Americans in bachelor’s degree programs in forestry remains largely unchanged in the last decade, averaging around 100 a year enrolled in 4-year programs nationwide. This has led to a shortage of qualified Native American candidates. For non-tribal members, there are additional challenges such as remote locations, lack of housing nearby, and often lower salaries compared to state or federal positions. In cases where a tribe has performed a salary comparison study and has the funding to offer similar salaries, they have been able to compete more efficiently for employees.



A discussion in the field with the Spokane Tribe of Indians in Washington state during the IFMAT IV site visit. PHOTO CREDIT: VINCENT CORRAO

Although there is a wide variation, from what information IFMAT could obtain, tribes tend to pay on average about 15% less than the BIA. There is a general belief among BIA foresters, confirmed by anecdotal evidence heard by the team, that they are a GS level below their Forest Service counterparts, creating about a 10% discrepancy between the agencies.

Indian preference hiring, which has led to the increased participation of Native Americans in the natural resource workforce, has at times been applied by both the BIA and tribes in ways that do not fully allow for the consideration of non-native applicants in situations where there are no qualified Native applicants. In such cases, the search is scrapped and the position goes unfilled. There are also cases where BIA hiring officials, after a scrapped search, have to re-advertise and request special permission to view non-Native applicants when there are no qualified Native applicants.

There also seems to be a still small but increased occurrence over the last ten years of tribes

opting to not follow federal OPM 460 standards in order to hire tribal members into forestry professional positions without the requisite education. Tribes are in no way mandated to follow these federal standards and it has the effect of increasing the pool of potential tribal member applicants. However, this results in foresters who are educated and trained in other natural resource fields but not in specific forestry disciplines and may not have received in-depth education in areas like silviculture, forest inventory and planning, forest health, and other key topics. Of special concern is the potential for these foresters to not be able to attend the National Advanced Silviculture Program (NASP), due to a lack of “prerequisite” education. This has already occurred in several cases and is likely to become more common. NASP is among the most valuable reoccurring forestry specific training that BIA and tribal forestry staff can attend and any barriers to tribal foresters’ access to this is detrimental.

Training is an important component of professional

development and retention. IFMAT III found that the BIA invested approximately 33% of what the USFS spent on personnel training. Although specific numbers were hard to find for IFMAT IV, it is clearly apparent that this lack of investment continues to be a major issue. Lack of capacity, making it hard to spare personnel for multi-day training, combined with a shortage of funding for travel and associated training costs, were frequently cited as challenges. In the last decade, the BIA has developed and offered some trainings, but these tend to be focused on compliance with BIA regulations and handbooks, and not on tribally identified priorities. The IFMAT IV workforce survey asked respondents to identify areas that they would like to receive training in. Leadership and people management skills were at the top of the list, followed by GIS, tribal and federal authorities and governance, inventory and cruising software and modeling, and silviculture. These priorities are similar to those reflected in the IFMAT III workforce survey.

“I’ve worked for several tribal forestry programs. None of them have been adequately funded or staffed.”

—IFMAT IV focus group participant

Task C Findings and Recommendations

C1	Finding <p>The portion of the BIA forestry budget allocated to TPA has remained relatively static, compared to budget increases that are used to fund annual, mostly competitive projects. The result of this is that neither the BIA nor tribes have adequate funds to pay for staffing.</p> <ul style="list-style-type: none">■ This problem is especially acute for tribes that compacted or contracted programs several decades ago.■ In multiple visits the team was told that the annual funding from the Bureau has not increased in 20 or more years and is no longer a sufficient amount to pay salaries it was originally designed to.	Recommendation <p>Increased funding for the BIA and tribes is essential but must also occur in a form that allows for direct investment in staffing at both levels.</p> <ul style="list-style-type: none">■ Rather than funnel budget increases into project funds, there needs to be sufficient TPA funds to fulfill the NIFRMA mandate that each tribe receive an adequate amount to support an appropriate number of forestry staff.■ Funding agreements for compact and contract services should explicitly include budget for staffing and should compensate tribal staff at a GS level equivalent to what a federal worker would be paid. This will create equal pay for equal work, allowing tribes to become more competitive in a workforce beset with scarcity.
C2	Finding <p>Although many (but not all) tribes receive adequate project funding to accomplish tasks such as reforestation and fuels management, the annual nature and related uncertainty of these funds makes it impossible to bring on permanent staff.</p> <ul style="list-style-type: none">■ In many cases, both at the BIA Regional and tribal level, the team heard that future increases in project funding would have diminishing returns because of a shortage of staff to perform the work.■ This is especially true for work that is funded through competitive federal grants where there are insufficient staff to apply for, implement, and administratively manage the awards.	Recommendation <p>In recent years, the BIA has begun to give multi-year project money in order to allow tribes some security needed to be able to invest in staff positions. To the degree possible, this trend should continue and be expanded so that permanent staff can be hired to address management needs.</p>

“I only got a \$2 raise from 1996 to 2022 but I am here to serve my tribe.”

—IFMAT IV focus group participant

Task C Findings and Recommendations

C3	Finding <p>The Bureau of Indian Affairs has begun the process of strategic workforce planning, but over a year into this process, there has been little communication, consultation, or involvement of the tribes in this process. Meanwhile the Intertribal Timber Council's strategic workforce plan, which was developed in 2018 has languished due to lack of staff/capacity and funding.</p>	Recommendation <p>Increased funding must be tied to a strategic workforce plan at the BIA that ensures that central office and regions have adequate staff to provide technical as well as direct trust services.</p> <p>Perform, in consultation and cooperation with tribes and tribal organizations, a comprehensive workforce development plan that integrates tribal and federal needs and explores ways to make interaction between entities and staff more efficient and mutually supportable.</p> <ul style="list-style-type: none">■ This strategic plan should also acknowledge and find ways to support tribal and intertribal strategic plans, including the ITC strategic workforce plan. <p>BIA Pathways personnel should recognize the unique nature of the NIFRMA mandated program.</p> <ul style="list-style-type: none">■ This program is multi-year and includes tuition assistance.■ Attempts should not be made to blend or “streamline” this program into a wider effort by Trust Resources to recruit across multiple disciplines.■ BIA personnel should also enhance efforts to work with tribes, intertribal organizations, and tribal colleges to support these students and this program in the most collaborative way possible.
C4	Finding <p>Indian and tribal preference hiring policies have led to an increase in Native foresters working for tribes and the BIA but can have unintended consequences.</p>	Recommendation <p>The BIA should treat Indian preference as just that, and consider non-Native candidates whenever there is no qualified Native applicant on the first search without special considerations in order to ensure that tribes receive the needed services.</p> <p>The BIA should provide specific, “capacity building” training for tribal foresters and technicians who do not have a strong background in forestry specific education. Such training could take the form of a “boot camp” that would prepare such foresters to be successful and would qualify them for entry into key programs such as NASP.</p>

Task C Findings and Recommendations

C5	Finding Tribes are not receiving access to a broad scope of trainings that would most benefit staff. <ul style="list-style-type: none">■ BIA training tends to be technical and compliance oriented (TAAMS, handbooks, etc.).	Recommendation Bureau needs to expand trainings that incorporate the needs of the tribes and builds skills and capacity for tribal workforce. <ul style="list-style-type: none">■ A training needs survey or other input mechanism should be created and disseminated to BIA and tribal workforce by the BIA and/or ITC.■ Based on this input, needed trainings should be developed and offered and opportunities to utilize existing training programs offered by other agencies identified.
C6	Finding The timber strike team model created by the BIA and located in Billings, MT shows promise and could be expanded, not only for timber sales but for BAER.	Recommendation Expand the “strike team” model to create small, experienced teams that can assist tribes in technical areas of need. <ul style="list-style-type: none">■ Technical areas of need include BAER, NEPA, geospatial analysis, forest inventory, hydrology, roads and carbon accounting and verification.

TASK**D**

An evaluation of procedures employed in timber sale administration, including preparation, field supervision, and accountability for proceeds

IFMAT I, II and III reviewed findings from the six elements that had been identified for tribes to obtain the full benefits from timber harvested from their forests. The six elements pertain to timber sale preparation, marking, bidding, size of sale, utilization, and scaling. IFMAT IV found that many of the six elements have improved but that more focus is needed on business management and the relationship between the BIA and Tribal Forestry programs. Improvements were also identified in the

relationships between the Natural Resource Departments and with Tribal Councils and Enterprises.

Key regulations that slow down timber sale preparation include conducting environmental reviews to satisfy NEPA and Section 7 Consultation to satisfy the ESA. These documents were considered by most tribes as being extremely time-consuming and caused many delays. These activities are considered unfunded mandates for the tribes. The BIA interpretations of

the rules can be a constraint in getting documents approved. The BIA needs to make the approval process more streamlined and in accordance with the principles of self-governance tribes. IFMAT discussed with each interviewed tribe their interest in ITARA and how this Act could help streamline these processes and improve self-determination and management of their forest.

New Significant Impacts

In addition to the six elements identified in previous IFMAT reports, the team identified two additional significant impacts to the timber sale programs on reservations. These are the lack of staffing and emergency response capacity to address the impacts of wildfire and other disturbances in the forest. IFMAT found throughout this assessment that staffing and the availability of trained resource professionals is limited on most reservations. On staffing IFMAT also found that the tribes' compensation and benefit packages are not competitive and limit hiring and retention (see Task C). The second area identified is that many tribes do not have the capacity to handle the impacts of wildfire and are under emergency management, particularly in the western U.S. IFMAT also found in many regions a lack of processing infrastructure with no access to pulp or residuals markets resulting in poor prices and, in some areas, no market for any products.



Log decks on a timber sale administered by the Leech Lake Band of Ojibwe in Minnesota. PHOTO CREDIT: ADRIAN LEIGHTON

Environmental Reviews

Tribal timber sale procedures are influenced by the tribe in several different ways. Some tribes stay with the BIA layout and regulations while others that have a forest products enterprise engage in marketing the products and implementing the timber sale harvest. The environmental assessment and working through the interdisciplinary (ID) team is the most time-consuming activity in the timber sale layout process. Some streamlining has occurred on reservations that have conducted a programmatic EA for the entire reservation. The BIA, in most cases, still requires an environmental assessment for an individual timber harvest area. The archaeological surveys can also be very time-consuming and costly and require a BIA signature which can take many months to acquire. Streamlining the timber sale process has been done with tribes using an enterprise business where the enterprise pays the stumpage to the tribe and handles all harvest activities. Tribes that continue to use direct services are required to layout timber sales under the BIA process which requires an EA, cultural surveys, appraisal, Forest Officers Report, and BIA superintendent's signatures. Increasing the timber sale permit amount would assist in expediting management on reservation lands (H8). Under the ITARA demonstration project, tribes establish their own rules and operate under Section 9 of ESA (see Self-governance).

The ID team process that evaluates timber sale layout encompasses forestry, wildlife, fisheries, cultural, hydrology, and range programs and provides the opportunity for input by

all the resources. This process varies in its effectiveness where some tribes work through it in a satisfactory manner while others are contentious and difficult.

Tribal Enterprises

The relationships between natural resource departments/forestry and the tribal enterprises overall have improved since IFMAT III. Presently the management planning process is not recognizing marketing strategies or working with the enterprises in long-term planning for harvesting and road maintenance. Depending on the BIA region, most areas felt that the BIA approval process on timber sales is satisfactory but the archaeological, appraisal process, and prescribed burn plans are often delayed for many months due to a slow approval process by the BIA.

Roads

Roads were found to be in poor condition in all three earlier IFMAT reports with little resolution. Roads developed for timber management often provide access for tribal members for hunting and gathering, becoming extensions of the tribal public road network while contributing to road maintenance issues. Additionally, the impacts of the large wildfires and precipitation events have continued to deteriorate forest roads throughout the reservations.

Logging Contractor Capacity

Most regions throughout the country expressed concerns that there are not enough logging contractors to complete the work. Tribes could have the logging contractor trained to harvest

the trees, reducing the cost of marking each tree, and to utilize GIS and GPS technology for timber sale layout for harvest boundaries and implementing silvicultural prescriptions, but tribes need more access to these technologies.

Opportunities to Improve Value

Cross training of wildlife and other natural resources staff and technicians to assist in sale layout has been implemented by some tribes and the use of drones could provide additional information for monitoring and management of operations. Tribes are also using the stand inventory to identify the volumes for the sale layout and selling the logs. This practice can streamline the process without collecting pre-sale inventories as all logs are scaled.

The Indian Trust Asset Reform Act provides the best opportunity to streamline these activities and places these under tribal rules and regulations. Tribes that have entered an Indian Trust Asset Management Plan have found it very effective in streamlining the process.

Allotment Challenges

An allotment's timber sale preparation requires all BIA sale preparation requirements, and the timber sale must also be sold at a competitive bid. The competitive bid is to ensure that the allottees are receiving a reasonable market price for their timber in the region. The allotments are considered individual private ownerships and must be managed through the BIA rules, regulations, and procedures. Allotments on

reservations, due to their small size and fractionated ownership, make it difficult to manage these properties on a landscape basis in the best interest of all the resources. Many tribes are attempting to consolidate allotments by acquiring interest so that these parcels can be managed on a watershed or larger landscape basis (see Allotment section in report and in the appendix).

Stumpage Values

The revenues tribes receive from the harvest of timber are affected by different factors. Many tribal communities do not have sufficient sawmill capacity to support a viable wood products economy and in many areas, tribes do not have any outlets for forest products.

IFMAT IV as well as earlier IFMATs found that very few tribes had more than one year of commercial volume available for sale and had little to no shelf ready sales to take advantage of fluctuating market conditions. The inability to take advantage of high markets because of the lack of timber sales on the shelf has contributed to losses in revenues for tribes.

Poor forest road access and condition, low harvesting capacity due to limited harvesting contractors, harvesting costs, and the continuing loss of milling infrastructure have contributed to low stumpage values for many of the reservations across the nation.

Previous IFMAT recommendations supported an independent audit process to evaluate fair market value for forest products in each region to assist the tribes in identifying fair market values.

Table D.1. 2020 Average Stumpage Values by Region provides a comparison of tribal stumpage with values received by other operations in each region.

Region	Ave \$/MBF
Northeast Region	
Maine	\$137.00
Minnesota	\$126.00
Lake States	\$340.00
Average Tribal Stumpage Value	\$103.41
Northwest Region	
Washington Westside	\$378.00
Oregon Westside	\$394.00
Average Tribal Stumpage Value	\$457.00*
Inland West Region	
Eastern Washington	\$271.00
Idaho	\$230.00
Montana	\$150.00
Average Tribal Stumpage Value	\$157.07
SW Region	
Arizona	NA
New Mexico	NA
Average Tribal Stumpage Value	\$21.99
West Region	
California	\$429.00
Average Tribal Stumpage Value	\$319.70
Southeast Region	
North Carolina	\$180.00
Virginia	\$196.00
Average Tribal Stumpage Value	\$171.00

* Higher tribal stumpage values reflect access to the export market available to this region.

Sources:

Annual Report to Congress National Totals 1994-2021, Stumpage Values by Region, Bureau of Indian Affairs.

2020 Stumpage Prices by Maine County/Unit, Department of Agriculture, Conservation and Forestry, Maine Forest Service, Forest Policy and Management Division, Augusta Maine, <https://www.dnr.state.mn.us/forestry/timbersales/stumpage.html>.

2020 Minnesota Public Agencies Stumpage Price Review and Price Indices, Minnesota Department of Natural Resources, www.dnr.state.mn.us/forestry/timbersales/stumpage.html.

Michigan State University Extension, Michigan Forests Forever Teachers Guide.

Stumpage Value Determination Tables, State of Washington, Department of Revenue, Forest Tax Program, <https://dor.wa.gov/taxes-rates/other-taxes/forest-tax/stumpage-value-determination-tables>.

State of California, California Department of Tax and Fee Administration, Harvest Values Schedule, January 1, 2020 -December 31, 2020. www.cdfta.ca.gov/taxes-and-fees/timber-tax.htm.

State of Idaho, Department of Lands, Stumpage Prices. <https://www.idl.idaho.gov/about-forestry/endowment-forestry/>.

Stumpage Price Report, summer 2020, New York State Timber Harvest Statistics, Department of Environmental Conservation, <https://www.dec.ny.gov/lands/5259.html>.

Stumpage Price Reports/Agency of Natural Resources/Department of Forests, <https://fpr.vermont.gov/stumpage-price-reports>.

Historic North Carolina Timber Stumpage Prices, 1976-2020, NC State Extension publications, <https://content.ces.ncsu.edu/historic-north-carolina-timber-stumpage-prices-1976-2014>.

Task D Findings and Recommendations

<p>D1</p>	<p>Finding</p> <p>Tribes are finding it difficult to complete timber sales due to the lack of qualified personnel.</p>	<p>Recommendation</p> <ul style="list-style-type: none"> ■ Training, education, and mentoring programs targeted at timber sales management need to be implemented at the BIA and tribes at all levels. ■ The BIA needs to expand the capacity and availability of its National Timber Team to provide increased assistance to agencies and tribes in all aspects of timber sale preparation. ■ Funding for both BIA and tribal forestry programs needs to increase to support fully staffing of the timber sale program (see Task A).
<p>D2</p>	<p>Finding</p> <p>Modern technologies and processes are not being fully utilized by many tribes, leading to sale preparation costs being higher than necessary.</p> <ul style="list-style-type: none"> ■ Many timber sale programs continue to lay out, cruise, and mark timber sales by hand. ■ Use of GIS and GPS software is common, but not to the fullest extent. 	<p>Recommendation</p> <p>Increase the use of current technologies and processes to implement timber sales.</p> <ul style="list-style-type: none"> ■ Increase the use of virtual boundaries to delineate sale area boundaries, reducing the cost of traversing sales. Evaluate if the Forest Service and State sales preparation handbooks would be useful for guidelines. ■ Increase the use of common silvicultural practices such as Designation by Prescription and Designation by Description. Evaluate if the Forest Service and State silvicultural practices handbooks would be useful for guides on implementation. ■ Increase training for timber sale personnel in the use of these software technologies.
<p>D3</p>	<p>Finding</p> <p>Current processes for BIA environmental assessments and decision making for timber sales are causing significant delays.</p>	<p>Recommendation</p> <ul style="list-style-type: none"> ■ Current processes utilized by interdisciplinary teams to develop environmental assessments need improvements with guidelines for using independent peer reviewed data and streamlining the process with deadlines and action items addressing environmental performance. ■ Evaluate innovative tribal management programs that are in place and implemented. ■ Assist contract/compact tribes to develop their own standards. ■ Evaluate and recognize successful tribal programs where wildlife responds to timber management. ■ Expand the ITARA demonstration project.

Task D Findings and Recommendations

<p>D4</p>	<p>Finding</p> <p>Lack of additional timber sales that are “shelf ready” makes it difficult to take advantage of fluctuating market conditions.</p> <ul style="list-style-type: none"> ■ Few tribes have more than one year’s access to commercial volume available for marketing purposes reducing the opportunity to capture high market conditions. ■ Few tribes complete the sale layout of their Allowable Annual Cut volume and have annual revenues losses (see Tasks A & F). ■ Most tribes lack the funding to fully staff their timber sale preparation programs (see Task A). 	<p>Recommendation</p> <ul style="list-style-type: none"> ■ Increase capacity TPA funding to a level that allows each tribe to fully staff their timber sale program. ■ An expanded BIA National timber team (see D1) could assist in getting shelf-ready timber sales through the sale layout process. ■ Streamline the process for creating and securing BIA approval of tribal forestry enterprises.
<p>D5</p>	<p>Finding</p> <p>Many tribes do not use the BIA Timber Sale Handbooks and at the same time many do not have their own specific handbooks for guidance. The exception is the ITARA tribes which have developed guidance documents.</p> <ul style="list-style-type: none"> ■ When tribes use BIA handbooks it is for specific issues such as trespass or rights-of-way. ■ There is inconsistency between the BIA regions in understanding of the roles, policies, manuals, and handbooks at different levels of self-governance. 	<p>Recommendation</p> <p>A better understanding of the governance structure that is required for contracted and compact tribes would streamline actions taken by the tribes.</p> <ul style="list-style-type: none"> ■ BIA needs to acknowledge that tribes operating under P.L. 93-638 contracts and compacts are not required to comply with BIA policies, manuals, and handbooks (see Task G). ■ For contract and compact tribes, BIA review of timber sale documents for approval needs to be through the lens of self-governance rather than adherence to manuals and handbooks. Compact and contract tribes can develop their own program standards, policies, and procedures. ■ BIA should support workshops that will help tribes develop their own manuals and handbooks.
<p>D6</p>	<p>Finding</p> <p>TAAMS is a complicated system for timber sale accounting that requires specific training.</p> <ul style="list-style-type: none"> ■ Many tribes that use TAAMS provide information to a BIA staff person for data entry into the program. ■ The current TAAMS system does not track planting and other silvicultural activities. ■ Most tribes that use TAAMS would prefer an alternative system to TAAMS. 	<p>Recommendation</p> <ul style="list-style-type: none"> ■ TAAMS or an alternative system should be developed to track planting and other silvicultural activities. ■ For tribes who want to continue using TAAMS, the BIA should continue to provide the service for entering data into the program.

Task D Findings and Recommendations

<p>D7</p>	<p>Finding</p> <p>Tribes lack an independent process to evaluate whether they are receiving fair market value for their forest products.</p>	<p>Recommendation</p> <ul style="list-style-type: none"> ■ The BIA should identify an independent audit process to evaluate fair market value for forest products for each region. ■ Additional training and tools need to be developed for the timber sale appraisal program. ■ Review the potential of the US Forest Service regional appraisal processes and/or other data to better identify current market stumpage rates. ■ Restore BIA regional and national marketing staff or utilize independent marketing expertise to better identify products coming from timber sales.
<p>D8</p>	<p>Finding</p> <p>Some tribal forest enterprises could receive a higher value for the forest products if appraisals were improved or logs were marketed differently.</p>	<p>Recommendation</p> <ul style="list-style-type: none"> ■ The BIA should identify an independent process to evaluate tribal product values and marketing alternatives for tribes such as the ability to sell delivered logs. ■ Training opportunities should be made available to tribes and the BIA to expose them to industry standards and current marketing strategies. ■ Revise the BIA forestry regulations to provide for delivered log sales without requiring a tribal forestry enterprise. ■ The BIA should identify and work with an independent forest products marketing service to assist in developing opportunities for expanding forest products markets.
<p>D9</p>	<p>Finding</p> <p>Logging costs on tribal timber sales remain higher than typical sales within the region.</p> <ul style="list-style-type: none"> ■ Logging costs directly impact stumpage values to the tribe. ■ Bidding logging contracts could be more competitive, resulting in more profits to the tribe. ■ Many tribal loggers are at a disadvantage due to the lack of modern equipment and proper training. ■ Limiting the number of contractors to bid work can increase costs. ■ In many areas logging capacity is limited due to the low number of contractors. 	<p>Recommendation</p> <ul style="list-style-type: none"> ■ An independent assessment of harvesting costs should be available for tribes to evaluate harvest systems and product values by species, log quality, and transportation cost. ■ Explore the concepts used by the Forest Service and the states in implementing stewardship contracting and processes used in the Good Neighbor Authority to reduce treatment costs.

Task D Findings and Recommendations

D10

Finding

Tribal Councils find it difficult to fully understand the needs of the forestry programs.

- Tribal councils often must address many other issues and needs as the governing body, resulting in not being able to address forest management issues until they become urgent.
- Tribes making decisions on tribal logging are having to trade off economics and written or unwritten tribal employment policies and social programs.

Recommendation

- Provide tribal leaders with the training and support necessary to ensure forest management issues are understood and are being addressed.
- Provide forest managers with the tools and training they need to communicate the program needs with tribal leaders.
- Where it does not exist, consider outlining the roles and responsibilities of a Timber Committee or Natural Resource Sub-Committee to address forest related issues, such as creating an opportunity for economic and timber resources education.
- Following an independent assessment of harvesting costs, those results should be shared with tribal councils so they can fully understand the cost associated with decisions for tribal employment and social programs.
- Provide additional training to tribal leadership on the development and implementation of the forest management plan for a better understanding of alternatives.
- Work with tribal loggers to better understand business practices to ensure the best harvest costs are attained.

D11

Finding

Many areas within tribal communities do not have sufficient log markets to support a viable wood products economy that will support the necessary forest management treatments.

Recommendation

- The BIA/tribes should explore alternatives to bring in industry that can support the forest products available off tribal lands.
- Tribes may want to join efforts to secure industry within a local area. Developing Cooperatives and combining available timber volumes will increase economic feasibility.
- The BIA needs to reinstate a forest products marketing program to maximize tribal timber sales (D8) including thinning to not only provide volume but also to reduce stocking and improve wildfire resiliency
- BIA/tribes need to explore other revenue options such as carbon, biofuels, biomass use, water, wildlife, recreation, TFP (e.g., maple syrup), or other natural resource uses.

Task D Findings and Recommendations

<p>D12</p>	<p>Finding</p> <p>Many tribes feel that the BIA requirements are redundant, take excessive time, and do not support the tribe in their goals and objectives.</p>	<p>Recommendation</p> <ul style="list-style-type: none"> ■ Tribes and BIA need to understand the breadth of governance available through contracting and compacting and consider the benefits of an ITARA proposal. Training from the Office of Self Governance should be conducted for BIA and tribes to fully implement the intent of the Indian Self Determination Act and improve the efficiency of tribal forest management activities. Tribes and BIA also need education and funding to support the expansion of ITARA to tribes that want to use it.
<p>D13</p>	<p>Finding</p> <p>The BIA and some tribes have invested in milling infrastructure, but these mills (especially those dealing with small diameter material) have had limited success.</p> <ul style="list-style-type: none"> ■ Tribes with these small milling systems are finding difficulty in securing enough volume to make it profitable. ■ Tribes are having difficulty in selling the final manufactured products. ■ Economics provided by tribal employment from tribally operated small log mills are often undervalued. 	<p>Recommendation</p> <p>Improve the operating climate for tribally owned small log mills.</p> <ul style="list-style-type: none"> ■ Make funding available for evaluating alternative processing options that can successfully utilize the products coming from the new mills. ■ Review national policy on providing tribes with funding and technical assistance and its effect on the tribes' ability to develop a forest products infrastructure. ■ Consider an ecosystem services perspective that creates subsidies or provides offsets for improving water yield for adjacent urban communities, tap into markets for biomass, portable sawmills, marketing, and branding opportunities that are unique to tribal enterprises.
<p>D14</p>	<p>Finding</p> <p>Although NIFRMA and BIA regulations allow for direct deposits of timber revenue into local tribal bank accounts, some tribes are having difficulty establishing a Direct Pay agreement with the BIA.</p> <ul style="list-style-type: none"> ■ Many tribes prefer to deposit timber revenue and FMDs directly into tribal local bank accounts rather than trust accounts using the BIA lock-box process. ■ There is a lack of clear guidance from the BIA regarding procedures for Direct Pay Agreements. 	<p>Recommendation</p> <p>The BIA needs to issue uniform guidance for preparation and approval of Direct Pay Agreements.</p>

TASK
E

An analysis of the potential for reducing or eliminating relevant administrative procedures, rules, and policies of the Bureau of Indian Affairs consistent with the Federal trust responsibility

Increased Tribal Self-Governance

Since NIFRMA is the current “tap root” of the US view of Indian forests, it should be ascertained if it might benefit from changing with the times. Any such review should be carried out carefully after extensive tribal input.

The lack of recurring funding for tribes that acquire new trust forest lands needs to be addressed. BIA regulations and procedures also need to better identify and meet budget needs for all self-governance tribes. (n.b. IFMAT should visit with relevant administration and congressional officials to hear their views on Indian forestry funding issues and rules and to inform them about IFMAT. In particular it should be asked why underfunding is continual over all IFMATs. The NIFRMA “should fund” clause could be used in the discussion.)

The 2019 GAO Report stated that, as of FY 2016, 47 percent (267) of the nation’s federally recognized tribes have entered into self-governance compacts. In checking OSG’s current list of self-governance compact tribes, 57 percent (31) of the ITC member tribes are self-governance through compacting. This represents a majority of the timber owning tribes belonging to ITC. Some tribes also perform forestry functions under P.L. 93-638 contracts. So, the total number and percent of tribes carrying out forestry operations under P.L. 93-638 self



The IFMAT team having a discussion with Quinault tribal forestry staff and allottees on recent harvest and reforestation efforts in western Washington. PHOTO CREDIT: VINCENT CORRAO

-determination arrangements would be higher than just the numbers for compacts. This IFMAT review collected forestry program information from 41 tribes nationwide. This involved both on-site visits and virtual meetings. A determination of the governance structure for forestry program operations revealed that 77% of the reservation forestry programs visited are being performed directly by tribes. For a few tribes (5%), a hybrid governance structure involving

a combination of tribal and BIA operations occurs and only 18% remain BIA direct operations. Two tribes are carrying out forest management activities under approved ITAMP’s. Thus, the relationship between BIA rules and regulations and tribal forestry actions is changed for half or more of the timber tribes.

There should be an independent commission or trust, to oversee tribal and secretarial responsibility (see IFMAT I).

This is perhaps more important now than 30 years ago when it was a recommendation of IFMAT I, as more tribes move to self-governance and ITARA. BIA regulations should reflect that when inherent federal functions move to tribes BIA money withheld for performing those inherent federal functions should go to tribes. Some regulations are no longer appropriate in the face of ITARA and should be reviewed and modernized. Indeed, reviewing the entire structure and function of BIA forestry rules and regulations (relevancy of manuals and handbooks) in light of enhanced self-governance is an urgent task. It would be helpful to review the recommendations of IFMAT I in this regard.

Unfunded Mandates

Unfunded mandates, such as requirements for complying with federal laws and requirements for consultation are often a burden on tribal forestry budgets. Increased efforts to secure more funding to comply with these mandates is a logical approach. It would be helpful to have specific data concerning costs and impacts on programs in meeting these mandates, to support requests for additional funds perhaps from inclusion in the Funding and Position Analysis questionnaire.

Rules Relating to Allowable Annual Cut (AAC) and Other Forestry Activities

IFMAT feels that broader stewardship and cultural issues are not necessarily reflected in the achievement (or not) of an a

priori statement of AAC. IFMAT also notes that non-declining even flow, as viewed by BIA, can be antithetical to some tribal forestry goals, particularly in situations such as fuel hazard reduction harvests that “count” as AAC without producing positive revenue.

Trust Asset and Accounting Management System (TAAMS)

Because TAAMS is not a federal regulation, the use of TAAMS by self-governance tribes for forest management accounting and record keeping may be optional under current rules. Presently, BIA requires the use of TAAMS when tribes enter into Direct Pay Agreements for timber receipts and Forest Management Deductions. By signing those agreements, tribes are agreeing to use TAAMS for forestry accounting and record keeping. This sometimes leads to delay and confusion regarding timber receipts, so review is warranted.

Trust Evaluations

Clarification is needed concerning which part of the Interior Department organization is responsible for performing self-governance compact and ITARA trust evaluations.

Compact trust evaluations are conducted by the Bureau of Trust Funds Administration, Division of Trust Evaluation and Review. There is a separate trust evaluation process required for ITARA tribes set forth in each ITAMP. The official

responsible for directing the ITARA trust evaluation process is a representative of the office of the Assistant Secretary - Indian Affairs (ASIA) or the BIA Central Office.

ITARA provides for modernization of the DOI/BIA administration of the trust responsibility and a means for resolving troublesome interactions with BIA in carrying out forest management activities. The BIA Central Office has not provided the Regional Directors with policy or procedural guidance concerning implementation of the ITARA Demonstration Project. The lack of guidance has resulted in confusion regarding the Regions' continued relationship with tribes operating under approved ITAMPs. More significant, it has provided opportunity for actions adverse to tribes by BIA Regional staff who do not fully embrace self-governance and the carrying out forestry activities under tribal authority and control.

Congressional Declaration of Policy for tribal self-governance explicitly states that the intent of the Act is: “to permit the orderly transition from federal domination of programs and services to provide Indian tribes with meaningful authority to plan, conduct, redesign, and administer programs, services, functions, and activities that meet the needs of the individual tribal communities.” In many cases, however, through the various approval processes the BIA micromanages the decisions, administration, and management of tribal forestry programs.

Task E Findings and Recommendations

<p>E1</p>	<p>Finding</p> <p>Although NIFRMA is one of the most recently legislated major federal forest policies and the ultimate basis of BIA Forestry rules and regulations, it is over 30 years old and should be reviewed for relevance for current conditions.</p>	<p>Recommendation</p> <ul style="list-style-type: none"> ■ IFMAT IV recommends a review of the current applicability of NIFRMA, given the recent shift toward self-governance by many tribes, to transmit to ITC and Congress. ITC would be in a good position to carry out prior public comment on the need and feasibility for such a review.
<p>E2</p>	<p>Finding</p> <p>NIFRMA requires recurring funding, but it seems to not always be done.</p>	<p>Recommendation</p> <ul style="list-style-type: none"> ■ Evaluate the recurring funding formula for its effects and determine if it is still relevant or if it should be modernized, particularly in the light of increased numbers of self-governance tribes and the trend of tribes moving toward stewardship management rather than a primary focus on timber production. Review Sections 105-109 25 CFR Part 1000 relevant to annual funding agreements.
<p>E3</p>	<p>Finding</p> <p>There are special concerns/benefits for tribes and BIA in carrying out forest management activities under ITARA and self-governance generally and BIA rules and procedures have lagged the advance of self-governance.</p>	<p>Recommendation</p> <ul style="list-style-type: none"> ■ (Overlap with Task G re) the need for explicit minimum standards for forest management should be explored. New trust evaluation procedures and forms are required that are adjusted for self-governance, recognizing that self-governance tribes are not required to follow all BIA policies, manuals, and handbooks. ■ A special independent commission should conduct a balanced assessment of potential positive and negative impacts for both tribes and the BIA of increased numbers of tribes moving to self-governance. And how has this transition impacted the BIA's role for providing forestry technical services.

“We may not get the assistance we need from the federal government, but we will find a way to stay here because this is our home.”

—IFMAT IV focus group participant

Task E Findings and Recommendations

<p>E4</p>	<p>Finding</p> <p>Trust evaluations for compact tribes focus primarily on internal controls, conflict of interest, waste, fraud, and abuse. Evaluations are conducted by the Bureau of Trust Funds Administration and do not include forestry and/or natural resources professionals.</p> <ul style="list-style-type: none"> ■ In addition to the compact trust evaluations, ITARA tribes have a separate trust evaluation process set forth in their ITAMPs. 	<p>Recommendation</p> <ul style="list-style-type: none"> ■ Compact trust evaluations of tribal forest management programs need to include specific assessment of fulfillment of the trust responsibility consistent with the principles and rules of self-governance. Such evaluations need to include professionals with background in the disciplines being reviewed. ■ Trust evaluations for ITARA tribes need to be coordinated with the compact trust evaluations to eliminate redundancy, strengthen focus on trust responsibility in the context of self-governance and reduce the burden of preparing for and conducting separate evaluations.
<p>E5</p>	<p>Finding</p> <p>Unfunded mandates imposed on tribes are a source of disproportionate costs, as recognized in previous IFMATs. These costs to tribes include resulting opportunity costs when tribal funds are used for the mandates and not new opportunities.</p>	<p>Recommendation</p> <ul style="list-style-type: none"> ■ Devise ways to mitigate the negative impacts of unfunded mandates on Indian forestry programs, including dedicated project funds to cover their cost.
<p>E6</p>	<p>Finding</p> <p>There are two divergent BIA forestry functions: direct service to tribes and working with self-governance tribes. It is not clear that BIA Forestry is adequately funded and staffed to do both at the required scale, nor is it clear what the continued technical assistance role of BIA is for compact tribes.</p>	<p>Recommendation</p> <ul style="list-style-type: none"> ■ Ascertain the resources and the rules that direct resources to each (direct service and self-governance) and determine if they need to be changed to the level of funding and technical assistance obligations needed to maintain the trust responsibility for both.
<p>E7</p>	<p>Finding</p> <p>Tribes continue to question Allowable Annual Cut (AAC) achievement as a success measure, as used by BIA in the past.</p>	<p>Recommendation</p> <ul style="list-style-type: none"> ■ Review BIA rules and procedures regarding AAC, particularly non-declining even flow. Determine if there is a need for more flexibility in the implementation of BIA AAC rules. Overstocking needs to be reduced to have resilient forests in the face of increased fire risk and AAC rules should allow and encourage this. Reporting should be reviewed. ■ Acknowledge the shift from timber production and harvesting the full AAC to broader forest stewardship as a success measure.

Task E Findings and Recommendations

<p>E8</p>	<p>Finding</p> <p>Inherent federal functions are not being applied consistently across regions and tribes (GAO Report 19-87). ITARA tribes are performing actions previously performed by BIA as inherent federal functions.</p>	<p>Recommendation</p> <ul style="list-style-type: none"> ■ Inherent federal function issues raised by the GAO, BIA, and tribes at specific locations (agency, region, and national) should be addressed. The ASIA’s response to this issue described in the GAO report (Recommendation 2) needs to be implemented. Do an Internal program review in BIA forestry to insure uniform application of inherent federal functions. ■ Funding withheld by BIA for carrying out inherent federal functions should be provided to tribes performing those functions under ITARA.
<p>E9</p>	<p>Finding</p> <p>TAAMS has been implemented as BIA policy and not through the rule making process. If tribes have taken over the BIA Real Estate Services or Lands/Titles and Records functions under P.L. 638 contracts/compacts, then most likely they have agreed to use TAAMS for those functions.</p>	<p>Recommendation</p> <ul style="list-style-type: none"> ■ The requirement for self-governance tribes to use TAAMS is an issue and needs to be resolved. It can be regarded as an unfunded mandate and if so, should be fundable to tribes under the regulations.
<p>E10</p>	<p>Finding</p> <p>Rules and regulations for access fee issues, forest health and BIA fuels funding need clarification. Tribes are uncertain about their fairness and consistent application.</p>	<p>Recommendation</p> <ul style="list-style-type: none"> ■ Review rules and regulations with respect to access fee issues, forest health and BIA fuels funding. Does the region decide which funding requests go forward? Does the region get an allocation for fire funding?
<p>E11</p>	<p>Finding</p> <p>ITARA promises self-governance benefits for interested tribes. However, many tribes have little or no knowledge about ITARA and lack capacity and funding to prepare Indian Trust Asset Management Plans (ITAMP).</p>	<p>Recommendation</p> <ul style="list-style-type: none"> ■ BIA and ITC should implement strategies (webinars, newsletter articles, BIA National and Regional Foresters meetings and ITC symposium presentations) to provide information about ITARA and the Demonstration Project. ■ Grants, similar to those for participation in self-governance, should be made available to tribes to participate in the ITARA demonstration project.

Task E Findings and Recommendation

E12

Finding

The Demonstration Project established under ITARA is for a period of ten years commencing on June 16, 2016. Over two years elapsed before the Interior Department formally established the Project and provided guidance for tribal participation (October 1, 2018).

- The Demonstration Project may be extended at the discretion of the DOI Secretary.

Recommendation

- We recommend that the Secretary of the Interior extend the ITARA Demonstration Project indefinitely. The recommendation for extension should urge making the Demonstration Project permanent.
- Policy and procedural guidance concerning ITARA implementation needs to be provided to BIA Regional offices. Such guidance should be developed with input from tribes, especially those currently developing or operating under an ITAMP. Project, year-end and other special funding distributed by BIA Regional Offices need to be made available to ITARA tribes in the same manner as other tribes in the Region.
- A carefully structured review should be conducted to examine the context of the Secretary's trust responsibility under ITARA, its fulfillment and changes in performance of what previously were considered inherent federal functions.

E13

Finding

Many tribes operating under P.L. 93-638 compacts practice limited levels of self-determination compared to what is provided for in the Indian Self Determination Act (25 USC Chapter 46, Subchapter IV) and individual tribal compacts.

- There does not appear to be adequate communication between BIA and OSG. The lack of familiarity with self-governance agreements creates tension and misunderstanding between tribes and BIA.
- Tribal application of regulation through self-governance, outside the context of handbooks and manuals, is not widely accepted by BIA staff.

Recommendation

- Establish a training program that provides BIA officials and tribal leaders with better strategies of engaging with self-governance tribes through a spirit of government to government and consistent with Congressional policy rather than domination.

TASK**F**

A comparative analysis of forest management plans and their ability to meet tribal needs and priorities

Introduction

Forest management plans (FMP) are the guiding documents for all forest management activities that occur on tribal forest lands (NIFRMA 1990, P.L. 101-630). These documents provide the intent, direction, and operational information necessary to implement goals and objectives toward achieving tribal visions for their forests. Without this guidance there cannot be successful management of the forest resources. In the absence of an approved FMP, only limited management activities can occur on trust forest lands and commercial harvest is not allowed (BIA Manual 53 IAM 2.4). To support these forest

plans, there needs to be current and appropriate forest inventories that reflect the condition of the forest and the monitoring of past management activities.

This is the fourth assessment of the Forest Management and Inventory Planning (FMIP) program within the BIA and across all 345 forested tribal reservations (trust and non-trust combined). It is important

to not only assess the current condition of the forest plan, but to review the past IFMAT recommendations to see if they have been implemented and their success in sustaining the forest resources. Building on the past recommendations is the goal, to keep the focus on successful forest management planning across tribal lands, and to see the FMIP program grow as more is known.

“Our forest is a working forest even with obstacles in the way it’s still working. It provides the community with traditional and cultural benefits.”

—IFMAT IV focus group participant



Blueberry management discussion during the IFMAT IV site visit to Grand Portage, Minnesota.

PHOTO CREDIT: VINCENT CORRAO

During site visits IFMAT listened to tribal forest managers describe their planning process, the forest plan, and their efforts to manage consistently within the forest plan objectives. In general, these discussions indicate that the forest plans were prepared thoughtfully and enjoy the support of the forest managers and tribal leadership. But, the success is limited as funding and staffing issues continue to hamper full implementation of all policies and practices that have been identified in programmatic reviews.

This fourth assessment focuses on the following themes:

- Success in developing forest management plans for those tribes that did not have a plan,
- Evaluation of the 2015 policy that drops the requirement for periodic updates of forest plans,
- Interest from tribes to evaluate the forest inventory policies used in the FMIP program, and
- The management of the FMIP program's business model and practices.

There is great diversity among reservations and our recommendations are necessarily broad. There is no such thing as a one-size-fits-all forest plan, and recommendations must be taken within this broader context.

Purpose and benefit of a forest management plan

Forest management plans (FMPs) are required for all Indian forest lands in federal trust status. NIFRMA mandates that all management activities on Indian trust forest lands be consistent with an approved FMP. NIFRMA

also defines an IRMP as a document, approved by an Indian tribe and the Secretary, which provides coordination for the comprehensive management of such tribe's natural resources and provides direction for the FMP.

Ideally, an FMP is a living document that provides the forest manager with several benefits over a long period of time. Here are a few.

- **Authorize management.** An FMP specifies the objectives of forest management, identifies the tactics used to achieve those objectives, and establishes practices, schedules, standards and guidelines and contingencies for implementing decisions made in the plan.
- **Establish trust standards.** An FMP for tribal forests reflects tribal objectives and vision for the forest. For trust lands, the management objectives and the proposed management set forth the Trustee's obligation to trust beneficiaries.
- **Resolve issues.** A successful forest planning process identifies forest management issues and provides the decision makers with the information needed to find an acceptable resolution.
- **Chart a course for long-term forest management.** An FMP clearly lays out a desired future condition and the manager's expectation about how to move the forest toward that condition. Management is typically described through standards, silvicultural practices, land allocation and a schedule of management activities.
- **Set budget, staffing, and revenue expectations.** An

FMP should clearly identify the resources necessary to meet planning objectives. The plan and/or the planning analysis can also be used to evaluate both additional investment opportunities as well as the short and long-term consequences of funding or staffing shortfalls.

■ Consider impacts of proposed changes in management.

Forest managers are often faced with suggestions for changes to current forest practices and strategies. A well-designed forest planning analysis considers and evaluates such changes, offering insight about short- and long-term consequences of such proposals. Well-designed forest planning tools, furthermore, can be used to evaluate proposals that arise after the initial planning effort has concluded. Monitoring and adaptive management are key to this process and assessing if desired outcomes are being achieved.

An FMP provides a platform for addressing new concerns or issues surrounding the management of the forest. In the past decade, for example, managers' attention has been newly focused on impacts of climate change, hazardous fuels reduction, and forest carbon sequestration. As addressed below, the current plans are not being updated to address these or other rising issues.

Forest planning progress on forested reservations

FMP development has demonstrated a positive trend and culminated with the completion of FMPs on all trust

Table F.1. Progress of FMP development on forested reservations.

Performance Indicator	1991	2001	2011	2019
Percent of Category 1 & 2 Forested Reservations covered by an FMP	53%	63%	85%	100%
Percent of Category 3 & 4 Forested Reservations covered by an FMP	13%	11%	43%	100%
Number of Category 1 & 2 Forested Reservations covered by an FMP	44	64	85	101
Number of Category 3 & 4 Forested Reservations covered by FMP	6	19	86	215
Total Trust Forested Reservations	214	302	305	316

Source: Status of Forest Management Inventories and Planning database (InFoDat). 2019 (As revised).

lands in 2015, twenty-five years after the passage of NIFRMA. In 2015, furthermore, BIA policy established that FMPs would be “non-expiring” although the 53 IAM Chapter 8 provides guidance for periodic reviews, including an updated Forest Inventory Analysis (FIA). While the data reviewed from the FMIP database (InFoDat) does not totally reflect this accomplishment, IFMAT has been assured that all 316 forested trust reservations have a current FMP (Table F.1). This covers all 19.3 million acres of forest land identified as being in trust.

Status of Inventories and Management Plans

The BIA and tribes have successfully completed forest management plans (FMP) on all forested tribal lands. However, the 2019 Status of Forest Inventories indicates that the plans are not being maintained and updated to reflect changes in tribal vision, changes in environmental conditions, or to address new issues. FIP (Forest Inventory and Planning, formerly BoFRP) records indicate that eight timber and three woodland

plans have been updated since 2015 (see table F2 below). This is concerning because new issues such as climate change and carbon sequestration are being addressed. Our review, furthermore, indicate that the hazardous fuel reduction program, which involves vegetation manipulation, is not integrated into the FMP, except in those cases where the Wildfire Plan has been included in the FMP. These and many other issues are important issues to tribal forest managers and should be addressed in the forest management plans.

Table F.2 Date of current FMIP document along with the 53IAM handbook requirements for planning inventories.

Indian Forestry Program – Status of FMIP Programs									
Reservations with Timberland Component					Reservations with Woodland Component				
Year Approved	Inventory	Inventory Analysis	Forest Mgt Plan	IRMP	Year Approved	Inventory	Inventory Analysis	Forest Mgt Plan	IRMP
1970-1980	1	5	1	0	1970-1980	0	1	0	0
1981-1990	1	6	2	1	1981-1990	1	0	5	1
1991-2000	49	46	29	3	1991-2000	42	12	9	3
2001-2010	106	79	84	16	2001-2010	50	82	4	16
2011-2015	29	33	64	5	2011-2015	41	78	3	5
2016-2020	3	1	8	0	2016-2020	4	3	0	0
Total	189	170	188	25	Total	138	176	21	25
Current	123	n/a	n/a	n/a	Current	n/a	n/a	n/a	n/a
Not Done	38	57	39	202	Not Done	72	34	189	202

Current timber inventories for Category 1&2 are years 2004-2019 (53IAM, Chapter 8).
 Current woodland inventories for all program Categories are 2000-2019 (53IAM Chapter 8).
 Source: Status of FMIP 2019 (InFoDat, as revised)

Integrated Resource Management Plans

IFMAT understands that the Integrated Resource Management Plan (IRMP) initiative still exists but is not being actively pursued by the BIA or the tribes due to program delivery issues by the tribes and funding constraints by the BIA. The lack of any new or updated IRMPs since the early 2010s is directly related to these issues. The BIA data reports that 41 forested reservations have an IRMP in 2019 (Table F.3). The majority of those (88 percent) were developed for Category 1 and 2 reservations. This is an increase from 24 forests with an IRMP reported in IFMAT III.

Reliance on CFI for Management Plans

The IFMAT IV review reveals that the BIA's Continuous Forest Inventory (CFI) system is unable to answer all the planning and operational needs of modern-day forest management programs. The CFI is being pushed beyond its original intent, which is to measure forest change over time. Many issues arising on tribal forests cannot be answered either at all, or quickly enough to meet the needs of forest managers. Some issues identified during this assessment include:

- A CFI does not help the manager plan or prioritize where to conduct management activities.
- A CFI does not provide any useful information to the manager faced with managing allotments.

Table F.3. Progress of IRMP development on forested reservations. No Category 3 reservations had an IRMP.

2019 IRMP Counts by Region and Program Category				
Region	Total	Program Category		
		1	2	4
Alaska	1	0	1	0
Eastern	2	1	0	1
Eastern Oklahoma	1	0	0	1
Great Plains	3	0	3	0
Midwest	13	8	5	0
Northwest	8	6	1	1
Pacific	5	2	1	2
Rocky Mountain	4	2	2	0
Southern Plains	1	0	0	1
Southwest	2	1	1	0
Western	1	0	0	1
Grand Total	41	20	14	7

Source: Status of Forest Management Inventories and Planning database (InFoDat, as revised) 2019.

- On a 15-year remeasurement cycle, a CFI cannot help in guiding response to episodic insect and disease infestation or catastrophic fire.
- A CFI does not provide the stand-based information needed to support forest planning that focuses on developing a mix of forest conditions in a spatially functional configuration.

Many forests are implementing stand-based inventories to meet their needs for tactical and operational planning, but current FMIP policies are limiting the use of these inventories in development of the allowable annual cut during the planning process. Other tribes are asking for stand-based inventories but

are meeting roadblocks due to funding and staffing needs.

Further reliance on the historic CFI needs to be evaluated. Forest inventory needs and forest inventory techniques are evolving. The BIA and tribal inventory programs should be encouraged to use new tools as they become available to help assist in the monitoring of the resources.

IFMAT recommends that a joint BIA and tribal team of experts perform an in-depth analysis of the current and future inventory needs, not only for planning, but for operations management. The team sees the opportunity to have the CFI inventory program evolve into a trust monitoring tool while more appropriate tools are incorporated into the

“Management of timber is based off benefiting other resources.”

—IFMAT IV focus group participant

planning process. This will allow planning tools such as projection models and harvest schedules to be introduced. But the caution is that there will need to be the funding, technical support, and training necessary for successful implementation.

Listed below are some topics that need to be discussed and addressed:

- What kinds of data do current forest managers need, given the management objectives identified in the forest management plans and IRMPs?
- What inventory systems can best provide the data needed at a reasonable cost?
- Are different inventory systems desirable for different forest types?
- What latitude does the Trustee have to support different approaches across the range of beneficiaries?
- How would funding for different approaches be allocated between forests?
- What would it cost to implement new systems and how could those expenditures be justified?
- Should there be a relationship between timber inventory, timber sale inventory and real estate transaction inventories?

Underachievement of the Allowable Cut

The Allowable Annual Cut (AAC) is the maximum harvest level allowed during a planning period as per tribal management goals and objectives (BIA Manual 53 IAM 2.8.C.15). This calculated target is important for determining the intensity

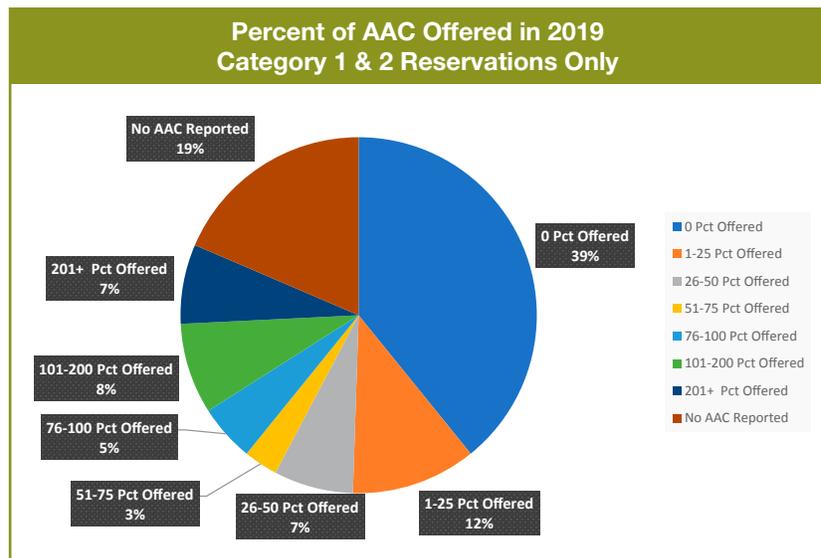


Figure F.1 Percent of AAC being offered for sale in 2019. This chart shows the number and percent of tribes that realized the percentage of their AAC being offered. For example, 18 tribes (or 19%) realized less than 25% of the AAC being offered. Some tribes offered more than their AAC in effort to catch up on past missed opportunities. Source: 2019 BIA Report on the Status of Indian Forest Lands.

of the forest management that reflects these goals along with the capacity of the forest resources to be maintained sustainably. Year-to-year deviations are expected due to markets, sale opportunities, logging capacity, and weather.

During the IFMAT IV assessment, both the data analysis and on-site interviews with tribal leaders pointed out that most tribes are not achieving their established allowable cut. The data reported for national annual targets and accomplishments since 1980 indicates that this underachievement is a regular occurrence. At the same time, the actual target level of aggregated AAC volume has dropped nationally from over 1 billion board feet in 1980 to 748 million board feet in 2019 (Table A.1).

Three major reasons there was not full implementation of the AAC:

- Funding for the timber management program was inadequate and tribes were forced to reduce their harvests due to personnel capacity issues. (See Task A and C)
- Tribal goals and objectives had changed which has led to the reduction in the amount of timber that tribes wish to put up for sale. This represents a shift from timber production to a focus on broader stewardship management.
- Local markets do not exist.

Based on data reported (FY2019 Report to Congress), less than 50% of the aggregated AAC was harvested that year. Most Category 1 and 2 tribes are not achieving their AAC (Figure F.1). Approximately 16% of the tribes offered their full AAC, while over a third of the Category 1 and 2 reservations combined did not offer any volume. On the other end of the spectrum, some tribes reported offering more volume

“Tribal cultural needs and revenue don’t need to be mutually exclusive.”

—IFMAT IV focus group participant

than the AAC, primarily due to “catch-up” on past volumes that were not sold.

Underachievement of the allowable cut is a cost to tribes in terms of potentially lost revenue. Using the methodology from Task A, the estimated direct potential loss in tribal revenue from not offering the full allowable cut during the period 2010 to 2019 was almost \$400 million (Table F.4).

A major challenge facing tribal and BIA leaders is to understand

what is causing tribes to not achieve their desired cut levels so that actions can be taken. Where tribal goals have changed, the 2015 BIA policy permitting non-expiring plans may have contributed to delayed updating of forest management plans. Where lack of markets, low prices, or long-haul distances exist, the recent Bipartisan Infrastructure Law (2021), along with revised DOI policies, may provide financial resources to offset investments in hazardous fuel reduction in green timber sales that may help tribes to close the gap between their harvest program and their allowable cut.

Table F.4. Estimated potential lost revenue by region from not offering the full allowable harvest.

Region	2010-2019 Total Value (\$millions, nominal)
Alaska	0.41
Eastern	19.69
Eastern Oklahoma	0.18
Great Plains	7.00
Midwest	91.75
Navajo	5.04
Northwest	181.68
Pacific	23.02
Rocky Mountain	4.60
Southern Plains	15.77
Southwest	10.18
Western	40.29
Total	399.61

FMIP Business Reporting Processes and Support

The business and budgeting reporting processes used by the FMIP program need to be modernized to provide clear and accurate documentation on the program at all levels. The FMIP program is complex, with many components needing to be tracked to ensure currency of the ultimate Forest Management Plan. Proper program management relies on this information to make the best decisions possible for the program implementation. Many gaps in the current reporting procedures were identified during this assessment, making it difficult to fully understand the

program status and what is being accomplished. When analyzing the status of each FMIP program component IFMAT observed programs are out of date or not even been started. For example, BIA central office data shows, based on 2019 data, that Category 1 tribes frequently wait more than 9 years beyond the scheduled CFI update, that the CFI analysis takes 3 to 9 years to complete, and that more than one-third of the FMP’s are more than 15 years old. For the Category 2 tribes, the 2019 records show that most tribes wait more than 9 years beyond the scheduled CFI update, that the CFI analysis is usually completed within 3 years, but more than 50% of the FMPs are more than 15 years old.

Although IFMAT heard from tribes on our site visits that the CFI analysis at FIP has been slow, IFMAT was unable to confirm an accurate status. In reviewing the FMPs, IFMAT found FMPs that relied on old inventories due to the delay in CFI updates and analysis.

Successful program management starts out at the top, with a strong presence at the Central Office and Regional Office levels to oversee the funding and project selection. The Forest Inventory and Planning group, FIP (formerly BoFRP), is one of the most important keys to a successful FMIP program, but they are not able to provide the assistance needed by many tribes and BIA agencies. The staffing at these offices has been reduced to a point where proper program

“The plan took longer for it to get approved than when it actually lasted [14 years to write, 10 years operational].”

—IFMAT IV focus group participant.

Table F.5. Current Inventory and Planning FTEs at FIP (BoFRP) and the Regional Offices. This does not include Tribal FMIP. Source: 2019 Funding and Position Analysis.

Region	FMIP Function				Grand Total
	GIS	Inventory	IRMP	Planning	
Alaska	0.5	0.1	0.0	0.1	0.7
Central Office	0.0	7.0	0.0	0.0	7.0
Eastern	0.0	0.0	0.0	0.3	0.2
Eastern Oklahoma	0.0	1.0	0.0	0.0	1.0
Great Plains	0.0	0.0	0.0	0.0	0.0
Midwest	1.0	1.5	0.5	0.5	3.5
Navajo	0.0	0.1	0.1	0.0	0.2
Northwest	0.2	0.4	0.1	0.3	1.0
Southern Plains	0.0	0.0	0.0	0.0	0.0
Southwest	0.9	1.5	0.0	0.9	3.3
Western	0.0	0.0	0.0	0.5	0.5
Grand Total	2.6	11.6	0.7	2.6	17.4

management is not being sustained. This was a conscious decision by BIA leadership that with the limited budget, and increasing self-governance, to pass along to the field units as much funding as possible. Even with this effort in funding the field, many tribes are left with little or no full-time staffing in the FMIP program. With FMIP Central and Regional staffing levels (Table F.5) reporting only 17 FTEs out of a program-wide (BIA plus tribal) FMIP staffing of 145, and a need of 142 additional FTEs (Table F.6), it is evident that program management is not at the level needed for success. Inadequate staffing tends to lead to projects not being monitored properly, incomplete or improper projects, lost funding and many more inefficiencies.

Reporting on the status of all FMIP projects is an important part of a successful program. Missing or inaccurate data that is used to portray the FMIP program can lead to poor decisions. There is also

confusion over the requirements for self-governance tribes for reporting any updates to the FMIP databases. There were many instances in this assessment where tribal data (and some BIA data) was identified as missing due to non-reporting from individual tribes. Again, without

Table F.6. Additional FMIP Funding and Staffing Needs Including Tribal Staffs.

Category	Need
Staffing Needs (FTEs)	
Professional Services	79
Technical	54
Support	4
Temp Seasonal	5
Total	142
Funding Needs	
Personal Services	\$9.1 million
Service Contracts	\$1.6 million
Other	\$0.6 million
Total	\$11.3 million

Source: 2019 BIA Funding and Position Analysis database

complete, accurate information, the best decisions from leadership may be limited.

Summary of previous IFMAT Reviews of the FMIP program

IFMAT I found that FMPs had the potential for focusing and directing forest management, but that the analysis was often inadequate, planning faced funding and personnel limitations, and that implementation was difficult. Sustained yield was narrowly defined, forest inventories were useful, but could be improved. IRMPs had not yet been implemented. IFMAT I also recognized that there were issues requiring special planning and management, including allotments, Alaska, mixed ownerships, and off-reservation lands. IFMAT I recommendations on forest management planning (Appendix v) focused on the issue of adequate funding and staffing, exploring expanding the narrow definitions used in

the BIA planning process, and building support processes for implementation

IFMAT II found that planning was decentralized, resulting in a wide variation between forest plans in terms of approach, content, and quality. Progress on IRMPs was slow. While most FMPs defined a “tribal vision” there was much room for improvement. Progress had been made in describing ecological processes, describing the future forest, and linkages to operational plans, but there was still room for improvement. IFMAT II found that most plans defined sustainability solely in terms of harvest outputs. IFMAT II found that Continuous Forest Inventory

(CFI) compared favorably to inventory and planning systems used by other agencies, but there were organizational inefficiencies in the CFI effort and in GIS support. At that time, continuing support of the CFI system was uncertain. It found that because of inadequate planning budgets, most BIA support was aimed at inventory analysis, rather than forest planning. Larger tribes were found to have the resources to support their own forest planning efforts. IFMAT II recommendations focused on strengthening the planning effort and the systems that support it.

IFMAT III found a wide variety between plans in terms of quality of the plans – some plans were

much more comprehensive and detailed than others. It also suggested some general areas of strength and weakness across the set of plans reviewed. Few plans, for example, addressed staffing and funding needs with much specificity. Most plans, on the other hand, had a clear statement about the vision and purpose of forest management. IFMAT III recommendations focused on strengthening the planning effort and the systems that support it.

While some of IFMAT I-III forest management planning recommendations have been initiated, many recommendations have not been addressed, and continue to be repeated across multiple Assessments.



Riparian management on Passamaquoddy tribal lands in Maine. PHOTO CREDIT: VINCENT CORRAO

Task F Findings and Recommendations

Below are the findings and recommendations for the IFMAT IV assessment. Ten general findings were identified, ranging from issues surrounding forest plans, inventories, IRMPs, and business processes.

<p>F1</p>	<p>Finding</p> <p>Forest Management Plans are not being maintained either through amendments from policy changes or data revisions.</p> <ul style="list-style-type: none"> ■ Forest plans have now been established on all reservations. ■ The 2015 policy of non-expiring forest management plans may lead to plans that do not address emerging issues, updated data, new planning tools and processes, or changing tribal goals. ■ Maintenance of Planning Inventories and FMPs is not keeping up. ■ FMPs are not including the required funding, staffing, and investments sections as required by NIFRMA. 	<p>Recommendation</p> <p>Revise the policies surrounding non-expiring forest management plans to ensure that plans are monitored, reviewed, and updated as needed.</p> <ul style="list-style-type: none"> ■ This will require that planning inventories are completed as scheduled and the results of that analysis are incorporated into an updated plan. ■ Plans need to be reviewed by BIA for compliance with all the required elements as described in the 53IAM directives. ■ FMPs should be updated to include standards for funding and staffing specified by NIFRMA.
<p>F2</p>	<p>Finding</p> <p>Forest Management plans need to be updated to include newer issues, techniques, and ideas.</p> <ul style="list-style-type: none"> ■ Forest Management Plans are not utilizing modern planning techniques. ■ Forest management plans are not being updated to address current forest issues such as climate change, NTFP, forest health, and tribal objectives. ■ Most Forest Plans do not have business plans for the marketing and utilization goals and objectives, especially for tribal enterprises in their plans. ■ Monitoring of FMPs for performance evaluation is not occurring on most reservations. 	<p>Recommendation</p> <p>The content of the forest management plan needs to address newer issues, techniques, and policies.</p> <ul style="list-style-type: none"> ■ Newer issues like the increased implementation of hazardous fuels treatments and carbon sequestration need to be addressed in the FMP to ensure that any of these projects are meeting tribal objectives. ■ Plans should also evolve as newer techniques and ideas are implemented across the general forest management community. ■ Some aspects of FMPs which currently require a formal plan modification with BIA approval, such as updating inventories and harvest schedules should be considered routine plan maintenance rather than a plan modification.

Task F Findings and Recommendations

F3

Finding

Forest Management plans need to integrate all aspects of the forest management operations into one plan.

- There is a desire amongst tribal foresters to continue interdisciplinary approaches.
- Separating timberland and woodland components on a forest creates gaps in management planning.
- Many Forest Management plans do not integrate hazardous fuels treatments.
- Few forest plans have a cohesive plan for management of timberlands and woodlands combined.
- Tribes cannot integrate tribal non-trust lands into the forest-wide plan.
- Forest planning models show little integration with transportation plans.
- A recent BIA assessment estimated that there was a transportation investment backlog of \$1.33 billion to implement active management and provide for forest protection.
- FMPs are not including carbon sequestration tribal goals BEFORE agreements are developed. The BIA does not have standard protocols for the accounting of carbon.

Recommendation

- Merge the timberland and woodland components into one forest-wide plan.
- Forest management plans need to be better linked to transportation plans to ensure that forest protection is possible.
- Plans that incorporate all tribal lands into a single plan will better serve tribes than individual plans for trust and non-trust land.



A cypress swamp on lands of the Mississippi Band of Choctaw Indians. PHOTO CREDIT: ADRIAN LEIGHTON

Task F Findings and Recommendations

F4

Finding

The concept of Sustained Yield Management and development of allowable annual cut needs to be modernized to meet today's issues and demands.

- There is not a clear definition and interpretation of sustained yield management principles. On some forests, the interpretation and implementation of sustained yield management is restricting the implementation of practices to increase forest resilience.
- The BIA and tribes continue using older principles for developing allowable annual cut instead of current practices.
- Older forest planning models used in the planning process typically were short-term models and show little detail on how to reach desired future conditions.

Recommendation

- Develop a team of experts to review current definitions and procedures for determining allowable annual cut and propose revisions.
- Work with tribes to introduce and train on new scheduling techniques.

F5

Finding

The forest inventory program is lacking needed information for developing modern forest plans.

- There is a need to separate the need for an inventory to monitor sustainability and the need for an inventory to manage forest land.
- There is too much reliance on Continuous Forest Inventories to provide all inventory needs. Inventories are not adequately addressing management issues for all land types.
- Clear national direction and standards for stand-level inventories have not been developed.
- Without ability to utilize stand-based inventories, tribes are at a disadvantage for adequate assessment of catastrophic events such as fire and wind-events.
- Tribes have an interest in working with new technologies, but there is not the capacity in BIA to assist, nor funding available to implement or contract out.
- Inventory and planning technology within the BIA has not kept pace with forest developments on other ownerships.

Recommendation

The scope of using the Continuous Forest Inventory (CFI) system needs to be evaluated and scaled back to its original intent or to become more of a sustainability model.

- An in-depth analysis of the inventory needs and requirements for forest planning and implementation needs to be initiated. Discussion topics mentioned in this assessment should be a starting point for creating a path forward.
- Stand inventories should be considered wherever possible to increase the knowledge of the forest and used in developing tools such as growth and yield models and harvest schedules.
- Forest inventories need to utilize all the newer technologies that are available to better plan forest management activities.
- Funding for implementation of in-place inventories, use of new technologies (such as LiDAR) needs to be increased to cover these important improvements.

Task F Findings and Recommendations

<p>F6</p>	<p>Finding</p> <p>The gap between the Allowable Annual Cut and the volume offered for sale continues to grow.</p> <ul style="list-style-type: none"> ■ This is an indication that there are problems with the current usage of this metric for forest management. ■ Reasons for the gap include funding (Task A), staffing (Task C, D), changing tribal objectives, methods for determining the allowable harvest levels and lack of markets. ■ Using only basic formulas such as the Austrian Formula to set harvest levels tends to miss opportunities to maximize forest conditions (see Recommendation F2). 	<p>Recommendation</p> <p>Close the gap between the Allowable Annual Cut and Volume Offered for Sale.</p> <ul style="list-style-type: none"> ■ Validate the definition, calculation, and implementation of the Allowable Annual Cut (AAC). ■ Provide adequate recurring funding to build staff capacity to plan, schedule and offer all allowable cut volume (Task A). ■ Update Forest Management Plans to reflect current and future tribal objectives.
<p>F7</p>	<p>Finding</p> <p>FMIP funding and staffing is insufficient for full implementation of program to meet laws, policies, and procedures.</p> <ul style="list-style-type: none"> ■ Funding for the FMIP program is not adequate to sustain inventory and planning requirements. ■ FMIP funding is not being applied on a recurring schedule. ■ Self-governance and self-determination programs reduce the economy of scale and increase costs. ■ Levels of BIA service varies greatly between self-governance, self-determination, and service-provided tribes due to BIA Regional policies and funding mechanisms. ■ The Central Office and Regions have sacrificed FMIP program management funding and staffing to maximize funding in the field. This has reduced the amount of oversight and technical assistance available to tribes. 	<p>Recommendation</p> <p>FMIP funding and staffing need to be sustained at levels described in the Funding and Position Analysis.</p> <ul style="list-style-type: none"> ■ Equitable funding for all the different types of governance agreements needs to be addressed. ■ Program management is an important part of the FMIP program and needs to be included in the funding process to ensure proper implementation of the policies and procedures.

Task F Findings and Recommendations

F8

Finding

FIP (BoFRP) is not able to keep up with the needs of the BIA and tribal FMIP needs.

- FIP does not have the staffing or skills to provide to provide technical leadership in inventory, planning, harvest scheduling.
- Results from planning inventories are not provided in a timely fashion due to the backlog and technology issues.

Recommendation

The mission of FIP (BoFRP) needs to be evaluated and adjusted to better adapt to the current needs of not only the BIA managed programs but all tribal programs.

- The staffing needs to not only be increased, but increased with the technical skills needed to address the needs.
- The business processes used in management of the CFI program need to be evaluated to increase the capability to service tribes on a timely basis.



Commercial thinning project on the Spokane Tribe Reservation in Washington. PHOTO CREDIT: VINCENT CORRAO

Task F Findings and Recommendations

F9

Finding

FMIP business processes need clearer policies and procedures and enforcement.

- With the shifting of programs more towards tribal management, there is a need to review the business process used for the FMIP program under increasing self-governance.
- Management databases are incomplete due to missing or inaccurate data from both the BIA and tribal programs.
- Roles and responsibilities for reporting requirements from self-governance tribes are not clear creating a disconnect between ground accomplishments and administrative reports.

Recommendation

As part of the agreements between the tribes and the federal government for self-governance, a requirement to report FMIP accomplishments needs to be included.

- This needs to be a collaborative effort for all involved in the program.
- Proper program management can only occur when there is accurate data to work from.

F10

Finding

The IRMP program is struggling with little addition to completed IRMPs.

- The BIA is no longer actively promoting the IRMP program. Grants are no longer advertised, but tribes can apply through normal Forest Management Project avenues.
- Based on past analysis, development cost of IRMPs outstripped the funding available and very few plans were completed.
- Implementation of tribal IRMPs is slow, none in last decade.
- There is a conflict on including newly acquired lands in the IRMP plan.
- Tribal public input in the IRMP process is stronger than in the FMP process.

Recommendation

The BIA needs to make a clear statement about the continuation of the program.

- If the program is to be continued there needs to be a new program model to better fund, develop, and implement IRMPs.
- IFMAT supports planning integration across all natural resources within an IRMP or FMP.

TASK
G

An evaluation of the feasibility and desirability of establishing minimum standards against which the adequacy of the forestry programs of the Bureau of Indian Affairs in fulfilling its trust responsibility to Indian tribes can be measured

Introduction

Establishment of standards, funding to support forestry at established standards, and enforcement of standards are central to the theme of state-of-the-art forestry. Many of the failures in Indian Forestry are linked to inadequate support of standards. IFMAT I proposed that standards for evaluating performance should be agreed to between each tribal government and the Secretary of the Interior. This call seems to have gained traction after 25 years through the ITARA demonstration project which has been implemented on several reservations. NIFRMA requires that each FMP include standards setting forth the funding and staffing requirements necessary to carry out each management plan. Few FMPs approved by the BIA contain these requirements. NIFRMA sets minimum standards for tribal forestry program staffing, yet more than half of the tribal forestry staffs receive less than the minimum staffing budget allocations that NIFRMA lays out. Overstocking, poor road conditions, planting backlogs, invasive species, loss of watershed function, and inadequate facilities are largely the result of inadequate standards, lack of funding support where standards exist, lack of enforcement, and lack of BIA technical capacity (See Appendix xi). Regardless of efforts by the BIA to establish standards through handbooks

and manuals or tribes to establish standards through tribal regulations, there is widespread acknowledgement that the

funding gap is increasing between what is required for state-of-the-art forestry and actual federal support. IFMAT has long

“We stretch a dollar very far to complete projects.”

—IFMAT IV focus group participant



Navajo Nation forest stand that has been pre-commercially thinned for the pole marking program where tribal members can purchase and harvest poles for building materials and as fuel.

PHOTO CREDIT: SERRA HOAGLAND

recommended an independent commission outside of the BIA (and Secretary of the Interior) to verify plan performance. However, this independent commission has not been established.

Framing Standards

The discussion of standards can be framed around the following two questions:

a) What are the current standards and how are they used?

Several current forestry and forest management standards exist including individual approved tribal FMPs, 25CFR Part 163 regulations, BIA handbooks and manuals, provisions of the Indian Trust Asset Reform Act (ITARA) including individual ITAMPs, and NEPA/ESA regulations regarding forestry project level work.

NIFRMA and the 25 CFR Part 163 regulations provide the framework for current federal Indian forest management standards. The BIA has developed manuals and handbooks to implement their interpretation of the federal regulations. While not directed by statute or regulation, the BIA appears to view adherence to the policies and procedures set forth in these guidance documents as standards for fulfilling the Secretary's trust responsibility.

Tribal comments during the virtual meetings and site visits raised questions about the extent

of use and the value of the BIA manuals and handbooks as a set of standards. One half of the tribes participating in the assessment felt that the manuals and handbooks were useful to some extent. General observation is that standards are needed but should be tribally driven and determined by each tribe's vision for management of its forest lands.

Some specific observations from tribes relating to BIA manual and handbook standards are: "we don't use them", "they are outdated", "procedures need to be streamlined", "practice is to follow usual, long-term procedures that have worked over the years rather than refer to the manuals and handbooks", and "the manuals and handbooks do not reflect state-of-the-art forestry or tribal forest management objectives". One tribal forest manager felt standards and procedures contained in BIA manuals and handbooks may serve the BIA's needs for consistency and accountability, but were burdensome, did not provide the best approach for getting things done at the field level and did not serve the tribe's interest. Some tribal staff stated that the manuals and handbooks were useful in providing guidance to address specific issues such as forest trespass and forest management planning. Newer staff, without a lot of experience in Indian forestry, felt guidance provided in the manuals and handbooks

was useful, but at times overly prescriptive and needed updating.

With the continued advancement of self-governance and movement towards carrying out forestry activities under ITARA, the use of BIA manuals and handbooks as standards becomes problematic. BIA policies, manuals and handbooks do not apply to P.L. 93-638 contract and compact (GAO-19-87 Indian Programs). Under ITARA, tribes can replace federal rules with tribal law and regulations resulting in an almost complete removal of BIA involvement in carrying out forest management on Indian trust lands.

"Forest management is supposed to be by the book. Now let's see what kind of book we can write."

—IFMAT IV focus group participant

b) How should state-of-the-art standards be developed and implemented under P.L. 93-638 contract and compact tribal operations and ITARA models for Indian forest management?

In the development of the Forest Management Plan (FMP) each tribe identifies important values and establishes a tribal vision for forest management, set goals and objectives and describe forest practices to achieve desired outcomes. For P.L. 93-638 contract and compact tribes, the FMP is approved by both the tribe and the Secretary. IFMAT has long argued that each tribe and the Secretary should mutually agree on minimum standards within the development of the tribal FMPs. For tribes carrying out forest management

"The BIA manual is always thrown in our face but we are underfunded and cannot do everything that is listed in the BIA manuals."

—IFMAT IV focus group participant

under ITARA, the FMP may be incorporated into the ITAMP approved by the Assistant Secretary of Indian Affairs (ASIA). As the transformation to direct tribal operations under P.L. 93-638 and ITARA continues to advance, including standards in the FMP is an appropriate approach. Such standards need to be defined by each tribe's vision for its forest and designed to measure achievement of tribally established goals as well as fulfillment of the federal trust responsibility.

*“The forest is our classroom.
It’s in our songs.
It’s our sanctuary
and we want to preserve it.”*

—IFMAT IV focus group participant

The measure of how standards meet the criteria of state-of-the-art is determined by the tribally articulated vision for forest management. The health and resiliency of the forest and the degree to which management achieves tribal goals is the best determination of whether state-of-the-art management is occurring.

Evaluation of Standards

NIFRMA Task G focuses on evaluating if the BIA fulfillment of its trust responsibility to tribes can be measured and if it is feasible. In many ways this is a deeply philosophical question with critical impacts to tribal communities and the health and wellbeing of Indian people, not only today but into the future. Understanding the



Aspen stand on the Mescalero Apache Indian Reservation in south-central New Mexico. PHOTO CREDIT: SERRA HOAGLAND

feasibility and desirability of establishing minimum standards for the BIA in delivering their services to tribes can ultimately lead to improved services and relationships between the federal government and sovereign Indian nations. While standards should generally reflect the vision, goals and objectives of each individual tribe, it is clear that

minimum standards are feasible for the BIA to establish and are desirable. Minimum standards should include policy, operational and silvicultural needs such as reforestation, thinning, invasive species, facilities, and staffing. However, inadequate funding has consistently prevented tribes from meeting minimum standards and achieving their goals and vision.

The measure of the extent to which standards qualify as ‘state-of-the-art’ (SOTA) is determined by each tribe’s vision for forest management as expressed in their FMP. This can be quite different from the conventional approach of what constitutes SOTA for other land management groups, organizations and departments. Of special note is that IFMAT III

“Our forest is well managed given what we have available [for funding].”

—IFMAT IV focus group participant

found when comparing minimum standards for tribal programs with other landowners with different management objectives,

such standards possibly underestimated the unique combination of benefits that were provided by investments in tribal stewardship. IFMAT II and IFMAT III found that third party certifications often do not align well with the unique value of tribal forest management.

One fundamental way to determine if the BIA is fulfilling its trust responsibility to tribes is to identify if tribal goals and their vision for their forest is being met. In focus groups with staff and tribal community members we most frequently heard that tribes are doing what they can with the resources they are provided. Tribes have a holistic way of valuing their forest and the resources it provides, and each tribal entity has unique goals, perspectives, historical context and needs in managing their forest. Following these unique goals should be standards that can continue to support and meet the tribe’s expectation into the future.

NIFRMA, passed in 1990, reflected the conditions at the time. The challenge for IFMAT IV is to address the tasks in a modern context. More than 3 decades ago, tribal forest management was almost entirely carried out by the BIA with limited exercise of Indian Self-Determination by tribes in management of their trust lands. Many tribes are now directly carrying out forestry programs under self-determination



Jocko Prairie fuels reduction project in northwestern Montana.

PHOTO CREDIT: SERRA HOAGLAND



An active timber sale on the Quinault Reservation. PHOTO CREDIT: TIM VREDENBURG

contracts and compacts under the authority of the Indian Self Determination and Education Assistance Act of 1975 (ISDEAA- P.L. 93-638 as Amended). Under these Indian self-determination (contracts) and self-governance (compacts) arrangements, there is no longer direct BIA involvement in program operations and these tribes do not have to follow BIA Manuals and handbooks (GAO-19-87 Indian Programs). There are a few forestry programs that are hybrid in nature having both BIA and tribal components under various organizational structures.

Under the Indian Trust Asset Reform Act of 2016 (ITARA- P.L. 114-178) the implementation of self-governance is taken a step further by providing the authority

for tribes to conduct forest management activities under tribal forestry regulations instead of federal requirements. This further advanced the ISDEAA in tribal management of trust forest lands. Under ITARA and an approved Indian Trust Asset Management Plan (ITAMP), most of the ‘inherent trust functions’, previously exclusive domain of the BIA, are now performed under tribal authority. With ITARA and an approved ITAMP, tribes are authorized to carry out forest land management

activities under tribal law and tribal forestry regulations without approval of the BIA. For instance, management under an ITARA/ITAMP provides the opportunity to address environmental compliance under tribal law and tribal forestry regulations providing a potentially streamlined, much less expensive and burdensome approach. ITARA provides opportunity to exercise full tribal self-determination and strengthen tribal sovereignty in the management of Indian

“I’m encouraged by us being able to manage our forests in our own way, by talking to our own people.”

—IFMAT IV focus group participant



Active Management on the Cow Creek Band of the Umpqua Tribe's Forestlands. PHOTO CREDIT: TIM VREDENBURG

forest lands. Consequentially, in modern contexts, the relevance of 'forestry programs of the BIA' now comes into question for tribes utilizing the ITARA authority. The BIA, as a technical service provider, could support tribes in implementing a more efficient and less costly management program that meets all environmental performance standards.

Measuring the level of prosperity, which in this context can be briefly defined as the extent to

which tribal forestry programs are growing, providing services, maintaining healthy ecosystems, and acquiring more lands, may serve as some indirect indication that minimum standards are being met. However, success in Indian Country could also occur despite not receiving adequate support from the BIA. In fact, tribes are inherently adaptable and bring creativity and innovation in situations when basic needs are not met. Therefore, the increase in prosperity could also reflect

decades of limited support from the BIA. It is difficult to quantify the root of prosperity however, IFMAT took special consideration into analyzing the extent to which tribal forestry programs are succeeding and growing in scale, scope, and impact.

The following Findings and Recommendations have been grouped around (1) funding, (2) directives, (3) procedures, (4) program, and (5) assistance, and (6) ITARA.

“The forest is part of who we are and it is sacred. It is an extension of our body. It gives us prayers.”

—IFMAT IV focus group participant

Task G Findings and Recommendations

1 - Funding

G1	<p>Finding</p> <p>Broadscale compliance of approved FMPs is not feasible without adequate funding and staffing.</p> <ul style="list-style-type: none">■ NIFRMA requires that FMPs include standards for funding and staffing to meet the tribal vision. Many plans are being approved by the BIA without this component.■ Low funding allocations and limited staff to carry out approved Forest Management Plans is limiting the tribes' ability to fulfill their vision for forest management.■ Tribes are often subsidizing the work to meet the gap and although this is a sign of the commitment from the tribes, many tribes do not have the resources to do this. See Task A and Task C for additional information.	<p>Recommendation</p> <p>Provide adequate funding and staffing to tribal forestry programs.</p> <ul style="list-style-type: none">■ FMPs should be updated to include standards for funding and staffing specified by NIFRMA.■ The CFR Part 163 formula to determine base funding for tribal forestry programs needs to be modernized to align with present day tribal visions for forest management (see Task F).■ The clear minimum funding level should be at least equal or exceed the funding levels of the adjacent federal land management agencies within geographic regional costs for forest management. Those funding levels should be reviewed annually to match CPI increases. (See Task A).
G2	<p>Finding</p> <p>BIA and tribes are underfunded, resulting in understaffing.</p> <ul style="list-style-type: none">■ NIFRMA requires BIA to provide funding for at least one professional forester plus a significant number of technicians for each tribal forestry program, yet the BIA does not meet this NIFRMA mandate.■ As more and more tribes turn to direct tribal operations and assume performance of forestry functions and BIA funding for those functions, the capacity of the BIA continues to be diminished.■ Tribes are underfunded and understaffed (See Task A and Task C) and when there is not adequate funding then tribes are simply not able to achieve their vision through an established FMP/IRMP/ITAMP.	<p>Recommendation</p> <p>Review and address funding and staffing needs of tribes and the BIA central, regional and agency offices.</p> <ul style="list-style-type: none">■ See Task A and Task C for additional specifications.

Task G Findings and Recommendations

2 - Directives

G3

Finding

A review of existing authorities on P.L. 93-638 self-determination and self-governance direction has determined that tribes under either agreement do not have to follow BIA directives (manuals or handbooks) (GAO-19-87).

- There is unclear direction between the BIA and tribes causing improper use of BIA and/or tribal directives. This is causing conflict in implementing actions.
- Tribes under P.L. 93-638 contracts (self-determination) must include the standards under which the tribe will operate all non-construction programs, services, activities, or functions that are included in the proposal.
- Tribes under PL93-638 compacts (self-governance) do not have to identify the standards for administering programs.

Recommendation

Develop clear, updated guidance for BIA, tribes, other federal agencies, and any other program involved in tribal forest management activities.

- Review the relevancy and effectiveness of 'forestry programs of the BIA' given the increasing trend of P.L. 93-638 contract and compact tribes directly carrying out forestry program operations.
- Adapt the role of the BIA and its approach for setting tribally focused standards under Indian self-determination and self-governance principles needs to be evaluated.
- Change the standards of the BIA review and approval of forest management actions implemented by P.L. 93-638 contract and compact tribes. The standards must adhere to the principles of self-governance set forth in 25 CFR 1000.4 and further stated in individual compacts rather than inappropriately requiring compliance with BIA manuals and handbooks.
- Minimum standards should include policy, operational and silvicultural needs such as reforestation, thinning, invasive species management, facilities, staffing and funding.

Task G Findings and Recommendations

2 - Directives (continued)

G4

Finding

Direct service tribes find that complying with directives in BIA handbooks and manuals hinders the ability to accomplish tribal goals.

- Following the BIA approval processes causes delays that reduce the tribe's ability to respond to issues such as critical program changes or market peaks, thus missing the opportunity to benefit.
- Inappropriate application of BIA requirements is needlessly impacting P.L. 93-638 contract and compact tribes.

Recommendation

Streamline the BIA decision processes for direct services tribes.

- Set a 60-day timeline for BIA to complete its federally required actions so that tribes can be more successful in achieving their goals.
- Require all other federal agencies such as NMFS and/or USFWS to respond in a timely manner.
- Update BIA manuals and handbooks to acknowledge and clarify that procedures in the directive only apply to direct service tribes.
- Encourage contract and compact tribes to create their own guidance documents that better serve their visions and goals. If the BIA handbooks and manuals are useful to P.L. 93-638, the guidance can be optionally used.



Mount Taylor in northern New Mexico is very significant to tribes in the southwestern US and its forests provide numerous benefits to tribal communities by providing habitat to culturally relevant species and water resources for the adjacent communities. PHOTO CREDIT: SERRA HOAGLAND

Task G Findings and Recommendations

2 - Directives (continued)

G5

Finding

Minimum administrative and technical standards for funding and staffing are not being set in many circumstances.

- Minimum standards are needed for proper implementation of programs.
- In the development of Forest Management Plans, tribes establish a vision for forest management, set goals and describe standards for various management activities (e.g., AAC and cutting schedule, silvicultural practices, BMPs, etc.).
- These requirements measure the extent to which practices qualify as state-of-the-art (SOTA) as determined by each tribe's vision.
- Tribes that are, or plan to be, under the ITARA authority need additional funding, staffing, and training to develop minimum standards and procedures that can be incorporated into the ITAMP document.

Recommendation

Focus on accomplishment of tribal vision rather than delineate minimum standards for BIA.

- P.L. 93-638 tribes should be the principal agent responsible for crafting, implementing, and monitoring a coordinated resource management plan congruent with its vision for forests and forest management.
- For compact and contract tribes, instead of BIA manuals and handbooks, the FMP should be the principal document containing state-of-the-art standards to achieve the tribal vision and management goals and the fulfillment of the federal trust responsibility for Indian forests.
- For self-governance compact tribes, the review and approval of the FMP and determination of the fulfillment of the Secretary's trust responsibility by such standards should be in the context of the policy and principles of self-governance contained in 25 CFR 1000.4. In these instances, BIA review, approval and oversight needs to be accomplished through the lens of self-governance and not adherence to rules contained in BIA manuals and handbooks.
- Develop a clear and efficient process to approve changes to a forest management plan to allow for rapid adjustments to current issues.

Task G Findings and Recommendations

2 - Directives (continued)

G6	Finding Tribes are not being given opportunities to provide input concerning the updating of BIA handbooks and manuals. <ul style="list-style-type: none">■ Many P.L. 93-638 tribes continue to use BIA directives as the minimum standards for their program, so they still have a vested interest in the development of updates.■ BIA manuals and handbooks were found to be outdated regarding providing direction on the development and implementation of program standards.■ The BIA has assembled teams that have been working for several years on updating the manuals and handbooks and creating new content but are not including tribes in their development. This is a missed opportunity to keep current policies and state-of-the-art technologies and procedures.	Recommendation Evaluate and review inclusion of tribes in handbook and manual revisions. <ul style="list-style-type: none">■ Consider potential changes in the manual and handbook system to develop standards and procedure consistent with Indian self-determination and self-governance principles to achieve increased usefulness to both BIA and tribally directed forestry programs.■ Invite interested tribes to participate in the development of these directives to evaluate, update, and create new manuals and handbooks that developed useful standards and procedures for BIA directed forestry programs.■ Ensure that the new directives acknowledge non-applicability to P.L. 93-638 contract and compact tribes with manuals and handbooks providing optional guidance.
G7	Finding There are inconsistent requirements and guidance between BIA direct operations and P.L. 93-638 contract and compact tribes relating to trust oversight, trust standards and trust responsibility. <ul style="list-style-type: none">■ This hampers communication between trustee and beneficiary and creates misunderstandings concerning responsibilities for delivery of services and leads to confusion at all levels.	Recommendation Establish definitions for trust standards. <ul style="list-style-type: none">■ Evaluation of fulfillment of the trust responsibility needs to be based on tribally focused trust standards agreed to by each tribe and the Secretary of the Interior. Such standards need clear definition and a process for trust oversight.■ There needs to be an independent third party to assess if trust responsibility is met and this is likely more relevant today for ITARA tribes.■ Performance should be monitored regularly by another independent body.

Task G Findings and Recommendations

3 - Procedures

G8	<p>Finding</p> <p>There is a lack of BIA policies and procedures for direct services program reviews.</p> <ul style="list-style-type: none">■ Some tribes have requested and are interested in a program review of the BIA performance of forestry program functions on the reservation.■ Currently the BIA has no program review policy or procedure to evaluate delivery of their direct services.	<p>Recommendation</p> <p>Create specific procedures for BIA direct services program reviews.</p> <ul style="list-style-type: none">■ Specific program review procedures should be reinstated in manual and handbook content for BIA direct service programs.■ Line officers (Chief, Regional Directors, etc.) need to direct staff to perform the requested review tailored to the tribal wishes and needs.■ Allow direct service tribes to identify the timeline at which they would like for a review of BIA accomplishments and performance.■ As recommended by previous IFMATs, an independent commission should be established to provide trust evaluations
G9	<p>Finding</p> <p>There <i>are</i> current regulations and procedures to conduct trust evaluations of the financial aspects of forestry programs carried out by tribes under self-governance compacts through the Bureau of Trust Funds Administration (BTFA). However, there are not procedures in place to conduct the review of the management of the trust resource.</p> <ul style="list-style-type: none">■ Self-governance compact tribes undergo trust evaluations that review tribal and BIA accounting performance to ensure the trust responsibility is being fulfilled. There is no trust evaluation of BIA for direct service tribes.	<p>Recommendation</p> <p>Resolve the disparity between direct services and self-governance tribes when it comes to all trust evaluations.</p> <ul style="list-style-type: none">■ Trust evaluations should be conducted on the management of trust resources by self-governance compact tribes.■ Ensure the proper policies and procedures for conducting trust evaluations for ITARA tribes are set forth in each ITAMP.

Task G Findings and Recommendations

4 - Program

G10	Finding Land acquisitions result in lands being treated as fee lands instead of trust lands. <ul style="list-style-type: none">■ The process of taking fee land into trust can be lengthy and burdensome.■ Tribes are acquiring substantial areas of forest lands in fee status and for some tribes there is little interest or incentive in having those lands taken into trust.■ Tribes are finding that with fee lands the focus can be on tribal goals and increased flexibility without having to comply with burdensome federal requirements. Timber cruise accuracy of 5% for realty cruises is difficult to achieve.	Recommendation Streamline the process and timeline of converting fee land into trust land. <ul style="list-style-type: none">■ Work with Realty to develop procedures for immediate conversion to trust if desired by tribe.■ Review the cruising standards for realty cruises to see if they align with other federal land purchases.
G11	Finding BIA has outdated resources, shows limited attention to requirements in NIFRMA and lacks basic information. <ul style="list-style-type: none">■ The BIA needs to improve their programs to provide current and accurate data across the agency.■ Many BIA systems are outdated, and technology provided to BIA staff is lacking the software to manage programs and provide services to tribes.■ Many systems that tribes have access to require extensive computer privileges (i.e., TAAMS).	Recommendation Increase BIA knowledge regarding NIFRMA mandates. <ul style="list-style-type: none">■ Provide and require training on NIFRMA mandates for all BIA employees.■ Provide advanced software programs and any appropriate training opportunities so that BIA employees can accomplish their assigned duties.
G12	Finding There is wide-spread, reluctant acceptance within tribes that all forest health backlogs will never be treated. <ul style="list-style-type: none">■ Backlogs in forest development, insect and disease eradication, and fuels reduction treatments are pervasive and have become tolerated.	Recommendation Establish a zero tolerance for Forest Health Backlogs. <ul style="list-style-type: none">■ At a minimum, tribal forests should be treated at a pace that keeps abreast of emerging forest health issues.

Task G Findings and Recommendations

4 - Program (continued)

G13

Finding

Not only are the minimum standards for the forestry program not being met, BUT many other BIA programs are also not meeting their set standards.

- Tribal roads are failing or are only in fair condition, 83% of tribal roads have been rated as being in unacceptable condition.
- Wild horse and burro issues are not being addressed to sufficient levels. The impacts of these animals on the natural resources have become an epidemic.
- Water, air, and other resources are in jeopardy due to climate change, drought and risk to wildfire.

Recommendation

Do a review of all BIA natural resources programs for funding and minimum performance standards.

- Direct the Office of Trust Resources to conduct an Office-wide assessment of programs for funding and staffing needs that includes tribal needs.
- Review current authorities to determine whether the trust responsibility of the federal government is being met.
- Provide training to tribes in developing budget and staffing plans to meet their natural resource need.

5 - Assistance

G14

Finding

Limited access to technical assistance and training is leading BIA and tribes to not have fully trained employees.

- Depending on the Region, BIA forestry is not consistently providing accessible technical assistance to tribes.
- The continued technical assistance role of the BIA for tribes under self-determination contracts and self-governance compacts is unclear and applied inconsistently across regions.
- In some instances, the BIA focus centers only on Trust oversight which, as mentioned previously, entails inherent conflicts of interest.

Recommendation

Improve accessibility for BIA technical assistance and trainings for all employees.

- As suggested by earlier IFMATs, BIA forestry should be reorganized to separate technical assistance from trust oversight.
- Clear policy should be issued defining the continued technical assistance role of the BIA for tribes operating under self-determination program contracts, self-governance compacts and ITAMPs.
- Where BIA continues to have technical assistance responsibilities, the focus should be on improved accessibility for tribes to receive SOTA services.
- Trust oversight should be delegated to an independent commission.

Task G Findings and Recommendations

5 - Assistance (continued)

G15

Finding

BIA technical assistance is below SOTA standards.

- IFMAT IV found that BIA Forestry has not received the funding or training to provide relevant and emergent technology to provide technical assistance to tribes.
- Modern marketing techniques are not being offered to tribes.
- BIA Forestry has not developed expertise necessary to support established technologies such as LIDAR and GIS.

Recommendation

Develop SOTA Strategies to equip BIA technical assistance programs.

- A review should be conducted of necessary funding and training strategies to support the development of technological expertise for BIA to support modern forestry technology applications.
- Continued BIA technical assistance services needs to be defined and agreed to by both the tribes and the Secretary in the context of Indian self-determination, self-governance and ITARA.
- Training should be made available to tribes and BIA to advance the application of modern forest products marketing strategies.
- All BIA forestry technical assistance programs need to be fully staffed and trained to provide the needed guidance to tribes consistent with P.L. 93-638 policies and ITARA authorities (See task C).

6 - ITARA

G16

Finding

ITARA/ITAMPs provide the opportunity to manage trust forest lands in a manner very similar to tribal fee forest lands.

- Tribes are wanting to know more about the ITARA authority and how to apply.
- Many BIA officials do not know or understand the ITARA program.

Recommendation

The BIA and tribal organizations should be encouraged, and tribal leaders trained on the benefits of ITARA.

- Provide ITARA/ITAMP training for tribal and BIA entities and provide capacity for tribes to participate in the ITARA Demonstration Project.
- Require the BIA to conduct a survey to identify the number of tribes that are interested in ITARA and create training to increase tribal understanding of ITARA.
- Provide grant funding to provide tribes with capacity to participate in the ITARA Demonstration Project.

Task G Findings and Recommendations

6 - ITARA (continued)

G17	Finding Limited progress and understanding of ITARA Demonstration Projects. <ul style="list-style-type: none">■ Approval of ITAMPs for the first two tribes authorized to participate in the demonstration project occurred in Dec 2020, which was 4.5 years after the commencement of the ten-year demonstration project.■ Several BIA regional offices and many tribes were unaware of ITARA and the opportunities for advancing self-determination and self-governance for tribal forestry programs.■ Those tribes which had some level of knowledge about ITARA expressed awareness of the benefits of carrying out forest management activities under the authority of an ITAMP.■ However, while tribes indicated the desire to participate in the ITARA Demonstration project most lack capacity and funding to develop an ITAMP.	Recommendation Extend the ITARA Title II Demonstration Project and increase general knowledge about ITARA applications. <ul style="list-style-type: none">■ Recommend that the demonstration either be extended or made permanent to enable more tribes seeking to participate with the ability to do so.■ Review ITARA communication strategies and better educate BIA employees about ITARA.■ Encourage the BIA and other organizations to host ITARA trainings and workshops to educate tribes and provide grants and funding opportunities for tribes to create an ITAMP.
G18	Finding A significant shift in concept and performance of inherent federal functions for SG/ITARA tribes leaves unaddressed issues relating to the Secretary's trust responsibility. <ul style="list-style-type: none">■ The context of the inherent federal function and the relationship of the performance of this function in fulfilling the Secretary's trust responsibility has changed. This leaves a residual trust responsibility that is not well understood.■ Under an approved ITAMP, with exception of the FMP, Wildland Fire Management Plan, and expenditure plans for FMDs, all approval of forest management actions previously performed as inherent federal functions of the BIA are now performed under tribal authority without BIA involvement.■ Tribes undertaking these inherent functions will need additional staffing and support to properly implement this authority.	Recommendation Under ITARA, the context of the fulfillment of the Secretary's trust responsibility and changes in performance of inherent federal functions, including related funding issues, needs to be defined and reviewed. <ul style="list-style-type: none">■ It needs to be recognized by the federal government that the federal trust responsibility has not been diminished in the new era of self-determination, self-governance and ITARA.■ Additional funding will be required by tribes to undertake these inherent functions.■ Funds that DOI/BIA currently retains for carrying our inherent federal functions now assumed by SG should be released to those tribes.

TASK
H

A recommendation of any reforms and increased funding levels necessary to bring Indian forest land management programs to a state-of-the-art condition

The Trend Toward Stewardship

Tribal visions for forest lands are emphasizing forest health and protecting and enhancing other forest values rather than harvesting the allowable annual cut (AAC). This increasing trend toward a stewardship model potentially impacts multiple aspects of Indian forestry programs. Are the funding and staffing requirements more, less or the same with a shift from timber production

*“No matter what we do,
we should be the managers.”*

—IFMAT IV focus group participant

toward stewardship? While there has been some change in the approach to justifying BIA forestry budget appropriations to include other considerations, harvesting the AAC continues to be a prominent factor. BIA policy guidance (manuals and handbooks) continue to have a strong focus on timber

harvesting. Where potential for commercial timber production exists, a major portion of required FMP content concerns forest inventory, inventory analysis, AAC determination and harvest scheduling.

Does the emerging trend toward stewardship strengthened by



A discussion of a white oak stand management project during a site visit to the Eastern Band of Cherokee.

PHOTO CREDIT: TIM VREDENBURG



A discussion of a burned area rehabilitation planting project on the Yakama Indian Reservation in Washington state.

PHOTO CREDIT: VINCENT CORRAO

advances in self-governance and exclusive tribal control (ITARA) in achieving forest visions call for reassessing how Indian forests will be managed in the future and how needs and the BIA might change to align with this new management model?

Fee Lands, Co-management, and FMPs

Tribes have acquired significant acreages of private forestland and hold these lands in fee status. Some tribes have expressed the desire to manage both trust and fee lands under a single

forest management plan (FMP) integrating harvest capacity, scheduling of harvest and management of forest resources for their total ownership. BIA has been reluctant to support preparation of such plans due to funding restrictions and an expressed lack of authority to approve FMP's which integrate trust and fee lands. Tribes are increasingly acquiring fee land some of which is brought into trust and acquired fee land is often not within the reservation boundaries. Are BIA reforms necessary to accommodate this trend?

Wildfire Management

Large wildfires on Indian lands are becoming more frequent, costlier and more complex to manage. Centralization of fire suppression programs (national and regional control of allocation of resources) has had serious negative impacts on tribal ability to respond quickly at the local level and thus to keep fires small. Also, there is a major impact on tribal employment by eliminating use of local contractors, equipment, and firefighters due to difficulties in complying with national qualifications. For self-governance tribes are the national qualifications a law or convention? A key issue is that federal agencies will not reimburse fire suppression costs to tribes if the crews or resources used do not meet national qualification standards.

Safety and funding are connected to the national specifications. Are these fire specifications and qualifications an unfunded mandate? Trust responsibility and tribal sovereignty may not be given proper consideration in allocation of national resources and ability to use local resources. In setting suppression priorities for trust property, it is a question of how it is valued, in relation to structures, for example.

Fire suppression actions on Indian trust lands may need to be held to a higher standard of accountability, especially when those actions destroy trust resources to contain fires. In any case Incident Management Team (IMT) leadership assigned to wildfires on Indian lands should have special training relating to tribal sovereignty and the federal trust responsibility as it relates to protection of trust

forest assets. Also, in terms of fire recovery actions, BIA seems to be understaffed and underfunded in providing BAER (Burned Area Emergency Response) assistance, as evidenced by delay in providing funds. BIA should review BAER and BAR (Burned Area Rehabilitation) funding and treatments. How does the BIA identify funds and the activities, for example, tree planting?

Timber Sales

Log sort sales can improve marketability of timber, capturing uplift in revenue and creating tribal employment. Tribes often establish tribal enterprises to accomplish this but tribes without enterprises are handicapped in doing it by BIA rules slanted toward stumpage sales.

Paid permits offer flexibility and timeliness for small harvests.

However, the stumpage value limitation of \$25,000 which may be harvested by an individual or entity in a fiscal year severely restricts commercial harvest operations under paid permits. The \$25,000 value limitation was established when the current 25 CFR forestry regulations were issued over 25 years ago. With inflation today's value would be closer to \$45,000. There should be a mechanism for the BIA and tribes to adjust the rate, in a more flexible way to make this work effectively.

Funding Self-governance Tribes

The DOI/BIA retains funds, that otherwise would be available to self-governance tribes, to provide federal capacity for performing the functions now accomplished by ITARA tribes. BIA could be

a coordinator for the tribes in technical support as suggested in IFMAT I.

A number of tribes expressed interest in participating in the ITARA Demonstration Project but lack the capacity to develop an application to participate and prepare an ITAMP to carry out forestry operations under tribal authority. Under self-governance program regulations, planning and negotiation grants are made available to help tribes meet costs to complete the required processes to participate in the self-governance program.

More BIA technical and financial support would be helpful in assisting tribes move toward self-governance. Some tribes are not able to utilize or pursue project funding because they lack the capacity to develop project proposals and administer the additional projects. The trend towards nonrecurring funding prioritizes funding that aligns best with ephemeral Agency agendas rather than tribal priorities and values. This practice of funding supports federal domination and restricts the development of self-determination.



Penobscot tribal forestry staff discussing a recent commercial harvest in Maine. PHOTO CREDIT: VINCENT CORRAO

Task H Findings and Recommendations

<h2>H1</h2>	<p>Finding</p> <p>At many locations, the AAC has been reduced and management of tribal forests has shifted from a focus on timber production toward forest stewardship.</p>	<p>Recommendation</p> <ul style="list-style-type: none"> ■ Review statutory, regulatory and policy requirements for Indian forest management including budget justification and reporting processes and determine needed reforms to address a change in the balance between timber production and stewardship. ■ Quantify the changes from AAC emphasis toward other forest values, while encouraging tribes to include all important values in their management plans. ■ Develop a table of authorities for self-governance tribes, compact, 638, direct services. This should include the allottees.
<h2>H2</h2>	<p>Finding</p> <p>Tribes are increasingly acquiring fee land, some of which is brought into trust, and acquired fee land is often not within the reservation boundaries.</p>	<p>Recommendation</p> <ul style="list-style-type: none"> ■ Clarify the relationship between BIA and tribes with respect to acquired fee lands. Allow tribes to integrate management of trust and fee forestlands, and co-management agreements into a single FMP.
<h2>H3</h2>	<p>Finding</p> <p>State and federal lands occur within reservation boundaries, and co-management agreements, land exchanges, stewardship agreements for management of lands within the reservation and adjacent to it are increasingly common.</p>	<p>Recommendation</p> <ul style="list-style-type: none"> ■ Review existing federal requirements pertaining to FMPs for Indian forest lands and implement reforms which will accommodate the full range of ownerships and agreements.
<h2>H4</h2>	<p>Finding</p> <p>Centralization of wildfire suppression programs (national and regional control of allocation of resources) has had serious negative impacts on tribal ability to respond quickly at the local level and keep fires small.</p>	<p>Recommendation</p> <ul style="list-style-type: none"> ■ An independent review is needed of the of federal rules and policies which restrict use of local fire suppression resources, especially for initial attack, and the process for allocation of national resources for fire suppression on Indian lands. ■ In furtherance of the principles and purpose of the recent (June 2021) MOU between the DOI Office of Wildland Management and ITC, reforms should be proposed which will result in dedicated initial attack resources and more effective response to wildfires. Response should be focused on use of local resources and suppression while fires are small.

Task H Findings and Recommendations

H5	Finding Fire suppression tactics implemented by Incident Management Teams (IMTs) are destroying thousands of acres of Indian forest land. <ul style="list-style-type: none">■ These outside teams with no direct relationship to the reservation land and resources are risk averse and often prefer indirect attack using backfires far from the fire front.■ This often results in the destruction of many acres of tribal forestlands that did not need to be burned to contain the fire.	Recommendation <ul style="list-style-type: none">■ Assess reform options for changing command structure, tribal liaison, and the decision-making process to include greater tribal participation when IMTs are deployed to wildfires on or near Indian trust lands.■ In delegating authority to IMTs, tribal leadership should be allowed to include provisions which consider unique tribal values and a higher-level requirement for protection of trust resources.
H6	Finding The need for Burned Area Emergency Response (BAER) funds has increased significantly due to more frequent and larger wildfires on Indian lands but funding is insufficient and there are barriers to administering funds. <ul style="list-style-type: none">■ BAER funding is often insufficient to meet emergency needs. Burned Area Rehabilitation (BAR) funding comes too late.■ The policies and procedures for administering these funds are not aligned with the timing needs for project implementation.■ The BIA seems to only have two staff dedicated to these processes.	Recommendation <ul style="list-style-type: none">■ An independent review of the adequacy of BAER and BAR funding and staffing for Indian lands is needed and necessary actions taken to ensure sufficient funds are allocated to fulfill the Secretary's trust responsibility and NIFRMA's statutory objective of maintaining Indian forest land in a perpetually productive state.■ Reform policy and procedures for administering BAER and BAR funds to align with project implementation requirements.
H7	Finding Some tribes express interest in selling timber using direct log sales instead of selling stumpage. <ul style="list-style-type: none">■ BIA's timber sales policies and procedures are designed for stumpage timber sales unless the tribe has established a tribal forestry enterprise under CFR 163.13. BIA's process for creating and securing approval of tribal enterprises can be overly complex and involve multiple reviews and delays.	Recommendation <ul style="list-style-type: none">■ BIA forestry regulations and policy restricting delivered log sales need to be reviewed and reforms implemented to facilitate timely creation of forestry enterprises or other acceptable processes for log sales. BIA needs to improve communications to provide other current options for log sales.

Task H Findings and Recommendations

H8

Finding

At some locations the use of paid permits has increased and they also better fit tribal needs for selling small quantities of timber than the use of more complex contract timber sales.

- The \$25,000 annual limitation on paid permits for a single entity has not been increased to keep up with inflation. Under the 25 CFR §163.26 regulations, the Secretary has discretionary authority to establish stumpage value limitations for paid permits.

Recommendation

- The current paid permit limitation should be increased to allow for inflation and to better meet current needs for commercial timber harvest using this authority.
- The Secretary, or delegated official (ASIA), should issue a policy directive authorizing an increase in the annual stumpage value limitation on paid timber permits and providing for future inflation adjustments.

H9

Finding

Tribes carrying out forest management activities under ITARA are performing functions previously considered inherent federal functions performed by the BIA.

Recommendation

- Funds retained by the DOI/BIA for performing functions previously considered inherent federal functions but now carried out by ITARA tribes should be made available to the tribes.
- This reform would shift funds from the BIA to the tribes who are actually performing the functions and provide additional funds for tribes to achieve tribally defined state-of-the-art forest management.



The IFMAT team discussing funding and reforms for improvements on stream crossings with Penobscot forestry staff in Maine. PHOTO CREDIT: VINCENT CORRAO

Task H Findings and Recommendations

<h3>H10</h3>	<p>Finding</p> <p>At most locations, tribal staff are fully engaged in carrying out ongoing forestry operations and lack capacity to take on new initiatives even if those initiatives will streamline processes and result in more cost-effective program execution.</p>	<p>Recommendation</p> <ul style="list-style-type: none"> ■ The BIA regulations for the self-governance programs should be revised to provide grant funding to help tribes to participate in the ITARA Demonstration Project and prepare an ITAMP. ■ If providing grant funding under the self-governance program is not possible, other sources of grant funding should be identified and information provided to tribes about how to secure needed funding to participate in the ITARA Demonstration Project.
<h3>H11</h3>	<p>Finding</p> <p>Funding has trended to favor nonrecurring project funding rather than recurring funding that supports stable tribal capacity to carry out long term forest management. Costs of management increase over time, but recurring funding has not kept up with inflation.</p>	<p>Recommendation</p> <ul style="list-style-type: none"> ■ Recurring and nonrecurring funding needs to be increased to levels commensurate with federal neighbors. Reform the system of funding so that “project” funding comes to tribes for the broader “Forest Management Activities” as defined in 25 CFR 163 and ITAMP tribal forestry regulations, rather than narrow and more specific criteria.
<p><i>“The Federal government loves reactive funding.”</i></p> <p>—IFMAT IV focus group participant</p>		
<h3>H12</h3>	<p>Finding</p> <p>Tribes performing forest management activities under P.L. 93-638 and ITARA authorities are not required to comply with BIA manuals and handbooks.</p> <ul style="list-style-type: none"> ■ With the majority of tribes transitioning from BIA control and administration to direct tribal operations in management of trust forest lands, the BIA manuals and handbooks that provide process and standards for fulfillment of the trust responsibility are no longer relevant. ■ Trust standards and evaluation process needs to be reformed. 	<p>Recommendation</p> <ul style="list-style-type: none"> ■ Review the process to evaluate fulfillment of the trust responsibility in the context of direct tribal operations under P.L. 93-638 and ITARA authorities. ■ Trust standards need to be clearly defined, focused on the tribes’ vision for their forests, and include a process for trust oversight.

Task H Findings and Recommendations

<p>H13</p>	<p>Finding</p> <p>Many tribes have lost the manufacturing infrastructure necessary to support Forest Management Activities on reservation lands.</p> <ul style="list-style-type: none"> ■ The same lack of infrastructure limits the ability of tribes to effectively implement landscape scale co-management activities on neighboring Forest Service and BLM lands. Infrastructure investments are limited because tribes cannot secure seed funding and long-term management contracts with federal agency partners. 	<p>Recommendation</p> <ul style="list-style-type: none"> ■ Extend contracting periods for the USFS and BLM to provide tribes the ability to secure long-term supply of forest harvest/ biomass material. ■ Conduct an independent review of start-up funding requirements to establish long-term landscape scale TFPA/GNA cross boundary projects.
<p>H14</p>	<p>Finding</p> <p>In light of increased self-governance for tribes, the founding DOI documents for BIA forestry are potentially outdated.</p>	<p>Recommendation</p> <ul style="list-style-type: none"> ■ Update BIA forestry documents and structure to address new authorities and procedures for tribes to directly carry out forestry program functions.
<p>H15</p>	<p>Finding</p> <p>Maine tribes are geographically removed and not served well by the BIA Eastern Regional Office.</p>	<p>Recommendation</p> <ul style="list-style-type: none"> ■ Maine tribes should be serviced by the Midwest Regional Office.
<p>H16</p>	<p>Finding</p> <p>Tribes do not have the opportunity to be treated as other landowners under the ESA and this can result in additional costs of management as well as unfunded mandates.</p>	<p>Recommendation</p> <ul style="list-style-type: none"> ■ Congress should conduct a review to identify if tribes should have the option of being treated under the same rules as other landowners or be compensated for unfunded mandates.



Replanting success in a burned area on the Yakama Indian Reservation in Washington state.

PHOTO CREDIT: VINCENT CORRAO

TASK

I

An evaluation of tribal climate risk and adaptation to climate change (for forests and forest operations)

Overview

Climate change has become an increasingly important issue in Indian forestry since IFMAT III. Evidence, both scientific and experiential, has amassed to show how the changing climate is affecting the growth, mortality, and composition of forests and the ecosystem attributes and services upon which people depend. The range and scale of impacts have grown greatly. Changing weather patterns are imposing new threats to important species of trees and other plants, wildlife, and cultural resources. Drought, flooding, insects, diseases, and wildfire are affecting Indian timberlands and woodlands. Tribes are adjusting forest plans and practices to deal with climate changes and the additional costs, logistical constraints, and other management challenges for forest ecosystems and forestry programs.

While Federal responses to climate change have reshaped agency priorities and created new programs and institutional arrangements (see Tasks A, E, G, H, J and K), questions have arisen about how federal trust obligations to tribes are being implemented. Improvements in availability, effectiveness, and flexibility of federal financial and technical assistance as well as access to rapidly evolving science-based guidance will be necessary to assure that tribes can successfully adapt to climate impacts and



Ponderosa pine seedling planted in Creek Fire scar as part of a reforestation project at San Carlos Apache PHOTO CREDIT: SERRA HOAGLAND

capture opportunities during this transition.

Much of the response and preparedness assistance for climate change has and will continue to reach tribes through existing programs and authorities which must themselves adapt to growing speed and breadth of climate's impacts on forests and forest management. Substantial

new federal investments in climate response will occur through the Bipartisan Infrastructure Law (BIL) Public Law No. 117-58 (2021) and the Inflation Reduction Act (IRA) Public Law 117-169 (2022). At this writing, multiple agencies have begun to implement provisions of the BIL and IRA providing millions of dollars to tribes for climate-related actions,



A fuel break project with partnership in part from Chugachmuit in Alaska. PHOTO CREDIT: TIM VREDENBURG

including natural resource management investments. Summaries of the programs of interest to tribes are available in resource guides from the Senate Committee on Indian Affairs for the (US Senate 2021) and the IRA (US Senate 2022). Additional information is available from the White House (2021 and 2022) and from departments in charge of programs listed in the guides.

Tribes that can clearly articulate and justify their overall investments and work with multiple federal agencies each with specific funding and specifications, will be more successful in the various programs supported by these two new laws. However, the efficiency

and effectiveness of this new funding may still be limited by policy and program level issues such as those being pointed out in multiple task chapters in this report.

The rate of climate change and the range of observed impacts on forests and tribes have increased since IFMAT I (Jantarasami et al. 2018) and (Vose et al. 2019). Resources that depend on forests – water supplies, wood products, wildlife, energy, and recreation, as well as human health and cultural and spiritual values, are being affected in extreme ways that vary widely across the country. For many tribes, forests are key assets for assuring adaptation in social, economic, and cultural

dimensions. Multiple examples have emerged of how climate change exacts disproportionate social, economic, and cultural impacts on tribes, in part because they are often limited by scarce resources, mobility, and access to information. To echo IFMAT III findings, “Forestry programs that are underfunded, understaffed, or poorly connected to expanding sources of information and assistance will not be able to adapt well.”

The IFMAT IV team did not explore the range of impacts and implications of the changing climate across the country or the complex interactions among biological, physical, and social dimensions. Climate change

affects many biological processes such as the role of trees in hydrologic processes such as fog capture, moisture retention, filtration, terrestrial and aquatic insect production, pollination, nutrient cycling, disease, food webs, and mycotoxins. Soot and smoke from wildfires impact the health of humans. Phenological changes affect availability of traditional foods and medicines, and species shifts and displacements are affecting abundance and productivity within tribal gathering areas. Explicating these and many other interactions was beyond the scope of IFMAT and the team deferred to the expansive literature on climate impacts and the range of future change pathways in different geographic regions, and ecological and social systems.

More important to Task I was how tribes found access to knowledge and expertise about these effects and how they were able to apply that knowledge to the sustainable management of tribal forests. Landscape, regional, and national vulnerability assessments are excellent sources of information to set the context, especially when linked to tribal level assessments of vulnerability for specific resources of value to inform important choices, including the extent and nature of landscape partnerships to pursue.

The state of the science and knowledge about the interactions in systems around tribal forests and communities has shown that the important central question of climate response is how to sustain stewardship across the landscape and over the long term. The planning and decision-making frameworks of NIFRMA and the key questions of earlier

IFMATs may not provide the appropriate scope to address the expanse and complexity of the climate influence on tribes. This scale mismatch was one of the reasons ITC added the climate, landscape ecology, and landscape management capabilities tasks.

Impacts and adaptive strategies for assessing and managing vulnerabilities to climate change of different systems, species, and human values is rapidly expanding. That knowledge is helping build a better base for adaptive decision making which can help tribal forests and forestry programs wrestle with changing arrays of risks, opportunities, and tradeoffs. That can only happen if forest managers, tribal leadership and citizens can effectively acquire knowledge and skills and attract investments to address new challenges.

New policies for decarbonization such as advancing renewable energy and pricing carbon through market-based mechanisms have created opportunities for tribes. Some have developed climate action plans that combine adaptation, greenhouse gas reduction, and forest carbon sequestration at the tribe-level or in collaboration with other tribes or non-tribal partners. New roles for forestry programs in these larger climate response efforts are now being defined for forest-owning tribes throughout Indian Country.

In asking IFMAT IV to pursue Task I, the ITC recognized climate change as a pervasive and growing driver of forest management context and challenges rather than a singular issue that can be addressed in isolation. It has at least some influence in all the dimensions

of the NIFRMA mandates either through impacts on the forest or in shaping the responses by the forest to management actions. The ITC wanted IFMAT IV to make recommendations on how to better interpret and evaluate the forest and forestry roles in tribal climate response. The IFMAT IV team has framed this task to position climate change as a driver of impacts, threats, and opportunities and an increasing compelling factor to consider in forest strategies, plans, operations, and landscape scale partnerships. Because dealing with climate change has already begun to reshape private and public resource allocations (e.g., fire management costs) and institutional emphases (e.g., social and environmental equity), IFMAT IV wanted to assess the ability of tribal forestry to apply the concept of resilience into the body of forest practices to meet tribal forest visions through a dynamic future.

Approach and Methods

Reviewing Plans

The IFMAT IV team searched for information and examples about how tribal forestry programs incorporated climate change into their planning and decision making. The team built this inquiry around summaries of major impacts and risks to forest ecosystems and forest operations being experienced by all forest landowners and special impacts noted by tribes in their tribal-level climate action plans. IFMAT IV reviewed FMPs, IRMPs, and Stewardship Plans for the 41 IFMAT forest-owning tribes selected for study of evidence of climate change treatment, and reviewed tribe-level climate

action plans for the role of forests and forestry in in the wider range of climate concerns. IFMAT IV identified available federal and non-governmental guidance and technical assistance for developing these plans and actions and the linkages between forest planning and tribe-level planning.

The team also curated examples of individual actions that might form a nucleus for standards for adaptation planning to address climate vulnerabilities for individual values or services provided by forests. The team separately reviewed forest carbon agreements and forest carbon plans (see section below).

Assessing Adaptive Capacity

Most tribes that have stated goals for dealing with climate change that characterize those goals as sets of actions to maintain resilience. Resilience is the ability of a social or ecological system to absorb change while retaining structures and ways of functioning, the capacity for self-reorganization, and the ability to adapt to stress (IPCC 2007). Resilience comes from proactively managing a range of important vulnerabilities by reducing exposure to stressors, reducing sensitivity of the resource or value, and/or increasing adaptive capacity. Adaptive capacity in this sense is the ability of the tribe or its forest resource or forestry program to withstand disturbance and retain, recover, or transform important functions. Climate adaptive capacity is shaped by many factors. From studies of adaptive capacity, the team identified several key factors:



A fire break for the Mescalero Apache Tribe in New Mexico.
PHOTO CREDIT: GEORGE E. SMITH

- Financial resources – nature and level of investments targeted to climate risks.
- Institutional effectiveness and flexibility of intratribal social and political systems as well as the effectiveness of agency programs to implement federal trust responsibilities.
- Policies through which the tribe operates (e.g., self-government and federally sponsored programs) and their compatibility with the scale and rapidity of impacts being introduced by the changing climate.
- Capacity of management and technical staff.
- Nature and strength of relationships (intertribal, agency, landscape neighbors, and service providers).
- Access to technology, information, and expertise to stay current and translate science findings.
- Access to markets that will enable adaptation and carbon management actions.

- Management strategies based on systematic assessments of relative risks to key resources and values. These strategies are:
 - Codified in plans (e.g., forest management plans and IRMPs) that are effective enough to support action and flexible enough to be adjusted when climate risk profiles change.
 - Supported by knowledge systems that diversify and integrate traditional, experiential, and scientific knowledge about climate impact into education, public information, financial, health, and professional development.

Climate Changes and Impacts on Forests and Forestry

Climatic changes and their impacts on forests, forestry, and communities have increased rapidly since IFMAT III. Global, annually averaged, surface air temperature has increased by about 1.8°F (1.0°C) since 1901. Annual average temperature over the contiguous United States has also increased by 1.8°F (1.0°C) based on a linear regression for the period 1901–2016. This period is now the warmest in the history of modern civilization. Sixteen of the warmest years on record occurred in the last 17 years (Wuebbles et al. 2017).

Wildfire extent and intensity is increasing throughout the US. The area burned is expected to double by the mid-century. Mortality is increasing in older forests, especially those already experiencing soil moisture stress. In the West drought exacerbates the interactions of stressors leading to higher tree mortality, slower regeneration, and shifting

combinations of plant species that may result in changed and possibly novel forest ecosystems. Species habitats are shifting, generally moving up in elevation and northward in latitude. Tree growth and regeneration will decrease for some species, especially near limits of their range. Insect infestations are expected to affect greater areas than wildfire. Invasive species are becoming more widespread, especially after disturbance in dry forest types. Flooding, erosion, and sediment movement is increasing from fire disturbance and downpours in steep areas. Eastern forests are receiving more precipitation and serve as carbon sinks while forest ecosystems in eight western states have transitioned to become net carbon sources because of wildfire combustion, mortality from fires, pests, and pathogens and the decay associated with these disturbances.

Tribal Impacts and Risks

Tribal forest programs increasingly deal with the cumulation and interaction of climate-driven biophysical, social, economic, and cultural impacts. A decade ago, IFMAT III noted that climate change had already started to influence costs (through fire management), practices (reforestation and forest health), operations (winter logging), and forest values (wildlife populations and culturally important plants), and had begun to stimulate proposals for changes in mandates for federal, state, local, and private sector post-disturbance planning and more comprehensive assessments of losses and follow-on adaptation efforts.

Adjusting forest plans and practices to deal with climate impacts poses additional costs, logistical constraints, and recovery challenges for tribal forests and forestry. In the present and short-term, these measures may represent barriers to achieving state-of-the-art forestry on Indian lands. However, within the larger context of the disproportionate social, economic, and cultural hardships climate impacts will have on tribes these investments in adaptation are essential. This is especially true in light of the already limited resources, mobility, and access to information that tribes face.

Maintaining forest health and regeneration success may be one of the more powerful tribal assets as inequities are amplified as the rate of climatic change accelerates.

Coping with social, economic, and cultural vulnerabilities, and the growing awareness by tribal members regarding the associated values at risk, emphasizes the importance of a dynamic, open, and engaged planning process. The range of different approaches to climate planning varied widely in IFMAT’s sample of tribes. Some could serve as laboratories and demonstration areas for exemplary adaptation through active forest management. Despite relatively scant finances, resources, and technical planning, climate information sharing between natural resource staffs and other tribal offices as well as tribal member engagement, has been very efficient and creative. In other cases, limited capacity and access to information, tools, and expertise have hindered efforts.

Following Up on IFMAT III Recommendations

When NIFRMA became law in 1990, awareness of climate change and its related impacts was only emerging. Consequently, climate change was not directly addressed until IFMAT III, when ITC asked the team to evaluate tribal risk and vulnerability as an additional task. Summarized below are climate change findings and recommendations of IFMAT III followed by the IFMAT IV qualitative assessment of the progress made in the last 10 years.

Findings

IFMAT III found that managers of tribal forests were already observing the impacts of the changing climate and recognizing the implications on the prosperity and cultural preservation of the tribe and the condition of the forest resource. Some tribes were starting to build climate into practices but few, if any, had integrated climate into forest management planning. The importance of landscape-level collaborations and tribal resource management's unique roles in these partnerships were becoming increasingly clear.

The potential growth of intertribal organizations was being recognized for (1) organizing active practice responses to climate, (2) participating in landscape scale responses, and (3) getting access to science-based information and tools about resilience or forest and woodland carbon. However, the capacity to participate and pursue these leveraged efforts was a primary barrier. Forest-owning tribes had not been successful in getting new climate

change funding in the 2009-2012 period. Competitive government resilience and other programs were structured more to support individual vulnerability assessments and tribal plans than for capacity building or implementation of practices to be converted to climate-informed response measures.

Recommendations

1. Develop processes and criteria to assure a more equitable distribution of funding for federal funding of climate change response.

The total federal funding for tribal climate response grew during the IFMAT III inquiry period as many agencies expanded or initiated new programs and emphases. Yet, despite increasing scientific evidence and traditional knowledge validation of negative climate impacts on tribal forests, there was very little increase in dedicated funding for tribal forest adaptation.

IFMAT III found that tribes had not been successful in accessing new and redirected federal funding for climate change during 2009-2012. In 2012, for example DOI received \$175 million in climate funds for their Landscape Conservation Cooperative (LCC) program, yet BIA received approximately \$225 thousand despite their federal tribal trust obligation for lands that account for 10% of DOI's land base.

The BIA Climate Resilience Program has matured its funding program process and criteria. It has received increased if not adequate

funding to address the range of tribal climate response needs. Most of the funding has been directed at multiple-resource adaptation planning. Forestry must compete in this growing set of needs and must find funding for climate-informed practice implementation in forest conservation and stewardship programs in other agencies and departments.

Note: Recently passed Infrastructure Investment and Jobs Act (BIL 2021) and the Inflation Reduction Act (IRA 2022) substantially increased funds available for climate-informed investments with specific programs for tribes and larger scale program grants open to tribes. Many of the programs in DOI, USDA, and other agencies are directed to forest management and protection assistance and climate response. IFMAT is following the implications for these funding streams for tribal forest management.

2. Require all regional and national assessments of forest resources to include an assessment of the condition and trends of Indian forest lands under a range of future scenarios.

This has not been done. Existing national assessments such as the Resource Planning Act (RPA) Assessment contain Indian forest lands, but do not provide separate detail on their condition and future trends (US Department of Agriculture Forest Service 2022). The BIA Division of Forestry (DOF) annually submits a report to Congress on the status of forests on trust land, including management,

harvesting volumes and values, and reforestation needs, but this has not included forecasts or references to climate and disturbance trends or carbon stocks and fluxes (US Department of the Interior 2020). Some tribes and intertribal groups have developed climate action strategies based on downscaled climate projections, but there have been no requirements, guidance, or standards issued to assure comparability or scientific validity.

3. Encourage the exchange of traditional ecological knowledge and Western scientific knowledge in planning and adjusting to climate change impacts, recognizing the unique strengths that each form of knowledge brings.

There is a growing awareness of the role of traditional knowledge in climate response. Important steps forward are outlined in the recent Status of Tribes and Climate Change Report (STACC) of the Institute for Tribal Environmental Professionals (ITEP, 2021). The ITEP Climate and Traditional Knowledges Workgroup (CTKW) of ITEP has also produced Guidelines for Considering Traditional Knowledges in Climate Change Initiatives (ITEP 2014). Some tribes have woven traditional knowledge into their assessments of vulnerability, combining insights into their assessments of risk and management response. In 2021, the White House released new government-wide guidance for federal agencies on recognizing and including Indigenous

Traditional Ecological Knowledge in federal research, policy, and decision making, following the 2021 Tribal Nations Summit (White House 2021).

4. Require federal agencies to better coordinate interagency delivery of science findings, technical and financial services to tribes.

There has been much progress on this front with the growth and maturation of federal and state government science delivery programs as well as intertribal and NGO

programs to give tribes access to science findings and tools. The coordination among these entities through regional partnerships among DOI/USGS Climate Adaptation Science Centers (Department of the Interior 2023), USDA Climate Hubs (US Department of Agriculture 2023), NOAA Climate Adaptation Partnerships (formerly RISA'S) (US Department of Commerce 2022), and university programs and have cadres of tribal liaisons to work directly with tribes and intertribal groups. Regional and national



Tribal forestry staff and IFMAT members observe fire damaged landscapes during a site visit to the Colville Reservation in Washington state. PHOTO CREDIT: GEORGE E. SMITH

intertribal organizations, including the United Eastern and Southern Tribes (USET) and ITC, have advanced well in aiding delivery and advocating for more relevant science and delivery. Some tribes and intertribal organizations have partnered with the BIA Resilience Office to support tribal liaisons at the DOI Climate Adaptation Science Centers. Numerous coalitions, networks, and other organizations have emerged and/or strengthened through intertribal collaboration, university, tribal college, and agency sponsorship devoted to

assisting tribes in responding to climate change. Many of these have been used to start the processes of planning for climate response at the tribal government level, but most forestry programs have not engaged with them for lack of capacity in the forestry program.

Coordination of financial and technical services has made less progress and tribes still must devote large portions of capacity in competing for technical services and funding.

5. Provide technical support for tribal assessments of

climate-driven vulnerabilities towards incorporation of this information into forest planning and management processes.

The availability and quality of technical support have improved greatly, more so for wildlife, water, human health, infrastructure, social and cultural vulnerabilities than for forests and forestry. Guidance issued from BIA has come through its Tribal Climate Resilience program (Department of the Interior 2023) that has grown to link tribes with high quality information on climate response practices and to provide funds for climate action planning. Currently BIA Forest Inventory and Planning (formerly the Bureau of Forest Resource Planning) does not provide technical services for climate integration in planning

“The land and people have experienced great change over the last 150 years versus the last 10,000 years.”

—IFMAT IV focus group participant



Boulder placement used for stream restoration by the Houlton Band of Maliseet Indians in Maine.

PHOTO CREDIT: TIM VREDENBURG

to supplement its other forest planning and analysis services.

Tribes need better access to relevant science-based information about the impacts on local forests, management options, and the carbon sequestration value of their forests. Intertribal organizations have performed important services in helping some tribes acquire tools and understand and use key science findings, but the level of demand for services has outstripped program delivery capacity and most tribes' human capacity to fully adopt these products and tools.

6. Incorporate adaptation planning into the IRMP and FMP planning processes of tribes using a template that integrates traditional and scientific knowledge.

This was aligned with other IFMAT III recommendations such as shifting to a desired-future-conditions based approach, better inventory data, more technical support for forest planning, recognizing, and accounting for natural processes, more extensive use of the IRMPs, and integrating woodland management considerations into tribal FMPs. The links among the IFMAT III tasks and its climate questions showed that the improvements together could create a stronger platform for bringing planning and field implementation to better address the rapidly and constantly changing interactions of climate change.

BIA has not issued policies or other forms of guidance on incorporation of climate into

the FMPs or IRMPs. IFMAT III made a case for using forest management plans to address climate change and integrating climate information and scenarios into plan components and strategies. However, few tribes have yet to incorporate climate change into their forest management plans, despite a growing network of available assistance, the growth of climate adaptation and restoration coalitions, and a growing body of practice and lessons being learned about developing adaptation strategies. The team found little progress in integration into formal plans, in part because few plans have been revised during the period.

Some of this reluctance stems from the absence of guidance and technical service capacity for trust lands. The absence of planning was not because the forestry staff did not accept the scientific evidence of climate change or felt that it was not important. During IFMAT IV tribal visits, the team observed forestry managers and tribal leadership more readily accepting the inevitability and implications of a rapidly changing climate and including them in discussions about their forest management strategies. There has been exemplary work by some tribes and intertribal groups in tackling individual impacts through vulnerability assessments and the application of silvicultural strategies. Some tribes were attempting to build climate adaptation into their forestry programs and practices outside of any formal planning process (Tribal Adaptation Menu Team 2019).

The hope of IFMAT III was that tribes could become key players in landscape scale partnerships and in implementing practices to manage climate vulnerabilities. Although institutional arrangements and tools such as the Tribal Forest Protection Act, the Good Neighbor Authority, Collaborative Forest Landscape Restoration Act, and other programs were relatively new at the time and associated more with forest health improvements than longer-term climate change adaptation. Little of the financial assistance available can be used for implementation of plans or for pioneering climate-informed management actions. Most was aimed at planning and assessment and to non-forestry resource concerns such as wildlife, biodiversity, water, human health, and other concerns. Perhaps the funds being allocated at this writing will stimulate more systematic planning and adaptive implementation to bring tribal forestry operations into the mainstream of climate-informed management.

Observations during the IFMAT IV process confirmed that many of the issues described by the IFMAT III team were still present during the 2009-2019 period. Some progress has been made, but all of the recommendations deserve a second reading and incorporation into a new plan of implementation given the rate of change in climate factors and a current funding environment more favorable to both climate response and active forest management. Linger structural and policy issues will have to be addressed before climate-informed forest planning and practice can be fully implemented and integrated into

tribal, intertribal, and landscape scale strategies. These issues are outlined below.

Lack of policy emphasis and guidance

Some tribal forest management programs have begun to incorporate tribal multiple-risk management and contemporary thinking about climate issues into planning and implementation. Much new science has been developed about forest health and disturbance, the role of the changing climate as well as forest density and composition management in ameliorating the impacts of interacting stressors. Climate is being worked slowly into national programs, initiatives and funding for fire, forest health and other climate-driven risks. Despite agency and some tribal claims of climate resilience emphasis and some success stories, it is difficult to identify climate response objectives or outcome measures in agency activity reporting. Although there is energetic emphasis and increased funding in the Tribal Resilience Program, water, fish and wildlife, human health, and economic adaptation strategies, BIA's forestry policies and programs show little evidence of climate response guidance or emphasis.

Advances on climate response have been “bottom-up” and difficult to track. Larger tribes have been more inclined and able to develop overarching climate adaptation or action plans that cover multiple climate-driven issues. Some have used the processes and frameworks of the IRMP to cover influences on the tribal vision and interactions among values and capabilities. The fading

“I don't want to be the witness to see the last fish.”

—IFMAT IV focus group participant

emphasis and participation in Integrated Resource Management Planning (see Task F) may have discouraged tribes from organizing to address a similar breadth of issues and interactions and perceived climate planning to be even more difficult or duplicative. Tribes with active IRMP and FMP processes seemed to find addressing climate impacts less overwhelming and could more easily recognize the importance of climate impacts and responses to multiple values. Policies that have discouraged FMP revision may have discouraged tribes with severely limited planning capacities from taking on climate impacts for fear of becoming overwhelmed. Some of these tribes purposely limited responses to climate in their planning for specific disturbances such as fire and specific practices such as prescribed burning, having to defer more comprehensive yet more cost-effective approaches to resilience building.

Coordination and availability of climate change funding

Tribes have been caught until recently between competing general climate change funding programs with relatively little being offered for forests and forestry and/or tribal topics. Conservation assistance programs administered by BIA and other DOI agencies and the Forest Service, NRCS, and other USDA agencies programs have addressed forest practices and infrastructure improvement needs for many years, but the

roles and priorities for climate adaptation have not been clearly defined in program guidance and budget allocation. Only recently have these programs included climate response in their stated objectives and priorities. Even for programs directed to climate response, such as BIA's Tribal Resilience Program, little funding has been directed at improving forestry “nature-based solutions” of climate-informed forest plans.

It is not possible at this time to estimate the total funding needed from all sources to address the tribal forest climate responses as so few tribes have made comprehensive vulnerability assessments and adaptation plans. Also missing is the proportion of agency and external funding that might be available for helping tribal forest managers fill these needs. Much of this funding is competitive, scattered across multiple agency sources, smaller scale, and non-recurring, making it difficult and costly for tribes to grow reliable funding streams at large enough scales. Some of the grant application processes are prohibitively complicated and pose multiple restrictions. Most of the climate dollars have been focused on making ecological, wildlife, and water resilience investments with little opportunities to bring in forest program issues. In some cases, the forest managers felt that access to these dollars would mean that the forestry program would have to pay for so much of the work as to starve other important actions.

Capacity for building climate response into forestry programs

There are clear gaps in most tribal forest programs' capacities to fully integrate climate information and science-based models. There are few funding or training programs to support hiring and/or developing staff. The demands of implementing the existing forest management programs and responsibilities while responding to rapidly expanding fire management and fuels needs, reforestation backlogs, and competing for grants funding have not allowed for hiring, training, and developing expertise in forest-climate interactions.

Access to science and problem-solving partnerships with the research community

Some tribes described erosion and breakdowns in the working connections between the forestry program and the research community. Some federal researchers are reluctant to get involved in practical management questions and issues for fear of being entangled in political conflict, even if inadvertently. By contrast, tribes that kept close, long-term relationships with members of the research community were quite complimentary and put great trust in their research partners to keep them informed on changes in the science and to help validate and translate science findings.

Many tribes were still not aware of the scaled-up science delivery networks and new collaborations to provide science data and tools. Although each of these programs as well as the Cooperative Extension Service have networks of tribal liaisons, these forestry programs were either unaware of them or did not judge the services



Dead older timber replaced by overstocked young pine on the Yakama Reservation in Washington state. PHOTO CREDIT: VINCENT CORRAO

as relevant to their issues. There is still fruitful opportunity to develop and better coordinate the delivery of climate/forests science and integrate traditional knowledge into options for (1) integrating climate easily into familiar and required planning and management frameworks, (2) addressing tribe-level climate response priorities and vulnerabilities, and (3) compensating for some of the capacity gaps in forestry staffs.

Suitability of forest management and integrated resource plans and planning

processes in preparing tribes for the changing climate

As explained in Task F, BIA guidance for forest plans and planning processes does not address climate change, neither is it discussed in the planning manuals and handbooks. Guidance and priority are needed for trust lands and for non-trust lands, given the rapidly evolving mixed system for self-governance tribes. Many tribes remarked that they do not use the BIA handbooks and manuals very much because they are cumbersome and not regularly

updated. Many self-governance tribes have their own regulations and authorities.

Without uniform guidance it is difficult to pass successful adaptations and lessons to new staff or share them with other tribes. Without clear guidance on climate-informed practice, participation in landscape scale partnerships is more difficult. Shared Stewardship, TFPA, GNA, and other programs are conceivably useful tools in applying landscape scale adaptive strategies and dealing with climate-driven disturbances, but successful implementation depends on close alignment on environmental disclosure standards among members of any such partnerships. Differences can become barriers to landscape level collaboration. Process and paperwork burdens as well as exposure to appeals and litigation that can slow or discourage joint activity.

Changing practices to accommodate climate impacts and risks

The suitability of conventional assumptions, tools, and tenets in current forest management and planning guidance may no longer be suitable for wrestling with multiple, cascading threats and extreme events not represented in their experience or science basis. Managers are recognizing the risks of relying too heavily on these tools and historical data. As they try to fit emerging climate patterns into concepts such as desired future condition (DFC),

historical range of variability (HRV), 10-yr or longer planning cycles, plans revision triggers, and other structures they try to adjust and create new approaches to planning and managing.

Tribes need guidance and mechanisms for testing, accumulating, and disseminating adjustments and innovations. This is a period of widespread experimenting in forest practices as well as water, wildlife, biodiversity, and related resource areas. Innovation as an important element of adaptive capacity is enhanced by sharing of new approaches and lessons learned, but without leadership affirmation and opportunities for connecting, many of these lessons are likely to be lost and never even considered for wider distribution. For example, IFMAT IV observed a number of changes being made by individual tribes in the eastern US in harvest and treatment timing and placement. The adjustments are being made to reduce invasives, accommodate regeneration, and avoid erosion and sediment that was being made more difficult and less effective because of uncertain snow cover. There were no guidelines at the national level to back up or challenge these changes, little available assistance from technical specialists and scientists, and no uniform way of sharing these experiences with other tribes who might want to try and perhaps adopt them.

From the planning and operations perspectives, some tribes have

begun to explore methods that are better suited to dealing with uncertain futures. These methods and approaches address the growing need to evaluate multiple possible futures and seek out and consider disconfirming evidence as challenges in the planning and management processes. There is little evidence that methods such as scenario planning, enterprise risk management, or adaptive management are being integrated into forest planning. As FMPs come into revision, more tribes are asking for help in choosing models and methods from a growing array of options without guidance from multiple, trustworthy sources with similar experiences.

Participation in Carbon Markets

Tribal participation in carbon markets is new to the IFMAT series workstream. Since IFMAT III there has been rapid growth in participation by tribes in carbon markets. This participation has resulted in an important revenue source for some tribes and has placed tribal forests as prominent players in carbon offset markets and with new hopes for tribal participation in expanding voluntary markets. Carbon and other ecosystem service markets could become more important in supporting Indian forests goals, but policy makers should periodically review the experiences, benefits, costs, and risks of earlier entrants in the carbon market for important lessons.

“When working in the forest an offering needs to be given and we need to talk to it as a relative. Drought is nature’s way of reminding us to honor these things.”

—IFMAT IV focus group participant



A rain storm observed during the San Carlos Apache site visit in Arizona. PHOTO CREDIT: SERRA HOAGLAND

The IFMAT IV team analyzed tribal participation in carbon markets as posted in multiple carbon registries, including the Berkeley Carbon Project’s Voluntary Registry Offsets Database (University of California, Berkeley 2023). The team also reviewed published materials about tribal experiences in the carbon market and posed questions to forest program managers and other tribal officials in virtual and on-site visits. The team tried to answer some key questions:

- How important is carbon market participation in the

overall forest management program and in advancing the values of forests for the tribe?

- What are DOI/BIA’s policies about carbon markets and about carbon as a trust responsibility? What policies should be implemented to support the goal of state-of-the-art forestry?
- What is the future of tribal involvement in carbon and other ecosystem service markets?
- What needs to be done to help tribes prepare for this future?

Patterns in tribal participation in the California carbon market

- Most of the participation by tribes so far has been in the California ARB (CARB) compliance program for improved forest management (IFM) project types, beginning in 2013. There has been little involvement in voluntary market carbon or ecosystem service payment arrangements but a growing interest from tribes and potential corporate investors is emerging. There are a few early examples of the kinds of voluntary market arrangements available to

tribes and compatible with tribal forestry goals described by the National Indian Carbon Coalition (2023).

- Tribes account for a substantial portion of the entire CARB program's forest acreage. As of 2021, eleven forest-owning tribes in the lower 48 states and 7 native Alaska corporations and villages were participating in this compliance carbon market. The total tribal acreage enrolled in IFM projects was 1.4 million acres, which accounted for 33% of the total 4 million CARB/IFM acreage. Tribal projects averaged 55,314 acres, ranging from 117 acres to 506,729 acres.
- Tribes accounted for an even larger share of the total carbon credits issued (one credit equals a metric tonne of CO₂). Total tribal offset credits of 62 million accounted for 51% of the 122 million reported credits for IFM projects. The average tribal project credit total was 1.64 million, ranging up to 15 million credits. The average credits per acre for all tribes was 63 compared with 54 for all ownerships. For perspective, this average equates to about .63 credits per acre per year or about \$13 per acre per year over a 100-year commitment at an assumed value of \$20/tonne of CO₂ (caution – these estimates are hypothetical and calculated only to better understand the scale of potential revenue contribution).
- A small number of carbon development companies accounted for most of the tribal acreage and project numbers. Five primary carbon project developers accounted for most of the acreage. Fifty of the 74 individual projects (68%) were developed by four carbon developers.
- About 2/3 of the forest carbon offset payments were paid upfront, the rest as periodic payments for forest growth.
- Because payments in the CARB program depend on maintaining carbon inventory at levels predetermined as “common practice” of good management for a particular ecoregion, the difference between the initial inventory and common practice goal gives an idea of the cushion available for harvesting and treatment before falling below the required stocking. The average initial carbon inventory per project acre was 134 metric tonnes CO₂ equivalent, or almost 150% of the average common practice inventory of 90 metric tonnes, above average for IFM projects and one of the reasons they were eagerly sought.
- All offset projects must set aside a portion of the credits as an insurance buffer against project reversals. Average buffer pool contribution was 16.7%, compared to only 14.4% for tribal projects. Tribal buffer pool contributions totaled 8.6 million credits or 42% of the total program IFM set aside.

Observations and Issues

Forest carbon and Forest Management Plans.

Commitments for carbon agreements and objectives for maintaining or enhancing forest carbon stocks and sequestration are not reflected in forest or integrated resource management plans. Most of the existing FMPs have not been revised since the tribe entered into a carbon market agreement. There is presently no guidance from DOI/BIA on integrating carbon stewardship goals or carbon market participation in forest management plans.

Carbon commitments and forest management.

Because participating tribes entered the market with highly stocked forests, there was little need to institute new management strategies or reduce harvests to build carbon stocks up to “common practice” levels. However, these commitments may have implications long-term for exercising a wide range of forest management options. Some tribal forest staff are concerned about potential conflicts between forest management strategies and carbon commitments. They fear strategies to reduce forest density to manage climate-driven fire, insect, and disease risks that might also reduce carbon baselines and net growth in carbon project acres. Some tribes are concerned that meeting carbon program commitments with high carbon inventories could create higher risks of disturbance damage while

“The forest is on a different timescale than us.”

—IFMAT IV focus group participant

limiting their ability to lower these risks. With 41% of tribal forests in the High/Very-High Wildfire Hazard Potential rating and overstocking being a major threat (see Task B), IFMAT IV shares this concern.

Participating tribes are building carbon stewardship into their forest management strategies and perceive flexibility in pursuing their forest management goals, but these approaches have not yet been woven into their longer-term plans and documents. Since most plans do not consider either climate

change or carbon stewardship, the growing influence of fire and other climate-driven disturbance and the implications of carbon management goals and forest condition interactions have not been formally linked in management goals, silvicultural strategies, AAC calculations, or other elements of the Forest Management Plans. Neither do these plans account for restrictions or practices prescribed in CARB contracts such as the maximum sizes of even-aged management treatments areas.

Forestry programs and market participation.

Among participating tribes, there are differences in the nature and level of involvement of the forestry program in planning and making carbon market arrangements. In some cases, the carbon arrangement was initiated and negotiated between tribal government, the carbon developer and buyer without substantial involvement by the forestry staff or detailed consideration of long-term forest management goals and strategies. Because a carbon



A debris barrier gate, one of many structures placed to control erosion following the 2011 Las Conchas Fire, Santa Clara Pueblo. PHOTO CREDIT: JOHN SESSIONS

inventory and impacts of climate change on future growth and mortality had not been part of forest management and planning processes, some forestry programs were not fully prepared, even if involved, to weigh in on the carbon commitments being made.

Revenues and costs.

From the records, it appears that tribes have been receiving carbon prices and contract terms that are comparable to non-tribal owners, although IFMAT did not conduct a thorough analysis of this question. The uses of carbon market revenue varied across participating tribes. It is unclear how much is being reinvested to support forest management, regeneration, or protection of lands and resources.

Tribes have reported that revenue from market participation has been used to increase tribal investment accounts, reinvest in tribal infrastructure, increase services to members, invest in improving energy use and efficiency, and providing seed funding for other cultural and natural resource initiatives. Several tribes have dedicated carbon revenue into purchasing forest lands, within their ancestral territory and therefore expand their forest ownership and diversity beyond their trust lands in an overall strategy of self-government. They saw this use as a positive contribution to their tribe's vision to fortify the resource base and to provide management opportunities and flexibility beyond their trust lands.

Tribes have also reported other benefits of market involvement, including incentives for maintaining long-term

management and retaining forest land use, progress in creating new jobs, and the opportunity to advance tribal self-determination by providing independent sources of revenue.

Some tribes raised questions about the costs of verification, monitoring, and additional inventory. Of special concern were the total costs (direct, indirect, and opportunity) of using limited human capacity to assist in verification and inventory processes. Several tribes questioned the level of carbon credit set-asides necessary to insure against project reversals and leakage. Market participation barriers exist for tribes with smaller forest ownership in the current market structure. Some tribes have considered but declined market participation because of high transaction costs, verification demands, long term commitments, incompatibility with tribal goals, and other factors. Several tribes are looking into forming a collaborative to reduce per unit costs and market forest carbon, water, and other environmental credits together.

Future of carbon market participation

The BIA Division of Forestry and Wildland Fire Management Office of Trust Services published a partial clarification of carbon sequestration policy in the fee-to-trust process (US Department of the Interior BIA 2022). The policy reiterated that carbon is not considered a trust asset because it is neither "harvested" nor "extracted" and therefore not a "forest product." Unlike trust assets, the value of the forest sequestration comes from its ability to store carbon rather than remove it.

The policy states that BIA and the Office of the Solicitor will review carbon agreements to determine if they are subject to Secretarial approval. Agreements that do not restrict use of the land but only require the tribe to manage the land to earn credits do not require recordation. The review will assess whether the agreement requires actions that are inconsistent with the existing forest or natural resources management plans. Only agreements that encumber trust lands for seven or more years, or give control to a third party, require Secretarial approval. Tribal forest carbon management actions must be consistent with the tribe's management plan(s), regardless of the requirement for approval. Tribes may add allotments to carbon agreements if they are included in a tribe's approved resource management plan(s). According to this guidance, the tribe will supply the BIA Line Officer with an assessment of effects, including financial, of carbon sequestration management activities outlined in the carbon sequestration agreement and in the current IRMP and/or FMP. If agreement activities conflict with an approved management plan, the tribe must revise and resubmit the plan to address the new management priority. Carbon agreements are not allowed to interfere with the protection of trust assets, for example in the use of fire suppression actions where timber may be burned to reduce fire damage.

BIA's policy maintains the view that carbon sequestration is not a trust asset and therefore largely outside BIA oversight unless there is a clear encumbrance on other land uses. This view allowed

active entry into the carbon market in early years. Opinions vary about whether the absence of a more proactive and universal policy may act as a source of uncertainty that suppresses participation in new compliance and voluntary markets. The National Congress of American Indians (NCAI) has called on the Department of the Interior to treat the revenue from the sale of carbon offset credits as “trust funds” as defined by 25 CFR Section 115. NCAI (2018). Some tribes feel that a more hands-off posture for both carbon markets and silvicultural guidelines and tools for integrating carbon stewardship into silvicultural and harvesting strategies and forest plans could put trust lands at a disadvantage in emerging and increasing competitive markets. Others prefer the status quo and the absence of oversight by federal authority.

New opportunities for tribal carbon offset projects are developing with the state of Washington’s new Climate Commitment Act (CCA) (State of Washington 2023a), which is similar to the California program but with a special category of projects for federally recognized tribes and with new grant programs—a Tribal Carbon Offset Assistance Grant (State of Washington 2023b) that provides funding for tribes to plan, design, and assess the feasibility of carbon offset projects, and a Tribal Consultation Grant (State of Washington 2023c) that provides funding to tribes to consult on how CCA auction revenue is spent. The CCA

allows negotiations on the issue of required waivers of sovereign immunity, unlike the California program’s blanket requirement.

Prices for carbon offsets have been historically low but have risen with reentry into the Paris Climate Accord and are projected to rise ever more as voluntary markets grow. The long-term implications of higher prices relative to timber values may create sharper tradeoffs between carbon and timber goals, and in adopting carbon friendly adjustments such as extending rotation ages or lowering harvest levels. So far tribes have found the two goals compatible, even complementary, as more tribes express interest in emphasizing non-timber goals in their management strategies (see A1, F2).

There is also a rapidly growing demand for carbon offsets combined with additional attributes to satisfy corporate environmental, social, and governance (ESG) investments and supply chain resilience goals. At the same time, there is growing scrutiny of offsets and IMF projects based on public concerns about project integrity and the transparency of claims of additionality in carbon sequestration results. Tribes should expect higher standards in future markets.

Although some of the larger tribes were recruited in the last decade and are already committed in compliance (CARB) markets, opportunities for smaller tribes may be available

in newer market arrangements with shorter commitment times, a broader sweep of payments for ecosystem services, and some help in organizing to reduce barriers to entry. Several tribes are now investigating voluntary market arrangements and are being approached by corporate investors. The National Indian Carbon Coalition (NICC 2023) was established to help tribes and their members generate income through sustainable management of tribal lands and successfully entering the carbon compliance and voluntary carbon markets.

The future of these arrangements will be enhanced by addressing some lingering issues:

- Improving the integrity and transparency of the carbon credit arrangement.
- Dealing with the growing threat of fire and other disturbances and implications for contract terms.
- Developing the ability to aggregate allotment ownerships and/or multiple tribal prospects into larger units for cost reduction and market positioning.
- Refining methods for calculating the reversal risk and the leakage adjustments to reflect differences more accurately in risk profiles across regions, forest types, and management settings.
- Developing better markets for reforestation, afforestation, and avoided conversion project types as well as offset protocols for woodlands ecosystems.

Task I Findings and Recommendations

I1	<p>Finding</p> <p>Support for full-cycle climate planning.</p> <ul style="list-style-type: none">■ The funding support for adaptation has been focused on the adaptation planning process and vulnerability assessments. There has been less emphasis on funding the implementation of risk-based strategies, priority-setting and allocation, monitoring, on-the-ground adaptation activities, and learning. Forest and woodland systems adaptation should become a more prominent player in this phase given their pivotal roles in economic, water, biodiversity, human health, and carbon values.	<p>Recommendation</p> <ul style="list-style-type: none">■ Provide technical and financial assistance throughout the climate adaptive management cycle from vulnerability assessment through planning, program integration, and implementation. This is especially important for smaller tribes.■ Much of the current work has been focused on the necessary risk assessment and planning but attention should now shift to action, outcome, learning, and adjustment. Intertribal organizations and the federal government should sponsor collaborations to compare lessons learned and other feedback from adaptation efforts and begin to develop best practices for integration into forest planning and management.
I2	<p>Finding</p> <p>Consistent standards for forest adaptation planning and integration.</p> <ul style="list-style-type: none">■ Adaptation plans are funded through a variety of sources, including the BIA Resilience program and other programs in DOI, USDA, and other agencies and non-governmental entities. Guidance on planning is provided in coordination with outside partners. The overall scope, focus and quality of the plans are shaped by the funders' objectives and the expertise and grant writers in the tribes and partner institutions. Most of the plans so far have been directed at vulnerabilities for human, cultural, environmental, and other values at the tribal level. There have been important contributions from forestry, however most tribes do not have vulnerability assessments and adaptation strategies or plans that address forest system changes and risks, their linkages to overall tribal vulnerabilities, and their integration into forest planning and operational processes.■ Some forestry managers have noted a lack of interdisciplinary involvement in tribal level adaptation planning. This encourages siloed approaches in selecting and ranking climate vulnerabilities that does not address interactions and tradeoffs in choosing adaptation options. Tribes with active and connected forest and IRMP <p><i>(continued on next page)</i></p>	<p>Recommendation</p> <ul style="list-style-type: none">■ Develop consistent standards in adaptation planning and for BIA technical services to support the integration of forestry, including silviculture and other strategies for climate adaptation into IRMP or other tribal level climate action plans.

Task I Findings and Recommendations

(continued from previous page)

- plans were better able to integrate climate vulnerabilities into strategic planning and implementation. Although the IRMP process has provided an effective avenue for adaptation planning, the loss of emphasis on IRMP's in the BIA and among tribes has stymied opportunities to better use it as a platform for multi-objective adaptation planning.
- In many cases, tribal forestry professionals have not taken a prominent role in tribal level adaptation planning teams, so forest management and forest adaptation issues have received little attention in overall adaptation plans. Forestry issues are often framed as a component of managing the vulnerabilities of other resources and climate impacts.
- There is no single set of standards, guidance, or principles from BIA or the Department of the Interior for assessing and managing climate-related forest vulnerabilities.

*“Elk are a cultural keystone species,
and we are poorer for not having them.”*

—IFMAT IV focus group participant

Task I Findings and Recommendations

13

Finding

Coordinated science and knowledge support.

- Accessing the primary scientific literature is costly, time-consuming, and inefficient. Access to scientific resources: research, models and other tools is inconsistent across tribes and regions. Existing personal relationships with federal researchers or academic partners tends to be the primary avenue of information dissemination, acquisition, and validation. Without these relationships and networking with scientists and technical specialists, it is difficult for understaffed forestry offices to respond to dynamic shifts in climate risk profiles or to synthesize, translate, and apply the rapidly unfolding science and technological advances. Examples include access to downscaled forest/climate modeling expertise and forest genetics findings important for decisions about post-disturbance restoration and regeneration.

Recommendation

- Provide more systematic technical and scientific support for tribal climate change planning and its integration into forest management planning. This includes access to customized info for tribal lands and assets, models, access to experts in federal agencies and universities, as well as scientific syntheses and management guides. The needs extend to tribal experts and information on the implications for traditional knowledge for designing and implementing climate responses.

14

Finding

Building capacity for climate response integration.

- The level of consideration of climate change adaptation and mitigation in forest management plan revision and the access to the tools to guide this incorporation vary with the capacity of the forestry program and tribal foresters' networks of individual contacts and relationships. There are clear gaps in forestry operations' capacity to fully integrate climate information, traditional knowledge, and science-based models into the forestry program. This is especially relevant for smaller tribes.

Recommendation

- Provide steady funding to hire and develop staff with skills in climate planning and response, train existing staff, and to work with partners to provide more effective access to climate management experience and technical expertise.

Task I Findings and Recommendations

15

Finding

Guidance for integrating climate into forest and integrated management planning is lacking.

- Most forest management plans are older, and many are in the revision process. There is widespread recognition of the need to include climate-informed actions, adaptation, or forest carbon stewardship strategies in the revisions of these plans. However, despite disturbances becoming a dominant feature in planning, there is little capacity to bring climate into planning as a new mega-driver and coupler of multiple disturbances or alternative future scenarios, or a problem framework for developing integrated strategies to address vulnerabilities and resilience.
- Much of the forest science and management that has been applied to climate response has focused on forest health and disturbance, anchored in the belief that adaptation is about resilience to be achieved through restoration to historic ranges of variability. Not well-developed are the concepts of explicit measures of resilience and strategies chosen for robustness across a range of future situations that are much different than historical conditions.
- There are large differences in depth and resolution in climate response guidance and resources for implementing landscape scale approaches across tribes and their neighbors. This makes collaborative strategies for climate change response difficult to forge and implement. Tribes lack the staff to pursue voluminous environmental analysis to manage exposure to appeals and litigation risks. Joint projects with the Forest Service or other agencies are important in large scale pro-active disturbance and resilience building, but tribes are often discouraged by the asymmetric process demands and requirements among partners for moving forward.

Recommendation

- Provide clear guidance for incorporating climate drivers into forest management and planning. This would include a thorough “cross walk” between general climate resilience planning and climate adaptation, forest system vulnerabilities, tribal adaptation strategies, and climate-informed forest management in forest management plans and IRMP’s. The guidance would be consistent enough across tribes, agencies, and partners to encourage collaborative efforts at assessment and planning at the landscape scale and the development of implementable risk sharing and co-management of resilience strategies.
- This guidance would also include provisions for periodic update and adjustments to accommodate new impacts and new management approaches for dealing with changing resource vulnerabilities, adaptation, and learning.

Task I Findings and Recommendations

16

Finding

There is a lack of clarity in the relative roles of carbon markets and stewardship in tribal forestry

- DOI's stance that carbon sequestration is not a trust asset and presumably that BIA has limited trust responsibility precludes codification of the important role of forests and forestry in the realities of climate risks and in providing an important tribal and public asset for decarbonization. As it stands now, the multiple commitments in carbon agreements and their implications for forest management are not reflected in the forest management or integrated resource management plans. Few if any forest management plans have estimates of carbon stocks or trends in net stock changes or quantitative expressions of forest conditions of tribe's carbon assets.
- The DOI rationale and BIA's lack of staffing seems to have contributed to a lack of guidance on either carbon market participation or on approaches to integrate forest carbon stewardship with other goals and objectives in forest planning. Neither has technical assistance from BIA been developed to support long-term carbon stewardship and monitoring – in or out of carbon market arrangements – and on understanding and estimating carbon responses to forest disturbances, practices, and investments.
- There are differences in the nature and levels of involvement of the forestry program in carbon market arrangements. These arrangements have usually been led by tribal government, sometimes with little input by the forestry program, who could help evaluate options, risks, and compatibility with forest resource goals and objectives.

(continued on next page)

Recommendation

- Clarify the perspective and roles of DOI/ BIA on carbon market arrangements and carbon stewardship trust responsibilities. Better define the technical services and guidance that can be provided in fulfilling these roles.
- Encourage tribes to track and evaluate their forest carbon assets and their relationship with forest condition and other resource values that underpin the FMP and IRMP. Develop capacity in staff to bring carbon and climate-informed management practices into the planning and management processes.

Task I Findings and Recommendations

(continued from previous page)

- Members of some tribal forest operations are concerned about potential conflicts between forest management strategies and carbon commitments in the face of expanding and more intense disturbances, growing levels of mortality and associated regeneration needs. They feel that more aggressive density management is needed to assure forest health and could eventually conflict with commitments in carbon programs to maintain high levels of carbon stocks and net sequestration. Some tribes, especially those with larger holdings in trust and fee lands have been successful so far in building diversity and flexibility into carbon stewardship to be compatible with their market commitments and their overall forest management goals.
- The tribal uses of revenue from carbon markets vary across participating tribes. Tribes have put carbon revenue to many good uses and longstanding strategic needs. It is unclear how much of the total revenue is being reinvested in forest management and capacity building in support of forest management. IFMAT hopes that tribal and forest operations leadership gives this question regular attention and allocates enough of the climate proceeds to assure a valuable and resilient forest resource.

17

Finding

Creating new markets for woodland carbon and other resources.

- New voluntary and compliance market arrangements and pricing structures for carbon and other ecosystem services are developing that may be suitable for a wider range of tribal forest operations. This includes the management of grassland and woodland ecosystems that are mixed with forests on the landscape. While there are carbon market protocols for forests as well as grasslands and shrubs, woodlands per se are currently not eligible as a source of projects.

Recommendation

- Develop woodland carbon and other ecosystem services projects to support managing this underfunded and often neglected resource.
- Given the high proportion of tribal forest land ownership in woodland acres, there is a need for a combination of government and private funding to support climate-informed management for restoration and resilience of these lands. These systems occupy important positions and roles in a dynamic landscape being reshaped by climate change and provide unique blends of ecological, societal, cultural, and spiritual values.

Task I Findings and Recommendations

18

Finding

Removing barriers to a wider range of tribally compatible carbon markets.

- Most of the tribal experience in carbon markets has been with the California ARB compliance markets through improved forest management (IFM) project types. There has been very few afforestation, reforestation or avoided conversion projects. Some tribes are exploring options in the rapidly developing voluntary market for carbon offsets and other ecosystem services. The shorter commitment time frames and greater flexibility have piqued the interest of many tribes.
- The absence of a clear and more affirmative statement of the BIA trust responsibility for forest carbon management, guidelines for forest carbon stewardship, as well as guidance for participating in carbon and ecosystem service markets has contributed to hesitancy in market participation and perhaps lost opportunities to develop compatible and sustainable sources of revenue.
- Small tribes and allotment owners face high barriers to participating in carbon markets. Some tribes have declined to participate because of high transaction costs, verification demands, long term commitments, lack of staff, incompatibility with tribal goals, and other factors.

Recommendation

- Reduce barriers to entry for compliance and voluntary carbon markets. This would include an assessment of the feasibility of developing market aggregates among tribes and/or with non-tribal partners to more effectively participate in developing markets for climate-smart products and services.
- Utilize resources provided in the recently passed Bipartisan Infrastructure Law and the Inflation Reduction Act to provide assistance to small tribes and allotment owners in entering carbon and ecosystem service markets. Provide grants to carbon registries, developers, and associations to offer new voluntary market opportunities for small tribes and owners and to develop new protocols and markets focused on woodlands ecosystems.

An assessment of how Indian forests fit into the general scheme of landscape ecology and restoration



Giant sequoia trees are culturally significant to the Tule River tribe but are susceptible to stand replacing wildfire events. The Tule River tribe in south central California entered into a co-stewardship agreement with the adjacent USDA Forest Service Sequoia National Forest. The agreement protects tribal interests and promotes cross boundary fuels reduction projects. PHOTO CREDIT: SERRA HOAGLAND

Tribal lands make up a significant portion of the landscape management mosaic inclusive of federal, state, county, private, NGO, and in some cases other tribal lands. Tribal reservations are bordered by ~ 4,000 miles of forestlands overseen by others and in need of management to improve resiliency and to restore the ecologic function into the future. Working across ownerships in collaboration is necessary for largescale forest restoration and is the focus of many new legal authorities.

“We don’t consult, we co-manage.”

—IFMAT IV focus group participant

This scale of landscape-level forest restoration can be accomplished through collaboration and active management when goals are to protect and enhance the resilience of the ecosystem through detailed planning, focused investments, and the application of silvicultural practices. These efforts must occur across various spatial and temporal scales to protect and enhance tribal resources for future generations.

In this assessment section the team used several terms, landscape ecology and restoration, that could have multiple interpretations, thus definitions are included for context. Guided by these definitions the team sought to provide context on how tribal forests fit into cross-boundary forest ecology and restoration

*“Restoration brings us back to our
connectedness and our responsibility
to the Earth.”*

—IFMAT IV focus group participant

projects. Influences to tribal forests from neighboring landscapes was included in this assessment because of the potential for significant impacts to tribal forest resources. In this analysis, the team focused on lands within and immediately adjacent to reservation boundaries, thus not including the larger ancestral homelands of many tribes, apart from the Reserved Treaty Rights Lands (RTRL) program.

Landscape ecology as a discipline is defined as the relationships between the abiotic

and biotic components as well as the patterns and processes of the landscape at various spatial and temporal scales. Wu (2012) defines landscape pattern as the “composition (diversity and relative abundances) and configuration (shape, size, and spatial arrangement) of landscape elements, including both spatial patchiness and gradients.” This IFMAT IV analysis focused on the pattern and forest processes at multiple scales recognizing the challenges to tribal forests do not stop at the reservation boundary. The team additionally considered how differing forest patterns may

impact cross-boundary efforts. Lastly, to further assess how Indian forests fit into landscape ecology and restoration the team considered the cultural connections people have to forested landscapes within the definition of landscape function, defined as the “horizontal and vertical exchanges of organisms, energy, material, and information in a landscape” by Wu (2012).

Restoration or specifically ecologic restoration is defined as the goal to recreate, initiate, or accelerate the recovery of an ecosystem that has been disturbed (Vaughn et al. 2010). The IFMAT IV team’s focus centers on forestlands which can and do include woodlands and rangelands within the inclusive landscape-scale approach of many tribal nations where goals can include: restoring historical vegetation conditions and structures, maintaining forest resilience to wildfire, promoting tribal food sovereignty, or increasing the use, support, and/or experiences a landscape offers the people. Within this task the team focused on restoration practices within forests and woodlands.

While conducting the IFMAT IV assessment two recent national scale guidance documents were initiated that may allow tribes to have significant input to landscape-level forest ecology and restoration. First, in November 2021 a Joint Secretarial Order No. 3403 was authorized and is entitled Fulfilling the Trust Responsibility to Indian Tribes in the Stewardship of Federal Lands and Waters. The order recognized that the United States “trust and treaty obligations are an integral part of each



A post-fire stream restoration project, including beaver and willow reintroduction, conducted by the Santa Clara Pueblo in New Mexico along with state and federal partners. PHOTO CREDIT: SERRA HOAGLAND

Department's responsibilities in managing Federal lands" and each department shall undertake making agreements to co-steward federal lands with tribes. Furthermore, a with a subject entitled: Indigenous Traditional Ecological Knowledge and Federal Decision Making states 'where appropriate, ITEK can and should inform Federal decision making along with scientific inquiry'. Both the Joint Secretarial Order 3403 and the ITEK Presidential Memo may allow tribes to incorporate their knowledge and values for various federal decisions regarding forest management.

Following the order and memo mentioned above decisions made in 2022, additionally provided two NEPA authorities related to fire breaks and fuel treatment. These are summarized below and influence additional cross-boundary efforts on tribal lands with their neighbors:

- 1) A Categorical Exclusion fuel breaks up to 1,000 feet in width and under 3,000 acres of treatments.
- 2) "Emergency Actions" that authorizes the Secretary to determine that an emergency exists on National Forest System lands and allows vegetation and other treatments to be carried out pursuant to the Secretary's emergency determination.

These national scale actions and impacts were in active development and implementation as the IFMAT IV assessments were completed, thus IFMAT was not able to report on their potential influence on landscape-scale ecologic restoration. The focus of this Task was on insights



San Carlos Apache tribal member, Twila Cassadore, works to protect tribal food sovereignty through the Western Apache Diet Project
PHOTO CREDIT: SERRA HOAGLAND

and observations that could be gathered during the team's visits with tribes and regional BIA offices over the period of nearly two years.

Task J is similar to Task K, where the focus is on institutional capability, staff, equipment, facilities and organizational components necessary to accomplish landscape level projects. However, in Task J the focus is on understanding the who, what, where, when, and why of landscape-scale forest and ecologic restoration and how tribes contribute to, or may benefit from such work.

Who: Commonly adjacent landowners to tribal lands included federal (e.g., USFS, NPS, BLM etc.), state (state forests, state parks, state conservation areas), forest industry, counties, and private. In some cases, the tribe was semi-landlocked and had only one neighbor with forested lands and in some cases they had more than five different entities to consider working with on cross-boundary type projects. The USDA Forest Service (USFS) was the most common neighbor to tribal lands. With new internal guidance such as that provided within the Confronting the Wildfire Crisis Strategy and



Tule River tribal forestry crew takes a quick break to visit with IFMAT IV in front of a Giant Sequoia. Developing the next generation of tribal forestry professionals will sustain forestlands into the future and help support tribal self-determination. PHOTO CREDIT: SERRA HOAGLAND

“We know what we need to do. Now we need partnerships with the federal government.”

—IFMAT IV focus group participant

corollary Implementation Plan of the USFS there are options that could apply restoration efforts at a landscape-scale to improve ecologic function and protect infrastructure. Several tribes had a designated employee, such as an RTRL coordinator, to oversee and manage landscape scale restoration projects in collaboration with neighboring lands. In few cases the tribe had little to no cooperation between neighbors with no existing contracts or agreements. In at least once instance, the tribe primarily conducted all their forest restoration work on non-trust lands.

What: Often the intent and desire to pursue landscape level projects existed even if no current landscape-scale project was in place. More than half of the tribes sampled had accomplished some level of partnership with their neighboring landowners. Tribes with a larger number of natural resource staff and support from their tribal council and tribal membership partnered more often with their neighbors. Tribes that had small staff and limited resources had less partnerships with their neighbors. Some tribes’ landscape restoration goals focused on cultural resources or traditional foods, especially in the case where subsistence harvesting

and cultural plant resources on their lands are limited.

Where: Cross-boundary projects tended to focus on shared boundaries, along fence lines or within ancestral homelands where the need for forest restoration was higher to protect or enhance their landscape. Projects also tended to occur in locations that were important to the tribal community, such as gathering sites or locations of high cultural significance.

When: Ecological restoration projects were ongoing, or in some cases completed and new projects would begin when additional

funding and opportunities arise. Over the past decade the number of cross boundary projects that tribes have been engaged with has increased. Most cross-boundary projects tended to span multiple years. Unfortunately, in many cases the pandemic impacted the ability to maintain face to face relationships and regular dialogue waned during this time.

Why: Shared goals often included promoting forest resiliency, job training and human resource development as well as educational or demonstrational that helped revitalize cultural practices. IFMAT found that tribal council and tribal leadership were supportive of tribes working with partners on landscape level type of restoration projects. The most common motivation tribes mentioned when working with their partners was the goal of preventing fire trespass and

other forest-health related concerns from adjacent owners. Additionally, it was commonly noted that the ability to combine tribal timber resources with timber resources from non-trust lands helped support collaborative efforts, workforce development and regional forest restoration infrastructure (e.g., roads, trucking, mills, and power facilities etc.).

How: There are several legal authorities that discuss or promote shared stewardship and landscape scale forestry projects. These include but are not limited to the Collaborative Forest Landscape Restoration Program (CFLRP), Good Neighbor Authority (GNA), the Tribal Forest Protection Act of 2004, 638, the Reserved Treaty Rights Land (RTRL) program as well as biomass demonstration projects.

Through Bipartisan Infrastructure Law (BIL) funding,

the BIA will continue to expand partnerships and collaboration on RTRL landscapes. The development of additional RTRL collaborative projects—in which tribes collaborate with non-tribal landowners to improve resiliency and reduce wildfire risk to tribal resources—respects tribal sovereignty and enhances tribes’ capabilities to address their priorities off existing reservation lands. RTRL projects also provide opportunities to meet the needs of all partners, including tribal, federal, state, and local entities. In FY 2021, over 20,250 acres were treated that met tribal and collaborator priorities. Similarly, the BIL authorizes the expenditure of up to \$10 million by BLM over five years to expand the Tribal Forest Protection Act (TFPA). The TFPA supports tribally proposed stewardship contracting or other projects on Forest Service or BLM lands that are adjacent to tribal lands with the goal of protecting those lands from wildfire risk or other threats.

IFMAT found various BIA regions, and tribal lands within them, had commonalities in forested landscape pattern and goals. Furthermore, the predominant forest health related issues were similar within individual BIA regions. At the time of writing this report, the BIA, BLM, and Intertribal Timber Council were beginning discussions that would coordinate ecosystem restoration projects with many different tribal nations. Combined with RTRL projects, this encouragement for shared stewardship across multiple landscapes positions all partners well to use multiple authorities and address wildfire risk across the landscapes adjacent to tribal lands.



In northwest New Mexico the Pueblo of Acoma reservation shares a northern boundary with the USDA Forest Service Cibola National Forest. They have partnered together on several woodland projects to restore native grasslands and improve forage for big game species and livestock that support tribal enterprises. PHOTO CREDIT: SERRA HOAGLAND

Task J Findings and Recommendations

J1

Finding

Limited tribal capacity to carry out landscape level projects.

- Tribal departments are understaffed and underfunded (see Task B and C for additional information).
- Managing their own resources, lands and tribal interests is paramount and most relevant, in many cases adding on the need to coordinate with and manage adjacent lands just is not feasible. Tribes need all current personnel to address management on their own trust lands and in many cases are still short-handed.
- Developing and maintaining project agreements, MOUs, and contracts with (often multiple) partners require significant investment of resources and time that further spread limited staff. Capacity, as far as staff time and funding, was most often cited as the limiting factor to engaging on cross boundary work.

Recommendation

Tribes need adequate staffing to implement cross-boundary projects.

- Some tribes may also benefit from more workforce related activities such as training and development opportunities including grant management and/or various fire qualifications so that their staff can implement prescribed burn plans, forest measurements and inventory, etc.
- Supply multiple year funding for a co-management coordinator position in tribal programs. This would be similar to the positions in the Federal agencies such as tribal relations or tribal liaisons.
- Recruitment efforts to encourage tribal youth and early career professionals to enter natural resource management would benefit tribal partnerships.
- Encourage the BIA to hire a biometrician with the primary duty to support tribal partnerships for landscape level projects.
- Encourage federal partners to enter into agreements or contracts with tribes to add funding to hire more tribal staff dedicated to cross-boundary work.

“There is no chance we have the ability to do off reservation work.”

—IFMAT IV focus group participant

Task J Findings and Recommendations

J2

Finding

Indian forests are being showcased as models of good stewardship which should be applied to management of federal lands.

- New research shows that indigenous-managed lands have high levels of intact biodiversity (Garnett et al. 2018, Schuster et al. 2018)
- Members of Congress have highlighted the significance of tribal stewardship and have requested the U.S. Forest Service Chief to develop policy for tribal co-management and stewardship of federal forests and grasslands.
- The BLM Director has issued a directive to state directors requiring development of state-specific plans for outreach to identify co-stewardship opportunities, including identifying potential tribal partners and sources of Indigenous Knowledge.
- Tribal governments across the country are pursuing opportunities to engage with the federal government to co-manage specific areas of federal forests in efforts to protect and enhance treaty resources, to mitigate cross-boundary negative impacts of federal forest management and exercise off-reservation rights.
- A priority co-management activity would be project work to improve forest health on federal lands and address issues which have negative impacts on traditional forest uses and values by tribes.

Recommendation

The ITC should serve as a primary contact for providing input to the Forest Service and BLM in the development of co-management policy and plans.

- Using the prior work of the joint ITC/USFS Working Group to implement the P.L. 93-638 provisions of the 2018 Farm Bill and to facilitate tribal stewardship agreements, the ITC should continue to provide assistance to tribes concerning new initiatives by the Congress and federal agencies encouraging co-stewardship agreements on federal forest lands.

Task J Findings and Recommendations

J3

Finding

Significant financial investment and diverse expertise is required from tribal staff to implement landscape level projects.

- Many tribes that enter cross-boundary projects with neighboring lands have put forth significant investments in time and resources to gain collaboration (in some cases more than 90% of a staff member's time). This includes going to meetings, establishing relationships and rapport as well as contributing to reports and writing documents, following through on implementation, and monitoring as well as managing budgets, timelines, and resources for managing multi-year, large scale projects.
- Also, for example, TFPA projects are very complex in nature and tribes face challenges because of the diversity of disciplines including but not limited to aquatics, wildlife, fisheries, forestry, etc. and the USFS specialist opinions. This further complicates and adds time to the process, makes it inconsistent region-by-region as well as requires a specific amount of time and resources as processes are long and drawn-out.

Recommendation

Incentivize tribal participation and empower tribal leadership for the duration of landscape level projects.

- Compensating tribal investment adequately and appropriately in joining collaboratives is imperative to the success of projects. Compensation can be in the form of training and development opportunities for staff, as well as financial. It is imperative to allow tribes to retain receipts on Good Neighbor Authority projects.
- Allow tribes to leverage funding opportunities to accomplish landscape level project work.
- Additionally, there is value to the tribes in empowering their people and leadership for cross-boundary projects where the authority and leadership is removed from the USFS or other partners that have frequent turnover. This may incentivize tribes by providing leadership, decision discretion and funding control to the members of the collaborative that invest in the long-term, seek deeper relationships and promote action.

“The distinction between co-management and co-stewardship — terms the federal government uses for agreements to collaborate on land management with tribal nations — is subtle but important. “Co-stewardship” covers a broad range of collaborative activities like forest-thinning work in Alaska’s Tongass National Forest in partnership with the Hoonah Indian Association, where Indigenous knowledge can be included in federal management. But “co-management” is more narrowly defined. In those instances, tribal and federal governments share the power of legal authority in decision-making of a place or a species. This is the case with Kasha-Katuwe Tent Rocks National Monument in New Mexico, which is co-managed by the Pueblo de Cochiti and the Bureau of Land Management, and with the salmon fisheries in the Pacific Northwest.”

From High Country News: What does the nation’s commitment to tribal co-stewardship mean for public lands? (Tribal co-stewardship takes shape) — High Country News – Know the West (hcn.org)

Task J Findings and Recommendations

J4

Finding

Neighboring land management entities often have rotating leadership that hinders project stability.

- Most commonly, USFS district rangers, which serve as the line officer on largescale projects, rotate frequently and are incentivized to change positions to achieve promotions and grade level increases. This leaves the tribal partner as the remaining constituent and forces the tribal entity to constantly train new leaders and re-educate their partners as projects tend to span multiple years, even decades in some cases.
- This can lead to burn out and can be extremely taxing on already limited tribal staff who bring immense passion and long-standing devotion to restoration work. Revolving federal personnel causes delays on cross-boundary work, impacts relationships as well as consumes additional resources and time.
- This also directly affects the ESA and NEPA processes that may arise, further extending the time and resource commitments as well as impacting project success. Navigating the grants and agreements side of cross-boundary work takes immense time and resources and if staff are rotating through it can create additional challenges.
- In places where tribal liaisons are designated and meaningfully engaged, IFMAT discovered the most successful cross-boundary projects, especially those who are long-tenured or are from tribal communities themselves.

Recommendation

Encourage partners to maintain leadership for the duration of large-scale projects.

- Include a standardized, formal metric within performance reviews for USFS National Forest System line officers regarding tribal partnerships and collaboration as part of their federal trust responsibility as government employees.
- Incentivize, promote, and encourage 'champions' who are succeeding in promoting meaningful relationships with tribal entities. If leadership of partners changes provide thorough training and an adequate transition period for new leadership to maintain project momentum.
- Ensure that career federal employees who carry out the projects uphold goals of co-management and co-stewardship by making it required on performance reviews.
- Federal tribal partners should seek to improve employee understanding of tribal needs and priorities as well as baseline federal trust responsibility training to improve employee's commitment and engagement at all levels.
- It should be noted that tribal council leadership can also be on a rotational basis, therefore maintaining stability on the tribal side is critical.

Task J Findings and Recommendations

J5

Finding

Poor on-the-ground collaboration exists between tribes and their neighbors where relationships are lacking.

- This can be especially problematic in places that are in desperate need of forest restoration. Often there are collaborative hurdles to surpass, for instance historical relationships or poor cross-cultural dialogue, in areas that surround tribal lands.
- There could be past events that make it challenging for different groups to come together and partner on a project, or misunderstandings, or, quite frankly, harsh feelings towards other entities that block any positive relationship building.

Recommendation

Promote cross-boundary relationship building in areas with greatest need of restoration.

- Conduct comprehensive assessments of the entire landscape to inform research and build support for reference documents such as the USFS 10-year wildland fire strategy that identify areas with greatest risk fire, insects, disease, development/encroachment, etc. and focus relationship building efforts in these zones if they do not already exist.
- Successful examples of tribes working with their neighbors included examples where the tribe entered an MOA/MOU with their local national forest, which included their aboriginal territories, so they could be part of their IDT process for forest plan revision.
- Meaningful and regular coordination and collaboration with tribes is critical to maintain the government trust responsibility.
- Better define adjacency and provide baseline training and resources for grants and agreements staff.
- Land management organizations and agencies adjacent to tribal lands should integrate TEK and indigenous ways of knowing into their land management practices.
- Consider small scale projects such as the development of signage that includes local native languages or teachings on interpretive materials that are public facing. This could help initiate relationships among federal and tribal entities for small scale tangible benefits. Actions that call out contemporary tribal connections to the land are especially important in recognizing modern day tribal communities.

Task J Findings and Recommendations

J6

Finding

Funding is a key challenge in building successful relationships with partners.

- Collaboration and applied management on federal lands is continually challenged by funding and support for ESA/NEPA issues. Tribes already struggle to complete these requirements on trust lands as they are an unfunded mandate.
- Additionally, RTRL projects are not free from litigation by environmental groups and this is a further hinderance to cross boundary cooperative and collaborative project development. In some cases, statewide injunctions for multiple years can end already established, approved, and funded cross-boundary projects.
- Tribes may benefit from opportunities to use 638 contracts with the USFS and enter into co-management agreements if consistent sources of funding can be identified. However, 638 projects remain unfamiliar to the USFS and have yet to receive broadscale implementation.
- Implementation of co-management projects should utilize authorities which allow tribes to retain timber receipts (Good Neighbor Authority with proposed amendment) which will facilitate continuation and expansion of co-management activities through self-funding.

Recommendation

Create a specific non-competitive funding source for tribes to obtain that facilitates building relationships with neighbors.

- Limit the funding sources that make tribes compete with each other for resources as this is counterinitative to the sentiments behind federal trust responsibility and tribal development.

Task J Findings and Recommendations

J7

Finding

New authorities aimed at promoting tribal partnerships often benefit the partners more than the tribes themselves.

- The purpose of the federal Reserved Treaty Rights Lands (RTRL) program is to treat and restore landscapes within and adjacent to reserved treaty right lands and enable “tribes to participate in collaborative projects with non-tribal landowners to enhance the health and resiliency of priority tribal natural resources at high risk to wildland fire” (2015 BIA RTRL Plan).
- Although trust lands can be treated, a majority of current and future RTRL projects are being conducted on non-trust lands. One sentiment from an individual mentioned “all collaborative benefits from partners were credited from tribal lands.”
- Similarly, tribes cannot retain receipts from GNA projects, yet their partners can generate revenue from these projects. Tribes should be able to retain receipts for GNA project work.
- When seeking funding and support partners may receive extra ‘points’ when competing for awards if they are working with a tribal entity but often this has not been meaningfully established and maintained, it is simply to gain the extra benefit when applying.

Recommendation

Ensure that cross-boundary authorities, initiatives, and projects also serve tribal entities, not just their partners.

- For instance, include tribal lands in the watershed analysis and priority areas identified in the omnibus bill. One great example was a letter provided by the USFS Chief to promote cooperation between the Chippewa National Forest and the Leech Lake Band of Ojibwe. This level of commitment from the Chief has assisted in the development of a RTRL project and a large scale TFPA project.
- Tribes should be able to benefit financially and retain receipts from GNA projects. Retained receipts could be used to pay for future restoration work.



Resilient forest ecosystems can promote healthy watersheds, such as shown here from the Tule River Reservation, which support adjacent non-tribal communities and agricultural developments downstream.

PHOTO CREDIT: SERRA HOAGLAND

Task J Findings and Recommendations

J8

Finding

Prescribed fire including cultural burning is a consistently mentioned tool that tribes want to utilize in cross-boundary projects.

- Many forest restoration projects also include some degree of utilization of fire, however implementing and putting fire back on the landscape is extremely challenging for many reasons.
- Many cultural benefits that tribes care about deeply can come from using fire. However, this is often the most complex, although very critical component of many silvicultural treatments.
- Some tribes cannot issue individual permits for underburning, which essentially eliminates the cultural burning potential. Fire planning needs cooperation among multiple agencies, landowners, and municipalities and without agreements in place this can limit progress.

Recommendation

Reduce the barriers to getting fire back on the landscape where needed.

- Increase the tribes' ability to utilize fire and cultural burning when objectives will lead to improved forest resiliency.
- The Indigenous Peoples Burning Network is one great intertribal organization that promotes the revitalization of traditional fire practices, but more organizations are needed.
- Also, states can consider laws such as California law SB 332, which allows increased protection for tribal members to utilize cultural burning to reduce wildfire hazards.

“Without fire, our forests will never be healthy.”

—IFMAT IV focus group participant

J9

Finding

Programmatic EAs and having certified silviculturists can streamline cross-boundary project implementation.

- Completing silvicultural planning and NEPA have been significantly improved once a certified tribal silviculturist participated in these processes however the project can be very intense and challenging overall for tribes.

Recommendation

Increase the utilization of programmatic EAs for cross-boundary projects.

- Continue to encourage tribal participants in NASP training and when resources exist hire and retain silviculturists to help tribes accomplish their vision.

Task J Findings and Recommendations

J10

Finding

Mismatch of goals, objectives and landscape priorities for treatments often hampers progress on cross-boundary projects.

- Often tribes cite different benefits from forest restoration than their partners. For instance, states often need to maximize the value from timber resources whereas tribes may be more interested in topics such as providing hunting and gathering opportunities.
- Other examples include tribes wanting to simply provide tribal members with job opportunities for forestry technician and training positions with goals of supporting the local tribal community and economy while also accomplishing forest health related goals.
- Additionally, IFMAT found in some cases that the tribes wanted to treat forest health related issues more aggressively than their partners. This mismatch can create barriers to project implementation as well as challenges with drafting grants and contracts.

Recommendation

Encourage tribal values to be considered equally as benefits to forest restoration.

- Cultural values such as increased food sovereignty, increased availability and access for cultural resources is just as important as values identified by partners. Promote cross-cultural dialogue and encourage partners to participate in training so they better understand tribal history, values, culture, and tradition.
- Justice40 related initiatives may improve tribal benefits from federal programs. Co-management activities should incorporate traditional ecological knowledge and practices such as active management to achieve desired outcomes and restoring fire to the forest landscape.

Cedar bark peel on the Quinault Indian Reservation in Washington. This tree species provides numerous benefits to the tribal membership and the bark is often used as including traditional basketry materials.

PHOTO CREDIT: SERRA HOAGLAND



Task J Findings and Recommendations

J11

Finding

Lack of forest inventory data on tribal lands can limit their involvement in cross-boundary projects.

- Many tribes lack consistent, reliable, up-to-date forest inventory and analysis data. Without this information they cannot develop stand level prescriptions, understand forest health issues, and create plans to incorporate into projects.

Recommendation

Decrease the time it takes for FIP (formerly BoFRP) to return tribal forest inventory analyses.

- Encourage the BIA to hire a biometrician with the primary duty to support tribal partnerships for landscape level projects.
- Provide training and educational resources for tribal departments to conduct their own forest inventory and analysis.
- Promote the collaboration of FIP (formerly BoFRP) with USFS FIA to ease the burden on backlog that exists at FIP (BoFRP).
- Encourage third party organizations to assist tribal entities with new technologies such as LiDAR to inventory and monitor their forest resources.
- Provide FIP (BoFRP) with new tools and software to analyze forest inventory data. Adequately staff FIP (BoFRP). Have the BIA consider revising or reevaluate the CFI system to better provide stand level detail needed to assess risk and determine forest priorities.

J12

Finding

Woodlands need restoration.

- Tribal woodlands compose a significant amount of available land for climate adaptation and mitigation strategies and are in dire need of large-scale restoration.
- Woodlands are often underfunded and do not receive equitable resources and energy despite providing numerous tribal benefits (hunting, gathering, etc.) to community members.
- Many tribes do not receive funding to conduct rangeland burning although this would greatly benefit some woodland ecosystems under the right conditions.

Recommendation

Woodlands need adequate support to facilitate their management and restoration.

- Consider woodland specific cross-boundary funding mechanisms to address this urgent need

Task J Findings and Recommendations

J13

Finding

Fractionated, highly allotted tribal lands are especially challenging when promoting landscape-scale cross-boundary projects.

- Many tribes have private lands, allotments, or various lands within their tribal boundaries that fall under different management guidelines and scenarios. Additionally, this adds to the economies of scale challenges and makes managing across boundaries very difficult.

Recommendation

Recognize and alleviate the challenges associated with fractionated and allotted tribal lands.

- Consider novel types of federal programs that assist with land consolidation.

TASK
K

An assessment of institutional capability, staff, equipment, facilities, and organizational components necessary to support landscape scale management

Tribes maintain reserved treaty rights as sovereign nations on federal forest lands and have a specific interest in ensuring that federal lands are managed in ways that effectively protect their treaty rights which may include grazing, hunting, fishing, gathering, water, and subsistence rights, depending on the scope and allocation language in each

of the specific tribal treaties. The trust responsibility of the US government is a permanent legal obligation to exercise statutory and other legal authorities to protect tribal lands, assets, resources, and treaty rights. The relationship of treaty rights to federal obligations and many of the challenges facing the agencies managing these

relationships were identified in IFMAT III. Additionally, tribes have several opportunities to work directly with government agencies to develop relationships, projects and plans that meet specific objectives. Many of these opportunities exist within programs currently available to tribes such as participation and leadership within the Tribal



A TFWA project with the Leech Lake Band of Ojibwe for snowshoe hare management in Minnesota.

PHOTO CREDIT: ADRIAN LEIGHTON

Forest Protection Act (TFPA), Good Neighbor Authority (GNA), Reserved Treaty Rights Lands (RTRL), and Federal 638 contracting. These provide unique and long-term investment opportunities to increase the health and resiliency of forest landscapes, leverage tribal permanence-of-management,

and support traditional cultural practices and knowledge.

The Anchor Forest concept first identified in IFMAT III envisioned a broader view of including the tribal, public, and private forest with the attempts to integrate a stewardship of ecological processes across

the landscape. It took into consideration changes in forest management, harvesting, and transportation infrastructure in the vicinity of reservations and the potential for Indian forests to become “anchors” of forest infrastructure.

The Anchor Forest report, published in March 2016, identified opportunities, barriers, and recommendations for implementation of sustainable forest ecosystems through cross-boundary and landscape-scale collaborative management. The goal was to achieve sustainability through a balance of social, ecological, and economic considerations by applying stewardship centered on vision, commitment, and available capabilities across landscapes.

The Anchor Forest concept and collaborative structures can help bridge tribal, federal, and other relationships while leveraging some of the new technology tools of the 21st century. New inventory products using satellite imagery and Lidar can improve the analysis conducted in the ESA and NEPA process assisting in making decisions involving environmental performance and mitigation needs.

Task K represents an investigation into the capabilities of tribes to enter landscape-scale management projects and identify the opportunities and challenges that support implementation.



Lumber products from the Hoopa Valley Tribal harvest and milling operations in California. PHOTO CREDIT: VINCENT CORRAO

*“How did our ancestors create the ecosystems that they lived in?
The big yellow pine are a testament to our ancestors.”*

—IFMAT IV focus group participant

Task K Findings and Recommendations

K1

Finding

Tribes lack the personnel, capacity, and funding to enter cross-boundary landscape-scale management. Tribes need to fulfill local, and reservation needs before they can engage in co-management of adjacent resources.

Recommendation

Forestry staffing vacancies need to be addressed.

- Tribes in some cases have identified and filled key personnel for cross-boundary projects when funding and staffing are available.
- Recurring Funding needs to be identified for meeting staffing needs over the long term on tribal lands before tribes can engage in cross boundary projects (see Task C).

K2

Finding

A champion is needed on the tribal side as well as on the federal side to keep the collaborative process moving forward (Anchor Forest Report 2016, IFMAT III recommendation).

Recommendation

- Tribes and federal agencies need to incentivize staff that successfully move collaborative and co-management processes forward (see Task J).
- OPM and performance evaluations need to be implemented for regional foresters, district rangers and others that successfully utilize collaborative and co-management processes.



An active wildfire salvage sale on the Confederated Salish and Kootenai Tribes Flathead Reservation in Montana. PHOTO CREDIT VINCENT CORRAO.

Task K Findings and Recommendations

<p>K3</p>	<p>Finding Turnover of district rangers, planners and other federal employees engaged in the collaborative process hinders the tribe's ability to effectively manage cross-boundary landscape-scale projects.</p>	<p>Recommendation</p> <ul style="list-style-type: none"> ■ Personnel need to be incentivized to engage in collaborative work and encourage sufficient tenure to complete projects that improve landscape management. ■ As personnel leave positions a checklist of duties and responsibilities needs to be completed. This information should link existing work with new personnel and should be approved before the transition is made.
<p>K4</p>	<p>Finding Some federal employees do not support TFPA or GNA and it takes cooperation and collaboration from all sides to implement projects.</p>	<p>Recommendation</p> <ul style="list-style-type: none"> ■ Cross-boundary management takes committed staff that support cooperation and collaboration and those that do not favor tribal engagement should not be allowed to hinder activities. ■ Clarify the federal agencies' views on co-management and co-stewardship and include the tribes in funding discussions regarding these projects.
<p>K5</p>	<p>Finding Unlike the states, GNA currently does not provide revenues to the tribe on projects and the tribes do not have additional funding and personnel to conduct these projects.</p>	<p>Recommendation Tribes willing to engage in cross-boundary and landscape management should have the opportunity to retain receipts and be funded at the same level as the states.</p>
<p>K6</p>	<p>Finding RTRL funds are helpful, but the understanding is that they can only be used on federal lands adjacent to trust lands.</p>	<p>Recommendation</p> <ul style="list-style-type: none"> ■ The eligible uses for RTRL funds need clarification from the BIA on when these funds can extend onto trust lands. ■ RTRL funds can be used on trust lands under certain conditions.

Task K Findings and Recommendations

<p>K7</p>	<p>Finding</p> <p>Tribes with small land bases do not have sufficient personnel or resources to go beyond their basic trust responsibilities and lack resources to participate in collaborative or co-management type projects.</p>	<p>Recommendation</p> <ul style="list-style-type: none"> ■ Recurring funding must be sufficient to maintain tribes' existing forestry needs before a tribe can take on additional responsibilities (see Task C). ■ Collaborative and co-management needs access to funding for staffing, training, and equipment equivalent to their federal partners. ■ Grant funding is short term and the timelines often do not provide the opportunity for retaining professional staff. Acquiring equipment in a timely fashion for implementation and/or training for additional projects is difficult as funding cycles do not correspond with the need. ■ Facilities on many reservations are presently not adequate to house and provide office capacity for existing workloads and facilities throughout Indian Country need to be assessed.
<p>K8</p>	<p>Finding</p> <p>Funding to support additional staffing and training needs. Most projects require skilled professional foresters and silviculturists to engage with the Forest Service and often require other natural resource specialists.</p>	<p>Recommendation</p> <ul style="list-style-type: none"> ■ Recurring funding is necessary to build and train forestry and natural resource expertise at the tribal level.
<p>K9</p>	<p>Finding</p> <p>A certified silviculturist significantly improves the tribe's ability to engage with the Forest Service in completing environmental assessments and silvicultural prescriptions.</p>	<p>Recommendation</p> <ul style="list-style-type: none"> ■ BIA needs to provide opportunities for more tribal certified NASP training and/or provide the technical support for landscape projects. ■ BIA should provide the needed technical assistance or contract the needed services that the tribes require to be successful in cross-boundary collaboration.

Task K Findings and Recommendations

K10

Finding

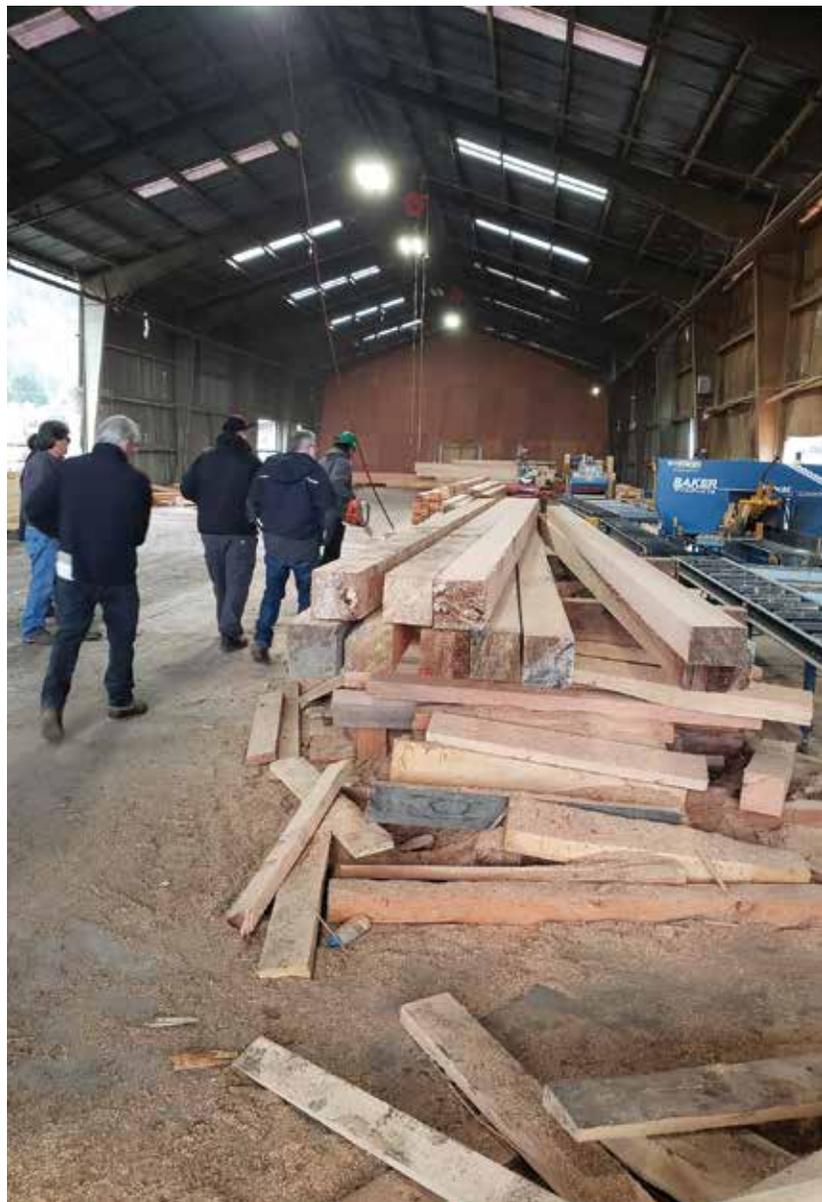
There is a need to put managed fire back on the landscape and this takes cooperation and coordination with adjacent landowners. Training is needed and requires funding and is necessary to meet the fire management qualifications.

Recommendation

- Presently there are not enough trained fire management qualified personnel in Indian Country.
- Training for fire qualifications needs to be re-evaluated and ramped up to meet the demand to use managed fire on a landscape basis.
- Cooperative inter-agency training for managed fire program should be implemented similar to TNC Indigenous burning network.
- Cooperative burn plans need to be developed so multiple agencies can participate in prescribe burn projects.

IFMAT IV site visit of the Hoopa sawmill producing tribal wood products, California.

PHOTO CREDIT: VINCENT CORRAO



Task K Findings and Recommendations

K11

Finding

Forest health, habitat improvement, and risk reduction projects performed under co-management agreements may include precommercial and commercial thinning, hazardous fuels reduction, creation of fuel breaks, wildlife and fish habitat improvement, and watershed restoration activities.

- Under existing infrastructure, there is no or minimal opportunity to recover economic value from the harvest of forest material generated from these activities. Many tribes indicated that they are constrained from accomplishing beneficial forest health and risk reduction activities on reservation lands and under co-management of federal lands, due to lack of nearby milling or processing infrastructure.
- In most instances, to secure investment in infrastructure, tribes must be able to obtain forest material supply guarantees from geographic areas larger than their reservations. Generally, this larger supply area involves federal forest lands. Efforts to secure the needed supply guarantees from federal agencies have been unsuccessful.
- The federal agencies have either been unable or unwilling to provide long-term supply agreements. Resolving the forest material supply issue to enable infrastructure development would benefit both tribes and federal land managers.

Recommendation

- A review needs to be conducted to identify reasons why federal agencies cannot provide long-term forest material supply agreements to tribes needed for infrastructure development. The review should revisit the 1944 Sustained Yield Forest Management Act which authorized establishment of sustained yield units on federal lands to promote a stable supply of timber in support of mills and communities.
- Necessary policy, regulatory, and/or statutory reform should be pursued to resolve this matter. This may require congressional action as past federal policies have constrained or eliminated timber supplies causing the closure of many wood processing facilities within the reservations' forested areas.

Task K Findings and Recommendations

K12

Finding

In addition to insufficient forest material supply, infrastructure investment opportunities are limited because tribes cannot secure the start-up funding needed for the required infrastructure facilities.

Recommendation

- Conduct an independent review of start-up funding requirements to establish long-term landscape scale co-management projects (TFPA/GNA cross boundary projects) including necessary infrastructure development. In the review identify potential sources of required start-up funding.



Cow Creek sawmill processing wildfire-salvaged timber from a recent wildfire in Oregon.

PHOTO CREDIT: VINCENT CORRAO



Literature Cited

- 25 CFR § 163.36 (b) <https://www.ecfr.gov/current/title-25/chapter-I/subchapter-H/part-163/subpart-B/section-163.36>.
- 25 C.F.R. § 1000.105 – § 1000.109. <https://www.ecfr.gov/current/title-25/chapter-VI/part-1000/subpart-E/subject-group-ECFRf14b7127950b75e>.
- Chamberlain, James L.; Emery, Marla R.; Patel-Weynand, Toral. 2018. Assessment of nontimber forest products in the United States under changing conditions. General Technical Report SRS-GTR-232. USDA Forest Service, Southern Research Station. 268p. <https://doi.org/10.2737/SRS-GTR-232>.
- Emery, Marla R.; Pierce, Alan R. 2005. Interrupting the telos: locating subsistence in contemporary US forests. *Environment and Planning* 37:981-993.
- Emery, Marla R.; Wrobel, Alexandra; Hansen, Mark H.; Dockry, Michael; Moser, W. Keith; Stark, Kekek Jason; Gilbert, Jonathan H. 2014. Using traditional ecological knowledge as a basis for targeted forest inventory: paper birch (*Betula papyrifera*) in the US Great Lakes Region. *Journal of Forestry*. 112(2): 207-214.
- Garibaldi, A. and N. Turner. 2004. The Nature of Culture and Keystones. *Ecology and Society* 9(3): r2. [online] URL: <http://www.ecologyandsociety.org/vol9/iss3/resp2/>.
- Garnett ST, Burgess ND, Fa JE, Fernández-Llamazares Á, Molnár Z, Robinson CJ, Watson JE, Zander KK, Austin B, Brondizio ES, Collier NF. A spatial overview of the global importance of Indigenous lands for conservation. *Nature Sustainability*. 2018 Jul;1(7):369-74.
- Indian Forest Management Assessment Team for the Intertribal Timber Council. (1993). An Assessment of Indian Forests and Forest Management in the United States (IFMAT I). Intertribal Timber Council.
- Indian Forest Management Assessment Team for the Intertribal Timber Council. (2003). An Assessment of Indian Forests and Forest Management in the United States (IFMAT II). Intertribal Timber Council.
- Indian Forest Management Assessment Team for the Intertribal Timber Council. (2013). Assessment of Indian Forests and Forest Management in the United States (IFMAT III). Intertribal Timber Council.
- Institute for Tribal Environmental Professionals. 2021. Status of Tribes and Climate Change Report. Marks-Marino, D. (ed.). Status of Tribes and Climate Change Working Group (STACCWG). Northern Arizona University, Flagstaff, AZ. [Marks-Marino, D. (ed.)]
- Institute for Tribal Environmental Professionals (ITEP). 2014. Guidelines for Considering Traditional Knowledges in Climate Change Initiatives (ITEP 2014). Climate and Traditional Knowledges Workgroup (CTKW). Version 1, September 2014.
- International Panel on Climate Change (IPCC). (2007). Climate Change 2007 – Impacts, Adaptation and Vulnerability Contribution of Working Group II to the Fourth Assessment Report of the IPCC. 978 0521 88010-7 Hardback; 978 0521 70597-4 Paperback).
- Intertribal Timber Council (ITC). (2018). Workforce Development Strategic Plan, 2018-2022. https://www.itcnet.org/issues_projects/issues_2/workforce-development/workforce-development.html.
- Jantarasami, L.C., R. Novak, R. Delgado, E. Marino, S. McNeeley, C. Narducci, J. Raymond-Yakoubian, L. Singletary, and K. Powys Whyte, 2018: Tribes and Indigenous Peoples. In *Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II* [Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, pp. 572–603. doi: 10.7930/NCA4.2018.CH15.

Madsen, Trygve and Chadsey, Matt. Cost of Wildfire Preparedness and Suppression Activities on ODF-Protected Lands in Oregon. Earth Economics, 2022. Prepared for Department of Administrative Services, State of Oregon.

National Congress of American Indians (NCAI). 2018. Resolution #DEN-18-01. Tribal Carbon Credits as a Trust Resource. October 2018.

National Indian Carbon Coalition. 2023. A joint project of Indian Land Tenure Foundation and Intertribal Agriculture Council. <https://www.indiancarbon.org/>.

Public Law 93-638 Indian Self-Determination and Education Assistance Act, as Amended. https://www.bia.gov/sites/default/files/dup/assets/bia/ots/ots/pdf/Public_Law93-638.pdf.

Schuster R, Germain RR, Bennett JR, Reo NJ, Arcese P. Vertebrate biodiversity on indigenous-managed lands in Australia, Brazil, and Canada equals that in protected areas. Environmental Science & Policy. 2019 Nov 1;101:1-6.

State of Washington. Department of Ecology. Climate Commitment Act. 2023. <https://ecology.wa.gov/Air-Climate/Climate-Commitment-Act>.

State of Washington. Department of Ecology. Tribal Carbon Offsets Assistance Program Grants. Climate Commitment Act. 2023. <https://ecology.wa.gov/About-us/Payments-contracts-grants/Grants-loans/Find-a-grant-or-loan/Tribal-Carbon-Offset-Assistance-Program>.

State of Washington. Department of Ecology. Tribal Consultation Grants. Climate Commitment Act. 2023. <https://ecology.wa.gov/About-us/Payments-contracts-grants/Grants-loans/Find-a-grant-or-loan/Tribal-Capacity-Grants>.

Tribal Adaptation Menu Team. 2019. Dibaginjigaadeg Anishinaabe Ezhitwaad: A Tribal Climate Adaptation Menu. Great Lakes Indian Fish and Wildlife Commission, Odanah, Wisconsin. 54 p.

University of California, Berkeley. Goldman School of Public Policy. 2023. Voluntary Center for Environmental Public Policy. Berkeley Carbon Trading Project. Registry Offsets Database.

US Congress 117th (2021-2022). Public Law 117-58. (H.R.3684). 135 STAT. 429. Nov. 15, 2021 - Infrastructure Investment and Jobs Act.

US Department of Agriculture. 2023. USDA Climate Hubs. <https://www.climatehubs.usda.gov/about-us>.

US Department of Agriculture. Forest Service. 2022. Confronting the Wildfire Crisis. Accessed online on July 14, 2022. available at: <https://www.fs.usda.gov/sites/default/files/Confronting-Wildfire-Crisis.pdf>.

US Department of Agriculture. Forest Service. 2022. Good Neighbor Authority. <https://www.fs.usda.gov/managing-land/farm-bill/gna>.

US Department of Agriculture. Forest Service. 2022. Resource Planning Act (RPA) Assessment.

US Department of Agriculture. Forest Service. Special Project Program Grants. https://www.fs.usda.gov/foresthealth/docs/FHP_Grants/FHP-Special-Project-Program-Funding-Info.pdf. Last accessed March 28, 2023.

US Department of Agriculture. Forest Service. 2022. Wildfire Crisis Implementation Plan. Accessed online on July 14, 2022 available at: <https://www.fs.usda.gov/sites/default/files/Wildfire-Crisis-Implementation-Plan.pdf>.

US Department of Commerce. National Oceanic and Atmospheric Administration (NOAA). Climate Program Office News. Oct. 14, 2022. NOAA's RISA announces new program name and expanded national impact as "Climate Adaptation Partnerships (CAP)"

US Department of the Interior. 2019. Fiscal Year 2020, The Interior Budget in Brief. https://www.doi.gov/sites/doi.gov/files/uploads/2020_highlights_book.pdf.

US Department of the Interior. Bureau of Indian Affairs. Burned Area Emergency Response. <https://www.bia.gov/bia/ots/dfwfm/bwfm/fuels-management/burned-area-emergency-response>.

US Department of the Interior. Bureau of Indian Affairs. 2020 Budget Comparison Table. <https://www.bia.gov/sites/default/files/dup/assets/as-ia/obpm/2020%20BIA%20CompTable-Enacted%20SIGNED.pdf>.

US Department of the Interior. Bureau of Indian Affairs. Guidance for Fiscal Year (FY) 2022 Wildland Fire Management Budget. https://www.bia.gov/sites/default/files/dup/inline-files/03_guidance_for_fiscal_year_fy_2022_wildland_fire_management_budget.pdf.

US Department of the Interior. Bureau of Indian Affairs. Indian Trust Asset Reform Act (ITARA). <https://www.bia.gov/service/itara>.

US Department of the Interior. Bureau of Indian Affairs. Interior/BIA-04: Trust Asset and Accounting Management System (TAAMS). [https://www.doi.gov/privacy/BIA-04_Trust_Asset_and_Accounting_Management_System#:~:text=TAAMS%20is%20the%20system%20of,of%20Indian%20Affairs%20\(BIA\)](https://www.doi.gov/privacy/BIA-04_Trust_Asset_and_Accounting_Management_System#:~:text=TAAMS%20is%20the%20system%20of,of%20Indian%20Affairs%20(BIA)).

US Department of the Interior. Bureau of Indian Affairs. Office of Self Governance. Self Governance Tribes. Accessible online at <https://www.bia.gov/as-ia/osg>.

US Department of the Interior. Bureau of Indian Affairs. Office of Trust Services, Division of Forestry and Wildland Fire Management. 2020. Report on the Status of Indian Forest Lands. Fiscal Year 2019. Washington, DC. May 2020.

US Department of the Interior. Bureau of Indian Affairs. 2023. Branch of Tribal Climate Resilience. <https://www.bia.gov/bia/ots/tcr>.

US Department of the Interior. Bureau of Indian Affairs. 2022. Carbon Sequestration Agreement Policy. National Policy Memorandum. Office of Trust Services. Division of Forestry and Wildland Fire Management. NPM-TRUS-47 Effective: 11/04/2022 to 11/04/2023.

US Department of the Interior. US Geological Survey. Climate Adaptation Science Centers. 2023. <https://www.usgs.gov/programs/climate-adaptation-science-centers>.

US Government Accountability Office. (2019). Tribal Consultation: Additional Federal Actions Needed for Infrastructure Projects (GAO-19-22). Accessible online at <https://www.gao.gov/products/gao-19-22>.

US Government Accountability Office. (2010). Workforce Planning: Interior, EPA, and the Forest Service Should Strengthen Linkages to Their Strategic Plans and Improve Evaluation (GAO-10-413). Retrieved from <https://www.gao.gov/assets/gao-10-413.pdf>.

US Senate, Committee on Indian Affairs. November 11, 2021. Infrastructure Investment and Jobs Act - Bipartisan Support for Tribes and Native Communities. Resource Guide and Top Line Summary.

US Senate, Committee on Indian Affairs. August 16, 2022. Inflation Reduction Act of 2022. Provisions Supporting Tribes and Native Communities. Resource Guide.

Vaughn, K. J., Porensky, L. M., Wilkerson, M. L., Balachowski, J., Peffer, E., Riginos, C. & Young, T. P. (2010) Restoration Ecology. *Nature Education Knowledge* 3(10):66.

Vose et al. 2019. Vose, James, Peterson, D., Domke, G., Fettig, C.J., Joyce, L., Keane, R., Luce, C., Prestemon, J., Band, L.E., Clark, J., Cooley, N.E., D'Amato, A., and Halofsky, J. Chapter 6: Forests. Fourth National Climate Assessment. 10.7930/NCA4.2018.CH6.

Westphal, Lynne M; Dockry, Michael J; Kenefic, Laura S; Sachdeva, Sonya S; Rhodeland, Amelia; Locke, Dexter H; Kern, Christel C; Huber-Stearns, Heidi R; Coughlan, Michael R. 2022. USDA Forest Service Employee Diversity During a Period of Workforce Contraction. *Journal of Forestry*. 120(4): 434-452. <https://doi.org/10.1093/jofore/fvab071>.

White House. Fact Sheet. Nov. 18, 2021. President Biden's Bipartisan Infrastructure Law advances economic and public health opportunities tribal communities.

White House. Fact Sheet. Aug. 18, 2022. How the Inflation Reduction Act helps tribal communities.

White House. Executive Office of the President. Office of Science and Technology Policy and Council on Environmental Quality. Nov. 15, 2021. Memorandum on Indigenous Ecological Knowledge in Federal Decision Making.

Wu, J. (2013). Landscape Ecology. In: Leemans, R. (eds) Ecological Systems. Springer, New York, NY.
https://doi.org/10.1007/978-1-4614-5755-8_11.

Wuebbles, D.J., D.R. Easterling, K. Hayhoe, T. Knutson, R.E. Kopp, J.P. Kossin, K.E. Kunkel, A.N. LeGrande, C. Mears, W.V. Sweet, P.C. Taylor, R.S. Vose, and M.F. Wehner, 2017: Our globally changing climate. In Climate Science Special Report: Fourth National Climate Assessment, Volume I. D.J. Wuebbles, D.W. Fahey, K.A. Hibbard, D.J. Dokken, B.C. Stewart, and T.K. Maycock, Eds., U.S. Global Change Research Program, pp. 35-72, doi:10.7930/J08S



Appendices

Appendix i

National Indian Forest Resources Management Act Statute Legal Authority

Source: <https://uscode.house.gov/view.xhtml?path=/prelim@title25/chapter33&edition=prelim>

CHAPTER 33—NATIONAL INDIAN FOREST RESOURCES MANAGEMENT

Sec.

- 3101. Findings.
- 3102. Purposes.
- 3103. Definitions.
- 3104. Management of Indian forest land.
- 3105. Forest management deduction.
- 3106. Forest trespass.
- 3107. Direct payment of forest products receipts.
- 3108. Secretarial recognition of tribal laws.
- 3109. Indian forest land assistance account.
- 3110. Tribal forestry programs.
- 3111. Assessment of Indian forest land and management programs.
- 3112. Alaska Native technical assistance program.
- 3113. Establishment of Indian and Alaska Native forestry education assistance.
- 3114. Postgraduation recruitment, education and training programs.
- 3115. Cooperative agreement between Department of the Interior and Indian tribes.
- 3115a. Tribal forest assets protection.
- 3115b. Tribal forest management demonstration project.
- 3116. Obligated service; breach of contract.
- 3117. Authorization of appropriations.
- 3118. Regulations.
- 3119. Severability.
- 3120. Trust responsibility.

§3101. Findings

The Congress finds and declares that—

- (1) the forest lands of Indians are among their most valuable resources and Indian forest lands—
 - (A) encompass more than 15,990,000 acres, including more than 5,700,000 acres of commercial forest land and 8,700,000 acres of woodland,
 - (B) are a perpetually renewable and manageable resource,
 - (C) provide economic benefits, including income, employment, and subsistence, and
 - (D) provide natural benefits, including ecological, cultural, and esthetic values;
- (2) the United States has a trust responsibility toward Indian forest lands;
- (3) existing Federal laws do not sufficiently assure the adequate and necessary trust management of Indian forest lands;
- (4) the Federal investment in, and the management of, Indian forest land is significantly below the level of investment in, and management of, National Forest Service forest land, Bureau of Land Management forest land, or private forest land;

(5) tribal governments make substantial contributions to the overall management of Indian forest land; and

(6) there is a serious threat to Indian forest lands arising from trespass and unauthorized harvesting of Indian forest land resources.

(Pub. L. 101–630, title III, §302, Nov. 28, 1990, 104 Stat. 4532.)

STATUTORY NOTES AND RELATED SUBSIDIARIES

SHORT TITLE OF 2004 AMENDMENT

Pub. L. 108–278, §1, July 22, 2004, 118 Stat. 868, provided that: “This Act [enacting section 3115a of this title and enacting provisions set out as a note under section 3115b of this title] may be cited as the ‘Tribal Forest Protection Act of 2004’.”

SHORT TITLE

Pub. L. 101–630, title III, §301, Nov. 28, 1990, 104 Stat. 4532, provided that: “This title [enacting this chapter] may be cited as the ‘National Indian Forest Resources Management Act’.”

§3102. Purposes

The purposes of this chapter are to—

(1) allow the Secretary of the Interior to take part in the management of Indian forest lands, with the participation of the lands’ beneficial owners, in a manner consistent with the Secretary’s trust responsibility and with the objectives of the beneficial owners;

(2) clarify the authority of the Secretary to make deductions from the proceeds of sale of Indian forest products, assure the use of such deductions on the reservation from which they are derived solely for use in forest land management activities, and assure that no other deductions shall be collected;

(3) increase the number of professional Indian foresters and related staff in forestry programs on Indian forest land; and

(4) provide for the authorization of necessary appropriations to carry out this chapter for the protection, conservation, utilization, management, and enhancement of Indian forest lands.

(Pub. L. 101–630, title III, §303, Nov. 28, 1990, 104 Stat. 4532.)

§3103. Definitions

For the purposes of this chapter, the term—

(1) “Alaska Native” means Native as defined in section 1602(b) of title 43;

(2) “forest” means an ecosystem of at least one acre in size, including timberland and woodland, which—

(A) is characterized by a more or less dense and extensive tree cover,

(B) contains, or once contained, at least ten percent tree crown cover, and

(C) is not developed or planned for exclusive nonforest use;

(3) “Indian forest land” means Indian lands, including commercial and non-commercial timberland and woodland, that are considered chiefly valuable for the production of forest products or to maintain watershed or other land values enhanced by a forest cover, regardless whether a formal inspection and land classification action has been taken;

(4) “forest land management activities” means all activities performed in the management of Indian forest lands, including—

(A) all aspects of program administration and executive direction such as—

(i) development and maintenance of policy and operational procedures, program oversight, and evaluation,

(ii) securing of legal assistance and handling of legal matters,

(iii) budget, finance, and personnel management, and

(iv) development and maintenance of necessary data bases and program reports;

(B) all aspects of the development, preparation and revision of forest inventory and management plans, including aerial photography, mapping, field management inventories and re-inventories, inventory analysis, growth studies, allowable annual cut calculations, environmental assessment, and forest history, consistent with and reflective of tribal integrated resource management plans;

- (C) forest land development, including forestation, thinning, tree improvement activities, and the use of silvicultural treatments to restore or increase growth and yield to the full productive capacity of the forest environment;
- (D) protection against losses from wildfire, including acquisition and maintenance of fire fighting equipment and fire detection systems, construction of firebreaks, hazard reduction, prescribed burning, and the development of cooperative wildfire management agreements;
- (E) protection against insects and disease, including—
- (i) all aspects of detection and evaluation,
 - (ii) preparation of project proposals containing project description, environmental assessments and statements, and cost-benefit analyses necessary to secure funding,
 - (iii) field suppression operations, and
 - (iv) reporting;
- (F) assessment of damage caused by forest trespass, infestation or fire, including field examination and survey, damage appraisal, investigation assistance, and report, demand letter, and testimony preparation;
- (G) all aspects of the preparation, administration, and supervision of timber sale contracts, paid and free use permits, and other Indian forest product harvest sale documents including—
- (i) cruising, product marking, silvicultural prescription, appraisal and harvest supervision,
 - (ii) forest product marketing assistance, including evaluation of marketing and development opportunities related to Indian forest products and consultation and advice to tribes, tribal and Indian enterprises on maximization of return on forest products,
 - (iii) archeological, historical, environmental and other land management reviews, clearances, and analyses,
 - (iv) advertising, executing, and supervising contracts,
 - (v) marking and scaling of timber, and
 - (vi) collecting, recording and distributing receipts from sales;
- (H) provision of financial assistance for the education of Indians enrolled in accredited programs of postsecondary and postgraduate forestry and forestry-related fields of study, including the provision of scholarships, internships, relocation assistance, and other forms of assistance to cover educational expenses;
- (I) participation in the development and implementation of tribal integrated resource management plans, including activities to coordinate current and future multiple uses of Indian forest lands;
- (J) improvement and maintenance of extended season primary and secondary Indian forest land road systems; and
- (K) research activities to improve the basis for determining appropriate management measures to apply to Indian forest lands;
- (5) “forest management plan” means the principal document, approved by the Secretary, reflecting and consistent with a tribal integrated resource management plan, which provides for the regulation of the detailed, multiple-use operation of Indian forest land by methods assuring that such lands remain in a continuously productive state while meeting the objectives of the tribe and which shall include—
- (A) standards setting forth the funding and staffing requirements necessary to carry out each management plan, with a report of current forestry funding and staffing levels; and
 - (B) standards providing quantitative criteria to evaluate performance against the objectives set forth in the plan;
- (6) “forest product” means—
- (A) timber,
 - (B) a timber product, including lumber, lath, crating, ties, bolts, logs, pulpwood, fuelwood, posts, poles and split products,
 - (C) bark,
 - (D) Christmas trees, stays, branches, firewood, berries, mosses, pinyon nuts, roots, acorns, syrups, wild rice, and herbs,
 - (E) other marketable material, and
 - (F) gravel which is extracted from, and utilized on, Indian forest lands;
- (7) “forest resources” means all the benefits derived from Indian forest lands, including forest products, soil productivity, water, fisheries, wildlife, recreation, and aesthetic or other traditional values of Indian forest lands;
- (8) “forest trespass” means the act of illegally removing forest products from, or illegally damaging forest products on, forest lands;

- (9) “Indian” means a member of an Indian tribe;
- (10) “Indian land” means land title to which is held by—
- (A) the United States in trust for an Indian, an individual of Indian or Alaska Native ancestry who is not a member of a federally-recognized Indian tribe, or an Indian tribe, or
 - (B) an Indian, an individual of Indian or Alaska Native ancestry who is not a member of a federally recognized tribe, or an Indian tribe subject to a restriction by the United States against alienation;
- (11) “Indian tribe” or “tribe” means any Indian tribe, band, nation, Pueblo or other organized group or community which is recognized as eligible for the special programs and services provided by the United States to Indians because of their status as Indians and shall mean, where appropriate, the recognized tribal government of such tribe’s reservation;
- (12) “reservation” includes Indian reservations established pursuant to treaties, Acts of Congress or Executive orders, public domain Indian allotments, and former Indian reservations in Oklahoma;
- (13) “Secretary” means the Secretary of the Interior;
- (14) “sustained yield” means the yield of forest products that a forest can produce continuously at a given intensity of management; and
- (15) “tribal integrated resource management plan” means a document, approved by an Indian tribe and the Secretary, which provides coordination for the comprehensive management of such tribe’s natural resources.

(Pub. L. 101–630, title III, §304, Nov. 28, 1990, 104 Stat. 4533.)

§3104. Management of Indian forest land

(a) Management activities

The Secretary shall undertake forest land management activities on Indian forest land, either directly or through contracts, cooperative agreements, or grants under the Indian Self-Determination Act [25 U.S.C. 5321 et seq.].

(b) Management objectives

Indian forest land management activities undertaken by the Secretary shall be designed to achieve the following objectives—

- (1) the development, maintenance, and enhancement of Indian forest land in a perpetually productive state in accordance with the principles of sustained yield and with the standards and objectives set forth in forest management plans by providing effective management and protection through the application of sound silvicultural and economic principles to—
 - (A) the harvesting of forest products,
 - (B) forestation,
 - (C) timber stand improvement, and
 - (D) other forestry practices;
- (2) the regulation of Indian forest lands through the development and implementation, with the full and active consultation and participation of the appropriate Indian tribe, of forest management plans which are supported by written tribal objectives and forest marketing programs;
- (3) the regulation of Indian forest lands in a manner that will ensure the use of good method and order in harvesting so as to make possible, on a sustained yield basis, continuous productivity and a perpetual forest business;
- (4) the development of Indian forest lands and associated value-added industries by Indians and Indian tribes to promote self-sustaining communities, so that Indians may receive from their Indian forest land not only stumpage value, but also the benefit of all the labor and profit that such Indian forest land is capable of yielding;
- (5) the retention of Indian forest land in its natural state when an Indian tribe determines that the recreational, cultural, aesthetic, or traditional values of the Indian forest land represents the highest and best use of the land;
- (6) the management and protection of forest resources to retain the beneficial effects to Indian forest lands of regulating water run-off and minimizing soil erosion; and
- (7) the maintenance and improvement of timber productivity, grazing, wildlife, fisheries, recreation, aesthetic, cultural and other traditional values.

(Pub. L. 101–630, title III, §305, Nov. 28, 1990, 104 Stat. 4535.)

EDITORIAL NOTES
REFERENCES IN TEXT

The Indian Self-Determination Act, referred to in subsec. (a), is title I of [Pub. L. 93-638, Jan. 4, 1975, 88 Stat. 2206](#), which is classified principally to subchapter I (§5321 et seq.) of chapter 46 of this title. For complete classification of this Act to the Code, see Short Title note set out under section 5301 of this title and Tables.

§3105. Forest management deduction

(a) Withholding of deduction

Pursuant to the authority of section 413 of this title, the Secretary shall withhold a reasonable deduction from the gross proceeds of sales of forest products harvested from Indian forest land under a timber sale contract, permit, or other harvest sale document, which has been approved by the Secretary, to cover in whole or part the cost of managing and protecting such Indian forest land.

(b) Amount of deduction

Deductions made pursuant to subsection (a) shall not exceed the lesser amount of—

(1) 10 percent of gross proceeds, or

(2) the percentage of gross proceeds collected on November 28, 1990, as forest management deductions by the Secretary on such sales of Indian forest products, unless the appropriate Indian tribe consents to an increase in the deductions.

(c) Use of deduction

The full amount of any deduction collected by the Secretary shall be expended according to an approved expenditure plan, approved by the Secretary and the appropriate Indian tribe, for the performance of forest land management activities on the reservation from which such deductions are collected and shall be made available to the tribe, upon its request, by contract or agreement for the performance of such activities.

(d) Limitations

(1) Forest management deductions withheld pursuant to this section shall not be available to—

(A) cover the costs that are paid from funds appropriated specifically for fire suppression or pest control, or

(B) otherwise offset Federal appropriations for meeting the Federal trust responsibility for management of Indian forest lands.

(2) No other forest management deductions derived from Indian forest lands shall be collected to be covered into the general funds of the United States Treasury.

(Pub. L. 101-630, title III, §306, Nov. 28, 1990, 104 Stat. 4536.)

§3106. Forest trespass

(a) Civil penalties; regulations

Not later than 18 months from November 28, 1990, the Secretary shall issue regulations that—

(1) establish civil penalties for the commission of forest trespass which provide for—

(A) collection of the value of the products illegally removed plus a penalty of double their value,

(B) collection of the costs associated with damage to the Indian forest land caused by the act of trespass, and

(C) collection of the costs associated with enforcement of the regulations, including field examination and survey, damage appraisal, investigation assistance and reports, witness expenses, demand letters, court costs, and attorney fees;

(2) designate responsibility with the Department of the Interior for the detection and investigation of forest trespass; and

(3) set forth responsibilities and procedures for the assessment and collection of civil penalties.

(b) Treatment of proceeds

The proceeds of civil penalties collected under this section shall be treated as proceeds from the sale of forest products from the Indian forest lands upon which such trespass occurred.

(c) Concurrent jurisdiction

Indian tribes which adopt the regulations promulgated by the Secretary pursuant to subsection (a) shall have concurrent civil jurisdiction to enforce the provisions of this section and the regulation promulgated thereunder. The Bureau of Indian Affairs and other agencies of the Federal Government shall, at the request of the tribe, defer to tribal prosecutions of forest trespass cases. Tribal court judgments regarding

forest trespass shall be entitled to full faith and credit in Federal and State courts to the same extent as a Federal court judgment obtained under this section.

(Pub. L. 101–630, title III, §307, Nov. 28, 1990, 104 Stat. 4537.)

§3107. Direct payment of forest products receipts

(a) Regulations

Notwithstanding any other law, the Secretary shall, within 1 year from November 28, 1990, promulgate regulations providing for the payment of the receipts from the sale of Indian forest products as provided in this section.

(b) Payment into a bank depository

Upon the request of an Indian tribe, the Secretary shall provide that the purchaser of the forest products of such tribe, which are harvested under a timber sale contract, permit or other harvest sale document which has been approved by the Secretary, shall make prompt direct payments of the gross proceeds of sales of such forest products, less any amounts segregated as forest management deductions pursuant to section 3105 of this title, into a bank depository account designated by such Indian tribe.

(Pub. L. 101–630, title III, §308, Nov. 28, 1990, 104 Stat. 4537.)

§3108. Secretarial recognition of tribal laws

Subject to the Secretary's responsibilities as reflected in sections 3101(2) and 3102(1) of this title and unless otherwise prohibited by Federal statutory law, the Secretary shall comply with tribal laws pertaining to Indian forest lands, including laws regulating the environment or historic or cultural preservation, and shall cooperate with the enforcement of such laws on Indian forest lands. Such cooperation shall include—

- (1) assistance in the enforcement of such laws;
- (2) provision of notice of such laws to persons or entities undertaking activities on Indian forest lands; and
- (3) upon the request of an Indian tribe, the appearance in tribal forums.

(Pub. L. 101–630, title III, §309, Nov. 28, 1990, 104 Stat. 4538.)

§3109. Indian forest land assistance account

(a) Establishment

At the request of an Indian tribe, the Secretary may establish a special Indian forest land assistance account within the tribe's trust fund account to fund the Indian forest land management activities of such tribe.

(b) Deposits and expenditures

- (1) The Secretary may deposit into the Indian forest land assistance account established pursuant to subsection (a) any funds received by the Secretary or in the Secretary's possession from—
 - (A) non-Federal sources, if such funds are related to activities on or for the Indian forest lands of such tribe's reservation,
 - (B) donations and contributions,
 - (C) unobligated forestry appropriations for the benefit of such Indian tribe, and
 - (D) user fees or other funds transferred under Federal interagency agreements if otherwise authorized by Federal law and, if such funds are related to activities on or for the Indian forest lands of such tribe's reservation.

Funds deposited in such account shall be for the purpose of conducting forest land management activities on the Indian forest lands of such tribe.

- (2) Funds in the Indian forest land assistance account and any interest or other income earned thereon shall remain available until expended and shall not be available to otherwise offset Federal appropriations for meeting the Federal responsibility for management of Indian forest lands.

(c) Audits

At the request of an Indian tribe or upon the Secretary's own volition, the Secretary may conduct audits of the Indian forest land assistance account and shall publish the results of such audit.

(Pub. L. 101–630, title III, §310, Nov. 28, 1990, 104 Stat. 4538.)

§3110. Tribal forestry programs

(a) Establishment

The Secretary shall establish within the Bureau of Indian Affairs a program to provide financial support to forestry programs established by an Indian tribe.

(b) Support allocation formula; criteria

(1) The Secretary, with the participation of Indian tribes with Indian forest lands, shall establish, and promulgate by regulations, a formula—

(A) for the determination of Indian tribes eligible for such support,

(B) for the provision of levels of assistance for the forestry programs of such tribes, and

(C) the allocation of base support funds to such tribes under the program established pursuant to subsection (a).

(2) The formula established pursuant to this subsection shall provide funding necessary to support—

(A) one professional forester, including fringe benefits and support costs, for each eligible tribe, and

(B) one additional professional forester or forest technician, including fringe benefits and support costs, for each level of assistance for which an eligible Indian tribe qualifies.

(3) In any fiscal year that appropriations are not sufficient to fully fund tribal forestry programs at each level of assistance under the formula required to be established in this section, available funds for each level of assistance shall be evenly divided among the tribes qualifying for that level of assistance.

(Pub. L. 101-630, title III, §311, Nov. 28, 1990, 104 Stat. 4538.)

§3111. Assessment of Indian forest land and management programs

(a) Initial assessment

(1) Within 1 year after November 28, 1990, the Secretary, in consultation with affected Indian tribes, shall enter into a contract with a non-Federal entity knowledgeable in forest management practices on Federal and private lands to conduct an independent assessment of Indian forest lands and Indian forest land management practices.

(2) Such assessment shall be national in scope and shall include—

(A) an in-depth analysis of management practices on, and the level of funding for, specific Indian forest land compared with similar Federal and private forest lands,

(B) a survey of the condition of Indian forest lands, including health and productivity levels,

(C) an evaluation of the staffing patterns of forestry organizations of the Bureau of Indian Affairs and of Indian tribes,

(D) an evaluation of procedures employed in timber sales administration, including preparation, field supervision, and accountability for proceeds,

(E) an analysis of the potential for reducing or eliminating relevant administrative procedures, rules and policies of the Bureau of Indian Affairs consistent with the Federal trust responsibility,

(F) a comprehensive review of the adequacy of Indian forest land management plans, including their compatibility with applicable tribal integrated resource management plans and their ability to meet tribal needs and priorities,

(G) an evaluation of the feasibility and desirability of establishing minimum standards against which the adequacy of the forestry programs of the Bureau of Indian Affairs in fulfilling its trust responsibility to Indian tribes can be measured, and

(H) a recommendation of any reforms and increased funding levels necessary to bring Indian forest land management programs to a state-of-the-art condition.

(3) Such assessment shall include specific examples and comparisons from each of the regions of the United States where Indian forest lands are located.

(4) The initial assessment required by this subsection shall be completed no later than 36 months following November 28, 1990. Upon completion, the assessment shall be submitted to the Committee on Natural Resources of the United States House of Representatives and the Committee on Indian Affairs of the United States Senate and shall be made available to Indian tribes.

(b) Periodic assessments

On each 10-year anniversary of November 28, 1990, the Secretary shall provide for an independent assessment of Indian forest lands and Indian forest land management practices under the criteria established in subsection (a) which shall include analyses measured against findings in previous assessments.

(c) Status report to Congress

The Secretary shall submit, within 1 year of the first full fiscal year after November 28, 1990, and within 6 months of the end of each succeeding fiscal year, a report to the Committee on Natural Resources of the United States House of Representatives, the Committee on Indian Affairs of the United States Senate, and to the affected Indian tribes a report on the status of Indian forest lands with respect to standards, goals and objectives set forth in approved forest management plans for each Indian tribe with Indian forest lands. The report shall identify the amount of Indian forest land in need of forestation or other silviculture treatment and the quantity of timber available for sale, offered for sale, and sold for each Indian tribe.

(d) Assistance from Secretary of Agriculture

The Secretary of Agriculture, through the Forest Service, is authorized to provide, upon the request of the Secretary of the Interior, on a nonreimbursable basis, technical assistance in the conduct of such research and evaluation activities as may be necessary for the completion of any reports or assessments required by this chapter.

(Pub. L. 101–630, title III, §312, Nov. 28, 1990, 104 Stat. 4539; Pub. L. 103–437, §10(f), Nov. 2, 1994, 108 Stat. 4589.)

EDITORIAL NOTES

AMENDMENTS

1994—Subsec. (a)(4). Pub. L. 103–437, §10(f)(1), substituted “Committee on Indian” for “Select Committee on Indian” and “Natural Resources” for “Interior and Insular Affairs”.

Subsec. (c). Pub. L. 103–437, inserted “the” after “report to” and substituted “Committee on Indian” for “Select Committee on Indian” and “Natural Resources” for “Interior and Insular Affairs”.

§3112. Alaska Native technical assistance program

(a) Establishment

The Secretary, in consultation with the village and regional corporations established pursuant to the Alaska Native Claims Settlement Act (43 U.S.C. 1601 et seq.), shall establish a program of technical assistance for such corporations to promote the sustained yield management of their forest resources. Such technical assistance shall also be available to promote local processing and other value-added activities with such forest resources.

(b) Indian Self-Determination Act

The technical assistance to be provided by the Secretary pursuant to subsection (a) shall be made available through contracts, grants or agreements entered into in accordance with, and made available to entities eligible for, such contracts, grants, or agreements under the Indian Self-Determination Act [25 U.S.C. 5321 et seq.].

(Pub. L. 101–630, title III, §313, Nov. 28, 1990, 104 Stat. 4540.)

EDITORIAL NOTES

REFERENCES IN TEXT

The Alaska Native Claims Settlement Act, referred to in subsec. (a), is Pub. L. 92–203, Dec. 18, 1971, 85 Stat. 688, as amended, which is classified generally to chapter 33 (§1601 et seq.) of Title 43, Public Lands. For complete classification of this Act to the Code, see Short Title note set out under section 1601 of Title 43 and Tables.

The Indian Self-Determination Act, referred to in subsec. (b), is title I of Pub. L. 93–638, Jan. 4, 1975, 88 Stat. 2206, which is classified principally to subchapter I (§5321 et seq.) of chapter 46 of this title. For complete classification of this Act to the Code, see Short Title note set out under section 5301 of this title and Tables.

§3113. Establishment of Indian and Alaska Native forestry education assistance

(a) Forester intern program

(1) Notwithstanding the provisions of title 5 governing appointments in the competitive service, the Secretary shall establish and maintain in the Bureau of Indian Affairs at least 20 forester intern positions for Indian and Alaska Native students.

(2) For purposes of this subsection, the term “forester intern” means an Indian or Alaska Native who—

(A) is acquiring necessary academic qualifications to become a forester or a professional trained in forestry-related fields, and

(B) is appointed to one of the positions established under paragraph (1).

(3) The Secretary shall pay all costs for tuition, books, fees and living expenses incurred by a forester intern while attending an approved post-secondary or graduate school in a full-time forestry-related curriculum.

(4) A forester intern shall be required to enter into an obligated service agreement to serve as a professional forester or other forestry-related professional with the Bureau of Indian Affairs, an Indian tribe, or a tribal forest-related enterprise for 2 years for each year of education for which the Secretary pays the intern's educational costs under paragraph (3) of this subsection.

(5) A forester intern shall be required to report for service with the Bureau of Indian Affairs during any break in attendance at school of more than 3 weeks duration. Time spent in such service shall be counted toward satisfaction of the intern's obligated service agreement.

(b) Cooperative education program

(1) The Secretary shall maintain, through the Bureau of Indian Affairs, a cooperative education program for the purpose of recruiting promising Indian and Alaska Native students who are enrolled in secondary schools, tribally-controlled community colleges, and other post-secondary or graduate schools for employment as a professional forester or other forestry-related professional with the Bureau of Indian Affairs, an Indian tribe, or a tribal forest-related enterprise.

(2) The cooperative educational program that is to be maintained under paragraph (1) shall be modeled on and shall have essentially the same features of the program operated on November 28, 1990, pursuant to chapter 308 of the Federal Personnel Manual of the Office of Personnel Management.

(3) Under the cooperative agreement program that is to be maintained under paragraph (1), the Secretary shall pay all costs for tuition, books, and fees of an Indian or Alaska Native student who—

(A) is enrolled in a course of study at an education institution with which the Secretary has entered into a cooperative agreement, and

(B) is interested in a career with the Bureau of Indian Affairs, an Indian tribe or a tribal enterprise in the management of Indian forest land.

(4) Financial need shall not be a requirement to receive assistance under the cooperative agreement program that is to be maintained under this subsection.

(5) A recipient of assistance under the cooperative education program that is to be maintained under this subsection shall be required to enter into an obligated service agreement to serve as a professional forester or other forestry-related professional with the Bureau of Indian Affairs, an Indian tribe, or a tribal forest-related enterprise for one year for each year for which the Secretary pays the recipient's educational costs pursuant to paragraph (3).

(c) Scholarship program

(1) The Secretary is authorized to grant forestry scholarships to Indians and Alaska Natives enrolled in accredited programs for post-secondary and graduate forestry and forestry-related programs of study as full-time students.

(2) A recipient of a scholarship under paragraph (1) shall be required to enter into an obligated service agreement with the Secretary in which the recipient agrees to accept employment for one year for each year the recipient received a scholarship, following completion of the recipient's forestry or forestry-related course of study, with

(A) the Bureau of Indian Affairs;

(B) a forestry program conducted under a contract, grant, or cooperative agreement entered into under the Indian Self-Determination Act [25 U.S.C. 5321 et seq.];

(C) an Indian enterprise engaged in a forestry or forestry-related business; or

(D) an Indian tribe's forestry-related program.

(3) The Secretary shall not deny scholarship assistance under this subsection solely on the basis of an applicant's scholastic achievement if the applicant has been admitted to and remains in good standing in an accredited postsecondary or graduate institution.

(d) Forestry education outreach

The Secretary shall conduct, through the Bureau of Indian Affairs, and in consultation with other appropriate local, State and Federal agencies, and in consultation and coordination with Indian tribes, a forestry education outreach program for Indian and Alaska Native youth to explain and stimulate interest in all aspects of Indian forest land management and careers in forestry.

(e) Adequacy of programs

The Secretary shall administer the programs described in this section until a sufficient number of Indians and Alaska Natives are trained to ensure that there is an adequate number of qualified, professional Indian foresters to manage the Bureau of Indian Affairs forestry programs and forestry programs maintained by or for Indian tribes.

(Pub. L. 101–630, title III, §314, Nov. 28, 1990, 104 Stat. 4540.)

EDITORIAL NOTES

REFERENCES IN TEXT

The Indian Self-Determination Act, referred to in subsec. (c)(2)(B), is title I of Pub. L. 93–638, Jan. 4, 1975, 88 Stat. 2206, which is classified principally to subchapter I (§5321 et seq.) of chapter 46 of this title. For complete classification of this Act to the Code, see Short Title note set out under section 5301 of this title and Tables.

§3114. Postgraduation recruitment, education and training programs

(a) Postgraduation recruitment

The Secretary shall establish and maintain a program to attract Indian and Alaska Native professional foresters and forester technicians who have already graduated from their course of postsecondary or graduate education for employment in either the Bureau of Indian Affairs forestry programs or, subject to the approval of the tribe, in tribal forestry programs. According to such regulations as the Secretary may prescribe, such program shall provide for the employment of Indian and Alaska Native professional foresters or forestry technicians in exchange for the Secretary's assumption of the employee's outstanding student loans. The period of employment shall be determined by the amount of the loan that is assumed.

(b) Postgraduate intergovernmental internships

For the purposes of training, skill development and orientation of Indian, Alaska native,¹ and Federal forestry personnel, and the enhancement of tribal and Bureau of Indian Affairs forestry programs, the Secretary shall establish and actively conduct a program for the cooperative internship of Federal, Indian, and Alaska Native forestry personnel. Such program shall—

(1) for agencies within the Department of the Interior—

(A) provide for the internship of Bureau of Indian Affairs, Alaska Native, and Indian forestry employees in the forestry-related programs of other agencies of the Department of the Interior, and

(B) provide for the internship of forestry personnel from other Department of the Interior agencies within the Bureau of Indian Affairs and, with the consent of the tribe, within tribal forestry programs;

(2) for agencies not within the Department of the Interior, provide, pursuant to an interagency agreement, internships within the Bureau of Indian Affairs and, with the consent of the tribe, within a tribal forestry program of other forestry personnel of such agencies who are above their sixth year of Federal service;

(3) provide for the continuation of salary and benefits for participating Federal employees by their originating agency;

(4) provide for salaries and benefits of participating Indian and Alaska Native forestry employees by the host agency; and

(5) provide for a bonus pay incentive at the conclusion of the internship for any participant.

(c) Continuing education and training

The Secretary shall maintain a program within the Division of Forestry of the Bureau of Indian Affairs for the ongoing education and training of Bureau of Indian Affairs, Alaska Native, and Indian forestry personnel. Such program shall provide for—

(1) orientation training for Bureau of Indian Affairs forestry personnel in tribal-Federal relations and responsibilities;

(2) continuing technical forestry education for Bureau of Indian Affairs, Alaska Native, and tribal forestry personnel; and

(3) developmental training of Indian and Alaska Native personnel in forest land based enterprises and marketing.

(Pub. L. 101–630, title III, §315, Nov. 28, 1990, 104 Stat. 4542.)

¹ So in original. Probably should be capitalized.

§3115. Cooperative agreement between Department of the Interior and Indian tribes

(a) Cooperative agreements

(1) To facilitate the administration of the programs and activities of the Department of the Interior, the Secretary is authorized to negotiate and enter into cooperative agreements with Indian tribes to—

- (A) engage in cooperative manpower and job training and development programs,
- (B) to develop and publish cooperative environmental education and natural resource planning materials, and
- (C) to perform land and facility improvements, including forestry and other natural resources protection, fire protection, reforestation, timber stand improvement, debris removal, and other activities related to land and natural resource management.

The Secretary may enter into such agreements when the Secretary determines the public interest will be benefited.

(2) In such cooperative agreements, the Secretary is authorized to advance or reimburse funds to contractors from any appropriated funds available for similar kinds of work or by furnishing or sharing materials, supplies, facilities or equipment without regard to the provisions of section 3324, title 31, relating to the advance of public moneys.

(b) Supervision

In any agreement authorized by this section, Indian tribes and their employees may perform cooperative work under the supervision of the Department of the Interior in emergencies or otherwise as mutually agreed to, but shall not be deemed to be Federal employees other than for purposes of section ¹ 2671 through 2680 of title 28 and section 1 8101 through 8193 of title 5.

(c) Savings provision

Nothing in this chapter shall be construed to limit the authority of the Secretary to enter into cooperative agreements otherwise authorized by law.

(Pub. L. 101–630, title III, §316, Nov. 28, 1990, 104 Stat. 4543.)

¹ So in original. Probably should be “sections”.

§3115a. Tribal forest assets protection

(a) Definitions

In this Act:

(1) Federal land

The term “Federal land” means—

- (A) land of the National Forest System (as defined in section 1609(a) of title 16) administered by the Secretary of Agriculture, acting through the Chief of the Forest Service; and
- (B) public lands (as defined in section 1702 of title 43), the surface of which is administered by the Secretary of the Interior, acting through the Director of the Bureau of Land Management.

(2) Indian forest land or rangeland

The term “Indian forest land or rangeland” means land that—

- (A) is held in trust by, or with a restriction against alienation by, the United States for an Indian tribe or a member of an Indian tribe; and
- (B)(i)(I) is Indian forest land (as defined in section 3103 of this title); or
- (II) has a cover of grasses, brush, or any similar vegetation; or
- (ii) formerly had a forest cover or vegetative cover that is capable of restoration.

(3) Indian tribe

The term “Indian tribe” has the meaning given the term in section 5304 of this title.

(4) Secretary

The term “Secretary” means—

- (A) the Secretary of Agriculture, with respect to land under the jurisdiction of the Forest Service; and
- (B) the Secretary of the Interior, with respect to land under the jurisdiction of the Bureau of Land Management.

(b) Authority to protect Indian forest land or rangeland

(1) In general

Not later than 120 days after the date on which an Indian tribe submits to the Secretary a request to enter into an agreement or contract to carry out a project to protect Indian forest land or rangeland (including a project to restore Federal land that borders on or is adjacent to Indian forest land or rangeland) that meets the criteria described in subsection (c), the Secretary may issue public notice of initiation of any necessary environmental review or of the potential of entering into an agreement or contract with the Indian tribe pursuant to section 347 of the Department of the Interior and Related Agencies Appropriations Act, 1999 (16 U.S.C. 2104 note; Public Law 105–277) (as amended by section 323 of the Department of the Interior and Related Agencies Appropriations Act, 2003 (117 Stat. 275)), or such other authority as appropriate, under which the Indian tribe would carry out activities described in paragraph (3).

(2) Environmental analysis

Following completion of any necessary environmental analysis, the Secretary may enter into an agreement or contract with the Indian tribe as described in paragraph (1).

(3) Activities

Under an agreement or contract entered into under paragraph (2), the Indian tribe may carry out activities to achieve land management goals for Federal land that is—

- (A) under the jurisdiction of the Secretary; and
- (B) bordering or adjacent to the Indian forest land or rangeland under the jurisdiction of the Indian tribe.

(c) Selection criteria

The criteria referred to in subsection (b), with respect to an Indian tribe, are whether—

- (1) the Indian forest land or rangeland under the jurisdiction of the Indian tribe borders on or is adjacent to land under the jurisdiction of the Forest Service or the Bureau of Land Management;
- (2) Forest Service or Bureau of Land Management land bordering on or adjacent to the Indian forest land or rangeland under the jurisdiction of the Indian tribe—
 - (A) poses a fire, disease, or other threat to—
 - (i) the Indian forest land or rangeland under the jurisdiction of the Indian tribe; or
 - (ii) a tribal community; or
 - (B) is in need of land restoration activities;
- (3) the agreement or contracting activities applied for by the Indian tribe are not already covered by a stewardship contract or other instrument that would present a conflict on the subject land; and
- (4) the Forest Service or Bureau of Land Management land described in the application of the Indian tribe presents or involves a feature or circumstance unique to that Indian tribe (including treaty rights or biological, archaeological, historical, or cultural circumstances).

(d) Notice of denial

If the Secretary denies a tribal request under subsection (b)(1), the Secretary may issue a notice of denial to the Indian tribe, which—

- (1) identifies the specific factors that caused, and explains the reasons that support, the denial;
- (2) identifies potential courses of action for overcoming specific issues that led to the denial; and
- (3) proposes a schedule of consultation with the Indian tribe for the purpose of developing a strategy for protecting the Indian forest land or rangeland of the Indian tribe and interests of the Indian tribe in Federal land.

(e) Proposal evaluation and determination factors

In entering into an agreement or contract in response to a request of an Indian tribe under subsection (b)(1), the Secretary may—

- (1) use a best-value basis; and
- (2) give specific consideration to tribally-related factors in the proposal of the Indian tribe, including—
 - (A) the status of the Indian tribe as an Indian tribe;
 - (B) the trust status of the Indian forest land or rangeland of the Indian tribe;
 - (C) the cultural, traditional, and historical affiliation of the Indian tribe with the land subject to the proposal;
 - (D) the treaty rights or other reserved rights of the Indian tribe relating to the land subject to the proposal;
 - (E) the indigenous knowledge and skills of members of the Indian tribe;

(F) the features of the landscape of the land subject to the proposal, including watersheds and vegetation types;

(G) the working relationships between the Indian tribe and Federal agencies in coordinating activities affecting the land subject to the proposal; and

(H) the access by members of the Indian tribe to the land subject to the proposal.

(f) No effect on existing authority

Nothing in this Act—

(1) prohibits, restricts, or otherwise adversely affects the participation of any Indian tribe in stewardship agreements or contracting under the authority of section 347 of the Department of the Interior and Related Agencies Appropriations Act, 1999 (16 U.S.C. 2104 note; Public Law 105–277) (as amended by section 323 of the Department of the Interior and Related Agencies Appropriations Act, 2003 (117 Stat. 275)) or other authority invoked pursuant to this Act; or

(2) invalidates any agreement or contract under that authority.

(g) Report

Not later than 4 years after July 22, 2004, the Secretary shall submit to Congress a report that describes the Indian tribal requests received and agreements or contracts that have been entered into under this Act.

(Pub. L. 108–278, §2, July 22, 2004, 118 Stat. 868; Pub. L. 115–325, title II, §202(b)(1), Dec. 18, 2018, 132 Stat. 4459.)

EDITORIAL NOTES

REFERENCES IN TEXT

This Act, referred to in subsecs. (a), (f), and (g), is [Pub. L. 108–278, July 22, 2004, 118 Stat. 868](#), which enacted this section and provisions set out as notes under sections 3101 and 3115b of this title.

Section 347 of the Department of the Interior and Related Agencies Appropriations Act, 1999, referred to in subsecs. (b)(1) and (f)(1), was section §101(e) [title III, §347] of Pub. L. 105–277, div. A, as amended, which was set out as a note under section 2104 of Title 16, Conservation, prior to repeal by [Pub. L. 113–79, title VIII, §8205\(b\), Feb. 7, 2014, 128 Stat. 921](#). Provisions similar to §101(e) [title III, §347] of Pub. L. 105–277, div. A, as amended, were enacted by Pub. L. 108–148, title VI, §604, as added [Pub. L. 113–79, title VIII, §8205\(a\), Feb. 7, 2014, 128 Stat. 918](#) and are classified to section 6591c of Title 16, Conservation.

CODIFICATION

Section was enacted as part of the Tribal Forest Protection Act of 2004, and not as part of the National Indian Forest Resources Management Act which comprises this chapter.

AMENDMENTS

2018—Subsec. (a). Pub. L. 115–325 substituted “In this Act” for “In this section” in introductory provisions.

§3115b. Tribal forest management demonstration project

(a) In general

The Secretary of the Interior and the Secretary may carry out demonstration projects by which federally recognized Indian Tribes or Tribal organizations may contract to perform administrative, management, and other functions of programs of the Tribal Forest Protection Act of 2004 (25 U.S.C. 3115a et seq.) through contracts entered into under the Indian Self-Determination and Education Assistance Act (25 U.S.C. 5304 et seq.).

(b) Requirements

With respect to any contract or project carried out under subsection (a)—

(1) on National Forest System land, the Secretary shall carry out all functions delegated to the Secretary of the Interior under the Indian Self-Determination and Education Assistance Act (25 U.S.C. 5304 et seq.);

(2) the Secretary or the Secretary of the Interior, as applicable, shall make any decisions required to be made under—

(A) the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.); and

(B) the Tribal Forest Protection Act of 2004 (25 U.S.C. 3115a et seq.); and

(3) the contract or project shall be entered into under, and in accordance with, section 403(b)(2) of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 5363(b)(2)).

(Pub. L. 115–334, title VIII, §8703, Dec. 20, 2018, 132 Stat. 4877.)

EDITORIAL NOTES

REFERENCES IN TEXT

The Tribal Forest Protection Act of 2004, referred to in subsecs. (a) and (b)(2)(B), is **Pub. L. 108–278, July 22, 2004, 118 Stat. 868**. For complete classification of this Act to the Code, see section 1 of Pub. L. 108–278, set out as a Short Title of 2004 Amendment note under section 3101 of this title and Tables.

The Indian Self-Determination and Education Assistance Act, referred to in subsecs. (a) and (b)(1), is **Pub. L. 93–638, Jan. 4, 1975, 88 Stat. 2203**, which is classified principally to chapter 46 (§5301 et seq.) of this title. For complete classification of this Act to the Code, see section 1 of Pub. L. 93–638, set out as a Short Title note under section 5301 of this title and Tables.

The National Environmental Policy Act of 1969, referred to in subsec. (b)(2)(A), is **Pub. L. 91–190, Jan. 1, 1970, 83 Stat. 852**, which is classified generally to chapter 55 (§4321 et seq.) of Title 42, The Public Health and Welfare. For complete classification of this Act to the Code, see Short Title note set out under section 4321 of Title 42 and Tables.

CODIFICATION

Section was enacted as part of the Agriculture Improvement Act of 2018, and not as part of the National Indian Forest Resources Management Act which comprises this chapter.

STATUTORY NOTES AND RELATED SUBSIDIARIES

PURPOSE

Pub. L. 115–325, title II, §202(a), Dec. 18, 2018, 132 Stat. 4459, provided that: “The purpose of this section [amending section 3115a of this title and enacting provisions set out as notes under this section] is to establish a biomass demonstration project for federally recognized Indian tribes and Alaska Native corporations to promote biomass energy production.”

ALASKA NATIVE BIOMASS DEMONSTRATION PROJECT

Pub. L. 115–325, title II, §202(c), Dec. 18, 2018, 132 Stat. 4461, provided that:

“(1) Definitions.—In this subsection:

“(A) Federal land.—The term ‘Federal land’ means—

“(i) land of the National Forest System (as defined in section 11(a) of the Forest and Rangeland Renewable Resources Planning Act of 1974 (16 U.S.C. 1609(a)) administered by the Secretary of Agriculture, acting through the Chief of the Forest Service; and

“(ii) public lands (as defined in section 103 of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1702)), the surface of which is administered by the Secretary of the Interior, acting through the Director of the Bureau of Land Management.

“(B) Indian tribe.—The term ‘Indian tribe’ has the meaning given the term in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 5304).

“(C) Secretary.—The term ‘Secretary’ means—

“(i) the Secretary of Agriculture, with respect to land under the jurisdiction of the Forest Service; and

“(ii) the Secretary of the Interior, with respect to land under the jurisdiction of the Bureau of Land Management.

“(D) Tribal organization.—The term ‘tribal organization’ has the meaning given the term in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 5304).

“(2) Agreements.—For each of fiscal years 2017 through 2021, the Secretary shall enter into an agreement or contract with an Indian tribe or a tribal organization to carry out a demonstration project to promote biomass energy production (including biofuel, heat, and electricity generation) by providing reliable supplies of woody biomass from Federal land.

“(3) Demonstration projects.—In each fiscal year for which projects are authorized, at least 1 new demonstration project that meets the eligibility criteria described in paragraph (4) shall be carried out under contracts or agreements described in paragraph (2).

“(4) Eligibility criteria.—To be eligible to enter into a contract or agreement under this subsection, an Indian tribe or tribal organization shall submit to the Secretary an application—

- “(A) containing such information as the Secretary may require; and
 - “(B) that includes a description of the demonstration project proposed to be carried out by the Indian tribe or tribal organization.
- “(5) Selection.—In evaluating the applications submitted under paragraph (4), the Secretary shall—
- “(A) take into consideration whether a proposed project would—
 - “(i) increase the availability or reliability of local or regional energy;
 - “(ii) enhance the economic development of the Indian tribe;
 - “(iii) result in or improve the connection of electric power transmission facilities serving the Indian tribe with other electric transmission facilities;
 - “(iv) improve the forest health or watersheds of Federal land or non-Federal land;
 - “(v) demonstrate new investments in infrastructure; or
 - “(vi) otherwise promote the use of woody biomass; and
 - “(B) exclude from consideration any merchantable logs that have been identified by the Secretary for commercial sale.
- “(6) Implementation.—The Secretary shall—
- “(A) ensure that the criteria described in paragraph (4) are publicly available by not later than 120 days after the date of enactment of this subsection [Dec. 18, 2018]; and
 - “(B) to the maximum extent practicable, consult with Indian tribes and appropriate tribal organizations likely to be affected in developing the application and otherwise carrying out this subsection.
- “(7) **Report.**—Not later than September 20, 2019, the Secretary shall submit to Congress a report that describes, with respect to the reporting period—
- “(A) each individual application received under this subsection; and
 - “(B) each contract and agreement entered into pursuant to this subsection.
- “(8) **Term.**—A contract or agreement entered into under this subsection—
- “(A) shall be for a term of not more than 20 years; and
 - “(B) may be renewed in accordance with this subsection for not more than an additional 10 years.”

TRIBAL BIOMASS DEMONSTRATION PROJECT

Pub. L. 108–278, §3, as added by [Pub. L. 115–325, title II, §202\(b\)\(2\), Dec. 18, 2018, 132 Stat. 4459](#), provided that:

“(a) Stewardship Contracts or Similar Agreements.—For each of fiscal years 2017 through 2021, the Secretary shall enter into stewardship contracts or similar agreements (excluding direct service contracts) with Indian tribes to carry out demonstration projects to promote biomass energy production (including biofuel, heat, and electricity generation) on Indian forest land and in nearby communities by providing reliable supplies of woody biomass from Federal land.

“(b) Demonstration Projects.—In each fiscal year for which projects are authorized, at least 4 new demonstration projects that meet the eligibility criteria described in subsection (c) shall be carried out under contracts or agreements described in subsection (a).

“(c) Eligibility Criteria.—To be eligible to enter into a contract or agreement under this section, an Indian tribe shall submit to the Secretary an application—

- “(1) containing such information as the Secretary may require; and
- “(2) that includes a description of—
 - “(A) the Indian forest land or rangeland under the jurisdiction of the Indian tribe; and
 - “(B) the demonstration project proposed to be carried out by the Indian tribe.

“(d) Selection.—In evaluating the applications submitted under subsection (c), the Secretary shall—

- “(1) take into consideration—
 - “(A) the factors set forth in paragraphs (1) and (2) of section 2(e) [25 U.S.C. 3115a(e)(1), (2)]; and
 - “(B) whether a proposed project would—
 - “(i) increase the availability or reliability of local or regional energy;
 - “(ii) enhance the economic development of the Indian tribe;
 - “(iii) result in or improve the connection of electric power transmission facilities serving the Indian tribe with other electric transmission facilities;
 - “(iv) improve the forest health or watersheds of Federal land or Indian forest land or rangeland;
 - “(v) demonstrate new investments in infrastructure; or
 - “(vi) otherwise promote the use of woody biomass; and

“(2) exclude from consideration any merchantable logs that have been identified by the Secretary for commercial sale.

“(e) Implementation.—The Secretary shall—

“(1) ensure that the criteria described in subsection (c) are publicly available by not later than 120 days after the date of enactment of this section [Dec. 18, 2018]; and

“(2) to the maximum extent practicable, consult with Indian tribes and appropriate intertribal organizations likely to be affected in developing the application and otherwise carrying out this section.

“(f) Report.—Not later than September 20, 2019, the Secretary shall submit to Congress a report that describes, with respect to the reporting period—

“(1) each individual tribal application received under this section; and

“(2) each contract and agreement entered into pursuant to this section.

“(g) Incorporation of Management Plans.—In carrying out a contract or agreement under this section, on receipt of a request from an Indian tribe, the Secretary shall incorporate into the contract or agreement, to the maximum extent practicable, management plans (including forest management and integrated resource management plans) in effect on the Indian forest land or rangeland of the respective Indian tribe.

“(h) Term.—A contract or agreement entered into under this section—

“(1) shall be for a term of not more than 20 years; and

“(2) may be renewed in accordance with this section for not more than an additional 10 years.”

[For definitions of terms used in section 3 of Pub. L. 108–278, set out above, see section 3115a(a) of this title.]

DEFINITION OF “SECRETARY”

“Secretary” as meaning the Secretary of Agriculture, see section 2 of Pub. L. 115–334, set out as a note under section 9001 of Title 7, Agriculture.

§3116. Obligated service; breach of contract

(a) Obligated service

Where an individual enters into an agreement for obligated service in return for financial assistance under any provision of this chapter, the Secretary shall adopt such regulations as are necessary to provide for the offer of employment to the recipient of such assistance as required by such provision. Where an offer of employment is not reasonably made, the regulations shall provide that such service shall no longer be required.

(b) Breach of contract; repayment

Where an individual fails to accept a reasonable offer of employment in fulfillment of such obligated service or unreasonably terminates or fails to perform the duties of such employment, the Secretary shall require a repayment of the financial assistance provided, prorated for the amount of time of obligated service performed, together with interest on such amount which would be payable if at the time the amounts were paid they were loans bearing interest at the maximum legal prevailing rate, as determined by the Treasurer of the United States.

(Pub. L. 101–630, title III, §317, Nov. 28, 1990, 104 Stat. 4544.)

§3117. Authorization of appropriations

There are authorized to be appropriated such sums as may be necessary to carry out the purposes of this chapter.

(Pub. L. 101–630, title III, §318, Nov. 28, 1990, 104 Stat. 4544.)

§3118. Regulations

Except as otherwise provided by this chapter, the Secretary is directed to promulgate final regulations for the implementation of the ¹ chapter within eighteen months from November 28, 1990. All regulations promulgated pursuant to this chapter shall be developed by the Secretary with the participation of the affected Indian tribes.

(Pub. L. 101–630, title III, §319, Nov. 28, 1990, 104 Stat. 4544.)

¹ So in original. Probably should be “this”.

§3119. Severability

If any provision of this chapter, or the application of any provision of this chapter to any person or circumstance, is held invalid, the application of such provision or circumstance and the remainder of this chapter shall not be affected thereby.

(Pub. L. 101-630, title III, §320, Nov. 28, 1990, 104 Stat. 4544.)

§3120. Trust responsibility

Nothing in this chapter shall be construed to diminish or expand the trust responsibility of the United States toward Indian forest lands, or any legal obligation or remedy resulting therefrom.

(Pub. L. 101-630, title III, §321, Nov. 28, 1990, 104 Stat. 4544.)

NTPF Interview Protocol

Interview Materials

- Protocol
- Notebook with plenty of paper
- >2 pens

Introduction

(follows the principle of Free, Prior, and Informed Consent)

Thank you for agreeing to talk today about the importance of fishing, gathering, and hunting for your tribe and any ways your tribe actively manages them. This will be the first time these forest products are included in IFMAT and the information you share will be very important. We recognize the right of you and your tribe to choose the information you share and how that information is used. We also understand that some species and practices are sacred and information should not be shared. If at any point you feel you have just shared information that you do not want to be used in our analysis for the IFMAT report, please let me/us know and I/we will strike it from the notes. We will send you the notes from this interview to give you the opportunity to correct any errors and request removal of any information you may later decide is sensitive. We will use the information you and approximately 39 other tribes across the United States provide. When we do that, we will identify the tribes that participated but all information will be combined and reported in the aggregate. No information will be explicitly identified with an individual tribe.

If you are comfortable with this approach, I/we would be grateful to begin the interview now. With your permission, I/we would like to take notes while we talk so I/we capture all the important information you share. The interview covers 14 questions. We could complete it 30-45 minutes but we are finding that this is such a large and important topic that the conversation generally goes on longer than that. If we can't finish it today and you are willing, we can make arrangements to talk again at another time.

Do you have any questions or concerns before we get started? (Answer or note questions and concerns and agree to get back to the interviewee)

Would it be okay if we start the interview now, then?

Questions

Q1. We're interested in the larger importance of forests for your tribe. What is the importance of fishing, gathering, and hunting for your tribe?

Q2. Recognizing that some [animal, plant, fish, and mushrooms] species and uses are sacred and information about them should not be shared, of the species you can talk about freely, which are the most important for your tribe? Why?

Q3. Are any of these species sold raw or without value-added processing in formal or informal markets by tribal members? By non-tribal members? If so, what are they used for? If you know, what is the range of prices your tribal members would typically be paid for them? What would be a high-end price and a low-end price? [interannual and intrannual]

Q4. Are any of these species used to produce value-added products like baskets or jams? If you know, what is the range of prices your tribal members would typically be paid for them? What would be a high-end price and a low-end price?

Q5. How does your tribe manage fishing, gathering, and hunting by tribal and non-tribal members? What are the main objectives?

Q6. What successes has your tribe had in managing fishing, gathering, and hunting? To what do you attribute that success?

Q7. What challenges has your tribe encountered with its program(s) to manage fishing, gathering, and hunting? What resources, if any, would help you address those challenges?

Q8. Have you observed or do you anticipate any effects on tribal fishing, gathering, and hunting and to your program(s) from climate change?

Q9. How many people work in your program(s) for managing fishing, gathering, and/or hunting? In what roles?

Q10. If you can share this information, do(es) your program(s) generate any revenues for the tribe?

Q11. What is the cost to administer and enforce for your program(s) for managing fishing, gathering, and/or hunting?

Q12. Does your tribe have a firewood program? If so, how many households did it serve last year? How is it organized?

Q13. Would it be possible to get additional information about your firewood, fishing, gathering, and/or hunting programs? In particular, we would be grateful to have the text of any rules or regulations, summary reports, and information provided to tribal

and non-tribal members, as well as information about numbers of permits issued and revenues from them.

Q14. Would you like to add anything else about fishing, gathering, and hunting that we haven't yet talked about?

NTFP Species

List of species mentioned during interviews and site visits where NTFPs were covered. NTFPs were discussed with a total of 34 tribes and one consortium of Alaska Native villages. This table is a composite list of NTFP species mentioned during these interviews and site visits. This list is provided as an indication of the types of species that are important to tribes. It is not exhaustive. In particular, medicinal species are likely lacking as this is closely held information. Names provided are the common names used by tribal members and staff during interviews.

Plants		Fungi	Terrestrial Animals			Fish	Cultural keystone
Shrubs, vascular, & bryophytes	Trees		Big game	Small game	Birds		
angelica	alder	chaga	antelope, pronghorn	beaver	condor	eels	ash, brown (ash, black)
asparagus, wild	ash	chanterelle	bear	fisher	dove	eel, lamprey	huckleberry
beargrass	ash, brown (ash, black)	fungus	big horn sheep	fox	ducks	leech	mushroom, tanoak
berries	basswood	morel	boar, wild	hare, snowshoe	flickers	minnow	oak, Emory
bitterbrush	beech	morel, black	buffalo	marten	grouse	salmon	oak, tanoak
bitterroot	birch, paper	mushrooms	caribou	porcupine	grouse, sharp-tail	salmon, Atlantic	rice, wild
black moss	cedar	mushroom, tanoak	coyote	rabbit	migratory birds	salmon, chinook	salmon
blackberry, trailing	cedar, Port Orford	penny bun (bolete)	deer, mule	squirrel	partridge, chukar	salmon, chum	
blueberry	cherry, black	puff balls	deer, white-tailed	woodrat	pheasant	salmon, coho	
cactus, prickly pear	cherry, choke		elk		quail	salmon, kokanee	
cactus, saguaro	chestnut, American		hog, feral		turkey	salmon, sockeye	
camas	Christmas trees		javalina		water fowl	sturgeon	
camas, brown	cottonwood		moose		wood-peckers	trout	
camas, white	fir, balsam		mountain lion			trout, brook	
cranberry	fir, Douglas					trout, bull	
cranberry, highbush	gum, black					trout, Dolly Varden	
curant, black	hickory					trout, Lahontan cutthroat	
devils club	ironwood					trout, rainbow	
elderberry	juniper					trout, steelhead	
fern, black	juniper, alligator					walleye	
fern, Woodwardia	larch (tamarack)					whitefish	

(continued on next page)

(continued from previous page)

Plants		Fungi	Terrestrial Animals			Fish	Cultural keystone
Shrubs, vascular, & briophytes	Trees		Big game	Small game	Birds		
gooseberry	manzanita						
grape, wild	maple, sugar						
ginseng, American	myrtle (pepperwood)						
hazel	oak						
huckleberry	oak, black						
Indian potatoes	oak, Emory						
Indian tea	oak, gambel						
kinnikinnick (bearberry)	oak, tanoak						
Labrador tea	oak, white						
nettle, bull	pawpaw						
onion, nodding	pecan						
onion, wild (ramps)	persimmon, American						
osage orange (bois d'ark)	pine						
ostrich fern, fiddleheads	pine, jack						
plum, wild	pine, Jeffrey						
prince's pine	pine, pinyon						
raspberry	pine, red						
rice, wild	pine, white						
rose (hip)	spruce						
salmonberry	willow, red						
service berry	willow, river						
sochan (cut-leaf coneflower)	yew						
spinach, wild							
sumac, staghorn							
sunflower, wild							
sweetgrass							
yucca							

List of NTFP species mentioned during a virtual interview with the Tanana Chiefs Conference in the **BIA Alaska Region**. The Tanana Chiefs Conference is a consortium of Native governments from 42 villages in Interior Alaska. This table provides common names for the species that were mentioned during the interview. Its brevity in no way conveys the extent of all species fished, gathered, or hunted by these villages and other tribes and Alaska natives.

Plants		Fungi	Terrestrial Animals			Fish	Cultural keystone
Shrubs, vascular, & briophytes	Trees		Big game	Small game	Birds		
berries			caribou	beaver	migratory birds	salmon	fish
plants			moose	fisher			
				marten			

List of NTFP species mentioned during interviews and site visits with tribes in the BIA Eastern Region.

Four tribes were interviewed in the Eastern Region. This table provides common names for the species that were mentioned during interviews and site visits. Its brevity in no way conveys the extent of all species fished, gathered, or hunted by these and other tribes in the Eastern Region.

Plants		Fungi	Terrestrial Animals			Fish	Cultural keystone
Shrubs, vascular, & briophytes	Trees		Big game	Small game	Birds		
bloodroot	ash, brown (ash, black)	mushrooms	bear	rabbit	turkey	salmon, Atlantic	ash, brown (ash, black)
Grapes, wild	beech		coyote	squirrel			
greens, wild	Birch, white		deer, white-tailed				
	butternut		hog, feral				
honeysuckle	cherry, black						
nettle	chestnut, American						
nettle, bull	gum, black						
osage, orange (bois d'ark)	hickory						
ostrich fern, fiddleheads	maple, sugar						
ramps (onion, wild)	oak, unspecified						
river cane	oak, white						
sochan (cut-leaf coneflower)	pawpaw						
yellow root	pecan						
	persimmon, American						
	pine, white						
	walnut						

*List of NTFP species mentioned during interviews and site visits with tribes in the **BIA Midwest Region**.*

Six tribes were interviewed in the Midwest Region. This table is a composite list of NTFP species mentioned during interviews and site visits. This list is provided as an indication of the types of species that are important to tribes. It is not exhaustive. In particular, medicinal species are likely lacking as this is closely held information. Names provided are the common names used by tribal members and staff during interviews.

Plants		Fungi	Terrestrial Animals			Fish	Cultural keystone
Shrubs, vascular, & briophytes	Trees		Big game	Small game	Birds		
asparagus, wild	ash	chaga	bear	hare, snowshoe	ducks	leech	rice, wild
berries	ash, black (ash,brown)	morel, black	deer	porcupine	grouse	minnow	
blueberry	balsam, fir	morels	moose	rabbit	partridge	sturgeon	
cranberry	basswood	mushrooms		squirrel	turkey	trout, brook	
cranberry, highbush	birch, paper	penny bun (bolete)				trout, brown	
ginseng, American	cedar	puffballs				walleye	
gooseberry	fir, balsam					whitefish	
grape, wild	ironwood						
kinnikinnick (bearberry)	maple, sugar						
Labrador tea	pine, jack						
onion, wild (wild leeks)	pine, red						
plum, wild	pine, white						
raspberry	tamarack (larch)						
rice, wild							
rosehip							
sumac, staghorn							
sweetgrass							

*List of NTFP species mentioned during interviews and site visits with tribes in the **BIA Northwest Region**.* Fourteen tribes were interviewed in the Northwest Region. This table is a composite list of NTFP species mentioned during interviews and site visits. This list is provided as an indication of the types of species that are important to tribes. It is not exhaustive. In particular, medicinal species are likely lacking as this is closely held information. Names provided are the common names used by tribal members and staff during interviews.

Plants		Fungi	Terrestrial Animals			Fish	Cultural keystone
Shrubs, vascular, & briophytes	Trees		Big game	Small game	Birds		
beargrass	cedar	morel mushroom	bear	rabbits	grouse	eels	huckleberry
bitterbrush	cherry, choke	mushrooms	buffalo		grouse, sharp-tail	lamprey eels	salmon
bitterroot	Christmas trees		deer, mule		partridge, chukar	salmon	
black moss	fir, Douglas		deer, white-tailed		quail	salmon, chinook	
camas	larch		elk		turkey	salmon, chum	
camas, brown			moose		water fowl	salmon, coho	
camas, white						salmon, kokanee	
cattail						salmon, sockeye	
curant, black						trout, brook	
devils club						trout, bull	
elderberry						trout, Dolly Varden	
huckleberry						trout, Lahontan cutthroat	
Indian potatoes						trout, rainbow	
onion, nodding						trout, steelhead	
salal							
salmonberry							
service berry							
sunflower, wild							
trailing blackberry							

*List of NTFP species mentioned during interviews and site visits with tribes in the **BIA Pacific Region.***

Four tribes were interviewed in the Pacific Region. This table is a composite list of NTFP species mentioned during interviews and site visits. This list is provided as an indication of the types of species that are important to tribes. It is not exhaustive. In particular, medicinal species are likely lacking as this is closely held information. Names provided are the common names used by tribal members and staff during interviews.

Plants		Fungi	Terrestrial Animals			Fish	Cultural keystone
Shrubs, vascular, & briophytes	Trees		Big game	Small game	Birds		
angelica	alder	fungus	deer		condor	salmon	oak, tanoak
elderberry	cedar, Port Orford	chanterelle	wild boar		flickers		
fern, black	cottonwood	mushrooms			turkey		
fern, Woodwardia	manzanita	mushrooms, tanoak			wood-peckers		
gooseberry	myrtle (peppewood)						
grape, wild	oak						
hazel	oak, black						
huckleberry	oak, tanoak						
prince's pine	pine, Jeffrey						
red willow	yew						
willow, river							

*List of NTFP species mentioned during interviews and site visits with tribes in the **BIA Western Region.***

Six tribes were interviewed in the Pacific Region. This table is a composite list of NTFP species mentioned during interviews and site visits. This list is provided as an indication of the types of species that are important to tribes. It is not exhaustive. In particular, medicinal species are likely lacking as this is closely held information. Names provided are the common names used by tribal members and staff during interviews.

Plants		Fungi	Terrestrial Animals			Fish	Cultural keystone
Shrubs, vascular, & briophytes	Trees		Big game	Small game	Birds		
asparagus, wild	cedar		antelope (pronghorn)	fox	dove		oak, Emory
cactus, prickly pear	cherry, choke		bear	rabbit	ducks		
cactus, saguaro	fir, Douglas		big horn sheep	woodrat	pheasant		
Indian tea	juniper		deer, mule		quail		
red willow	juniper, alligator		deer, white-tailed		turkey		
spinach, wild	oak		elk				
yucca	oak, Emory		javalina				
	oak, gambel		mountain lion				
	pine						
	pine, pinyon						
	spruce						
	willow, red						

IFMAT IV Trip Log

IFMAT IV Core team in June 2020 started with developing the overall implementation and methodology for data collection for sampling tribes throughout the 12 BIA regions including Alaska. From June 2020 through June 2021 the Core Team reviewed the major and minor timberland resource categories nationwide for identifying the sample process for the tribes to be selected. The Team also worked with ITC to send 45 letters inviting tribes to participate. The team also reviewed the IFMAT questions used in the prior IFMAT assessments as well as the Tribal and BIA questionnaires. A work plan for the team was developed and included developing an IFMAT IV Site Visit Handbook to assist the tribes in preparing for the assessments. Twelve Technical Specialist were identified nationwide to assist the core team in the assessment. Early in the process the team interviewed native students to participate on the IFMAT IV team and 5 students were selected.

The team started the assessment by interviewing the BIA National and Regional offices in May of 2020 and continued through May 2021. Due to COVID restrictions, reservation on site visits were postponed and Zoom calls were implemented to begin a dialog with the tribes in preparation for a site visit. Each tribe was encouraged to have a Zoom virtual meeting to review a series of questions that support the information and data necessary for the team to collect for each of the tasks mandated by NIFRMA and ITC. The site visits included interviews with tribal members on the importance of the forest and included interviews on non-timber forest resources with cultural staff and elders. Site visits included field tours to observe management practices on each reservation. Forty-one tribes participated in the assessment and onsite visits were conducted on 37 reservations. In June 2021 the IFMAT IV team was able to begin on site in person visits working with each tribe's COVID policies. On site visits continued through 2022 completing the last on-site visit in October 2022.

June 2021

Confederated Tribes of the Colville Reservation

The IFMAT Colville visit consisted of a virtual meeting on June 10 followed by an on-site visit on June 21-22. The virtual meeting reviewed a series of questions that support the information and data necessary for the team to collect for each of the tasks mandated by NIFRMA and ITC. The Colville IFMAT on-site visit was well attended by staff in the

forestry and fire programs. Directly after completing the field site visit the team participated in a focus group and NTFP input which was well attended with representatives from different tribal departments and programs within the Tribes as well as tribal members at large. The IFMAT IV team participants on the Colville Reservation site visit included John Sessions, Tim Vredenburg, Michael Dockry, George Smith, John Bailey, Vincent Corrao, Adrian Leighton, and IFMAT students Chase Christopherson and Hannah Funke.

Nez Perce Tribe

The IFMAT IV Nez Perce Tribe visit consisted of a virtual meeting on June 16 followed by an on-site visit on June 24 and a Focus Group meeting conducted on July 14th. The team participants on the Nez Perce Tribe site visit included John Sessions, Tim Vredenburg, Michael Dockry, George Smith, Vincent Corrao, Adrian Leighton, Serra Hoagland and IFMAT student Chase Christopherson.

The focus meeting and NTFP input was held at the Clearwater River Casino and Adrian Leighton, Vincent Corrao and Student Participant Austin Durglo conducted the focus group session.

July 2021

Confederated Tribes and Bands of the Yakama Nation

The IFMAT Yakama Nation visit consisted of a virtual meeting on July 15 followed by an on-site visit on July 19-20. The Yakama Nation IFMAT on-site visit was well attended by staff in the forestry and fire programs. The team spent ½ day with Yakama Forest Products and Cultural staff on Monday July 19 and then participated in a full field day on Tuesday, July 20. Directly after completing the Yakama Forest Products meeting on Monday the team participated in a focus group which was well attended with representatives from different tribal departments and programs within the Tribes as well as tribal members at large. The team participants on the Yakama Nation site visit included John Sessions, Tim Vredenburg, Mark Rasmussen, Mark Corrao, George Smith, Vincent Corrao, Adrian Leighton, and IFMAT student Austin Durglo.

Spokane Tribe of Indians

The IFMAT Spokane Tribe visit consisted of a virtual meeting on July 13 followed by an on-site visit on July 21-22. The Spokane Tribe IFMAT on-site visit was well attended by staff in the forestry program.

During the site visit the Tribe was managing a wildfire on the reservation of approximately 400 acres in size. The team spent ½ day with Spokane Forestry and Enterprise staff and some of the team met Cultural and Wildlife staff on Wednesday July 21 and then participated in a full field day on Thursday, July 22. Directly after completing the field visit on Thursday the team set up for the focus group meeting which did not have any participants. The team participants on the Spokane Tribe site visit included John Sessions, Tim Vredenburg, Mark Rasmussen, George Smith, Vincent Corrao, Adrian Leighton, Marla Emery, Serra Hoagland and IFMAT students Austin Durgio and Hannah Funke.

August 2021

Tule River Tribe

The Tule River Tribe IFMAT visit consisted of a virtual meeting on Aug 12 followed by an on-site visit on Aug 25 and 26 with a Focus Group meeting conducted on Aug 25. The Tribe on-site visit was attended by staff in the forestry, natural resource, environmental and cultural resource protection programs. The team spent two full days on site with Wednesday dedicated to a focus group and NTFP discussion plus a full day in the field on Thursday August 26, which included several stops and a tour of the Tribe's Forest. The team participants on the Tule River site visit included Adrian Leighton, David Cleaves and Serra Hoagland.

September 2021

Pueblo of Acoma

The IFMAT Pueblo of Acoma visit consisted of a virtual meeting on –September 7 followed by an on-site visit on September 14 and 15. The IFMAT on-site visit was well attended by staff in the forestry and range/ag programs. The team spent much of the day with staff on site and then participated in a full field day on September 15. Directly prior to the field site visit the team participated in a focus group which was well attended by early career tribal natural resource professionals and forestry/range staff. The team participants on the Acoma Pueblo site visit included John Sessions, Tim Vredenburg, George Smith, and Serra Hoagland. Unfortunately, Anthony Ciocco (IFMAT graduate student observer) had to cancel his plans to attend the on-site visit at the last minute.

Mescalero Apache Tribe

The Mescalero Apache Tribe visit consisted of a virtual meeting on September 8 followed by an on-site visit on September 16 and September 17. Two focus group sessions were conducted on September 16 and the NTFP protocol was conducted on

September 13. The Mescalero Tribe IFMAT on-site visit was well attended by staff in the forestry and fire programs. The team spent a full field day on Friday, September 17 that included 5 site stops. The focus group sessions were well attended by elders and four tribal council. The team participants on the Mescalero Tribe site visit included John Sessions, Serra Hoagland, Tim Vredenburg, and George Smith.

Kalispel Tribe of Indians

The Kalispel Tribe visit consisted of a virtual meeting on August 31 followed by an on-site visit on September 27-28. A focus group session was conducted on September 27 and the NTFP protocol was conducted on September 27 during the onsite visit. The Kalispel Tribe IFMAT on-site visit was well attended by staff in the forestry program. The team spent a half day in the field and half day answering the IFMAT questions. The field site visits included five stops. The focus group session was well attended by one Council Member and three tribal members who actively use Tribal and adjacent Forest Service lands. The IFMAT team participants on the Kalispel Tribe site visit included Adrian Leighton, Mark Corrao and Vincent Corrao.

November 2021

Warm Springs Tribe

The Warm Springs Tribe visit consisted of a virtual meeting on November 11 followed by an on-site visit on November 29-30. A focus group session was conducted on November 29 which also included the NTFP protocol during the onsite visit. The Warm Springs Tribe IFMAT on-site visit was well attended by staff from the forestry program. The team spent a half day with Warms Springs staff at the Fire Management office and full day in the field. The field site visits included four stops. The focus group session was well attended by a Council Member, Cultural Committee member and 5 tribal members who actively use Tribal and adjacent Forest Service lands. Representation from Fisheries, Wildlife, Water Resources, and the logging community were present. The IFMAT team participants on the Warm Springs Tribe site visit included Adrian Leighton, Vincent Corrao, John Sessions, George Smith, and Tim Vredenburg.

December 2021

Hoopa Valley Tribe

The Hoopa Tribe visit consisted of a virtual meeting on October 22 followed by an on-site visit on December 6 and December 7. Two focus group sessions were conducted on December 6 and the NTFP protocol was conducted on December 6. The Hoopa Tribe IFMAT on-site visit was well attended

by staff in the forestry, and fire programs, and the enterprise. The team spent a full field day on Tuesday, December 7 that included 10 field stops. The focus group sessions were well attended by tribal council and natural resource departments. The team participants on the Hoopa Tribe site visit included John Sessions, Adrian Leighton, Vincent Corrao, George Smith, Tim Vredenburg, and Marla Emery.

Karuk Tribe

The IFMAT Karuk Tribe visit consisted of a virtual meeting on August 17 followed by an on-site visit December 7. The Karuk Tribe IFMAT on-site visit was well attended by staff in the forestry and fire programs. The team spent a full field day on Tuesday, December 7. The team participated in a focus group meeting December 2 which was attended with representatives from different tribal programs as well as tribal members at large. The IFMAT team participants on the Karuk Tribe site visit included Vincent Corrao, Adrian Leighton, Tim Vredenburg, George Smith, and Marla Emery.

Yurok Tribe

The IFMAT Yurok visit consisted of a virtual meeting on August 11 followed by an on-site visit December 9 and 10. The Yurok IFMAT on-site visit was well attended by staff in the forestry and fire programs. The team spent a full field day on Thursday, December 9 and completed the field tour on Friday morning December 10. The team participated in a focus group meeting December 9 which was attended with representatives from Tribal Council and different tribal programs as well as tribal members at large. The IFMAT team participants on the Yurok Tribe site visit included Vincent Corrao, Adrian Leighton, Tim Vredenburg, George Smith, and Marla Emery.

March 2022

Leech Lake Band of Ojibwe

The Leech Lake visit consisted of a virtual meeting on November 3, 2021, followed by an on-site visit on March 22 and March 23, 2022. A non-timber forest products (NTFP) protocol was conducted on March 22. The Leech Lake IFMAT on-site visit was well attended by staff in forestry. The team spent a full field day on Wednesday, March 23 that included five field stops. The team participants on the Leech Lake site visit included John Sessions, Adrian Leighton, Lloyd Irland, Dave Mausel, and Chase Christopherson.

White Earth Nation

The White Earth visit consisted of a virtual meeting on March 17 followed by an on-site visit on March

24 and March 25. A combined focus group session and the non-timber forest products (NTFP) protocol was conducted on March 25. The White Earth IFMAT on-site visit was well attended by staff in the forestry and fire programs. To take advantage of favorable weather, the team spent a full field day on Thursday, March 24 that included seven field stops. The following day a focus group and NTFP session was conducted. The team participants on the White Earth site visit included John Sessions, Adrian Leighton, Lloyd Irland, Dave Mausel, and Chase Christopherson.

April 22, 2022

Virtual meeting with sustainable Galena biomass project, Gana-A 'Yoo, Limited, Alaska

A virtual meeting was conducted on April 12 with Sustainable Galena and their project manager describing the Galena biomass project which was started in 2007 to replace the high fuel cost and to use biomass to help energy production. This project is 300 air miles west of Fairbanks Alaska. This project is supported by the local school district and Sustainable Energy Galena Alaska is made up of the Loudon Tribal Council, City of Galena, and the Galena school district. Gana-A-Yoo is the native corporation, and the land is owned by the native tribal corporation. This is a 20-year contract which includes 4,720 acres of mostly deciduous species and some mixed conifers. The project is intended to help reduce some of the high energy cost and the fluctuating prices for fuel which must be shipped to this community. IFMAT members that attended the meeting included John Gordon, John Sessions, George Smith, Mark Corrao, Tim Vredenburg and Vincent Corrao.

Quinault Indian Nation

The Quinault Nation visit consisted of a virtual meeting on January 4, 2022, followed by an on-site visit on April 13 and 14, 2022. On April 13 non-timber forest products (NTFP) protocol was conducted and the Focus Group meeting and concurrently an Allottee Association meeting was conducted in the Quinault Forestry Conference room. The Quinault Nation IFMAT on-site visit was well attended by staff in the Forestry and Environmental Departments. The team participants on the Quinault Nation site visit included Adrian Leighton, Serra Hoagland, Vincent Corrao, Mark Rasmussen, George Smith, Tim Vredenburg, Mike Dockry

Eastern Band of Cherokee

The IFMAT Eastern Band of Cherokee visit consisted of a virtual meeting on December 14, 2021, followed by an on-site visit on April 27 and April 28, 2022, in Cherokee, NC. The IFMAT on-site visit was well

attended by natural resource staff and partners. The team spent much of the day in the field with staff on April 27 and then participated in a half day of community focus group and non-timber forest products discussion on April 28. EBCI staff members provided a well-planned tribal forest tour agenda and stakeholder discussions for the visit. The team participants on the EBCI site visit included Serra Hoagland, Marla Emery, Mike Dockry, Tim Vredenburg, and George Smith.

Mississippi Band of Choctaw Indians

The Mississippi Band of Choctaw Indians visit consisted of a virtual meeting on February 15 followed by an on-site visit on April 28 and April 29. A focus group session was conducted on April 28 and the non-timber forest products (NTFP) protocol was also conducted on the same day. The Mississippi Band of Choctaw Indians IFMAT on-site visit was well attended by the Tribal Council Natural Resource Committee and Natural Resources staff including forestry. The team spent a full field day on Friday, April 29 that included ten field stops. The team participants on the Mississippi Band of Choctaw Indians visit were John Sessions, Adrian Leighton, and Chase Christopherson.

May 2022

Tulalip Tribes

The Tulalip visit consisted of a virtual meeting on April 5 followed by an on-site visit on May 12 and May 13. A focus group session was conducted on May 12 and the non-timber forest products (NTFP) protocol was also conducted on the same day. The Tulalip IFMAT on-site visit was attended by Natural Resource Staff including Forestry. The team spent a full field day on Friday, May 13 that included nine field stops. The team participants on the Tulalip Tribe visit were John Sessions, George Smith, and Tim Vredenburg.

Tanana Chiefs Conference, Alaska

The Tanana Chiefs Conference (TCC) visit consisted of two virtual meetings on April 22 (virtual meeting and focus group meeting) followed by an on-site visit on May 15, 18 and 20. A virtual non-timber forest products (NTFP) session was conducted on April 29, 2022. The TCC IFMAT on-site visit was attended by Natural Resource Staff including Forestry. The team spent a full field day on Sunday, May 15 and Wednesday May 18 that was part of the ITC Symposium tours and had a meeting with TTC staff on Friday May 20. The IFMAT IV members participating on the Tanana Chiefs Conference visit were Vincent Corrao, Adrian Leighton, George Smith, and Mark Corrao.

June 2022

Confederated Salish and Kootenai Tribes

The Confederated Salish and Kootenai Tribes (CSKT) visit consisted of a virtual meeting on September 21, 2021, with the Forestry and Natural Resource staff, followed by a virtual Focus Group meeting on October 20, 2021. A non-timber forest products (NTFP) session was conducted on June 8, 2022, while the IFMAT IV team was on the site visit which was conducted on June 8 and 9, 2022. An additional NTFP virtual meeting was conducted with KCC Elders committee on July 13. The CSKT IFMAT on-site visit was attended by many natural resource staff. The team spent a full field day on Thursday June 9th observing 4 site activities. The IFMAT IV members participating on the Confederated Salish and Kootenai Tribes visit were Vincent Corrao, Adrian Leighton, Serra Hoagland, Tim Vredenburg, Mark Rasmussen, Hannah Funke, and George Smith. The IFMAT members attended a nontimber forest products meeting Wednesday afternoon June 8 and met with many members from the Forestry and Fire programs. The nontimber forest products meeting also provided attendees the opportunity to zoom and IFMAT co-chair John Gordon and IFMAT editor Adam Herrenbruck attended through a zoom link.

Virtual Meeting Bristol Bay Native Association, Alaska

A virtual meeting was conducted on June 10, 2022, with the Bristol Bay Native Association with support from the BIA Regional Forester in Alaska. The virtual meeting was to understand the associations challenges and opportunities and managing approximately 30 villages under this nonprofit association. IFMAT members that participated in this meeting include John Sessions, Vincent Corrao, George Smith.

Makah Indian Reservation

The Makah Reservation visit consisted of a virtual meeting on February 22, 2022, followed by an on-site visit on June 29 and 30, 2022. On June 29, the Focus Group meeting, and the Non-Timber Forest Products (NTFP) meeting was conducted with a group of 14 attendees from the Tribe. The Makah Reservation IFMAT on-site visit was well attended by staff in the Forestry and Environmental Departments. The team participants on the Makah Reservation site visit included Adrian Leighton, John Sessions, Vincent Corrao, George Smith, Tim Vredenburg, and Austin Durglo.

July 2022

Red Lake Nation

The Red Lake Nation visit consisted of an onsite meeting with Forestry staff on July 18 followed by a tour of the greenhouse operations and a field tour July 18. A focus group session was conducted on July 19 which included input for the non-timber forest products (NTFP) protocol. The Red Lake Nation IFMAT on-site visit was well attended by Forestry Department staff, and the team spent time in the field day on Monday, July 18 that included seven field stops. The team participants on the Red Lake Nation visit were Mike Dockry and Vincent Corrao.

Santa Clara Pueblo

The IFMAT Santa Clara Pueblo (SCP) visit consisted of a virtual meeting on June 24 followed by an on-site visit on July 18 and 19. The IFMAT on-site visit was well attended by staff in the forestry and other natural resource programs. The team spent the morning of July 18 in SCP council chambers discussing various topics and went in the field that afternoon to visit the bosque site along the Rio Grande. On the morning of July 19, we visited the canyon area. The team participants on the Santa Clara Pueblo site visit included John Sessions, Serra Hoagland, and Hannah Funke.

Grand Portage Band of Lake Superior Chippewa

The Grand Portage visit consisted of a virtual meeting on July 13 followed by an on-site visit on July 20 and July 21. A focus group session was conducted on July 21 along with input for the non-timber forest products (NTFP) protocol. The Grand Portage IFMAT on-site visit was attended by Forestry Department staff, and the team spent a full field day on Wednesday, July 20 that included six field stops. The team participants on the Grand Portage site visit were Adrian Leighton, Mike Dockry and Vincent Corrao.

Navajo Nation

The Navajo Nation visit consisted of a virtual meeting on July 7 followed by an on-site visit on July 20 and July 21. A focus group session was conducted on July 21 along with input for the non-timber forest products (NTFP) protocol. The Navajo IFMAT on-site visit was attended by Forestry Department staff, and the team spent a full field day on Wednesday, July 20 that included seven field stops. On July 21, presentations were also made on the Navajo Nursery, the Navajo Natural Heritage Program, and a presentation by a local rancher on livestock operation connections to the forest. The team participants on the Navajo Nation visit were John Sessions, Serra Hoagland, and John Bailey.

Virtual meeting Confederated Tribes of the Coos, Lower Umpqua and Siuslaw Indians

A virtual meeting was conducted on July 25 with the Forest Manager of the Coos Lower Umpqua & Siuslaw Indians. The tribe recently received ancestral lands originally from the BLM and were in the process of completing a forest management plan and had not implemented any management activities at this time. The IFMAT team participants included George Smith, Adrian Leighton, Tim Vredenburg and Vincent Corrao.

August 2022

Virtual meeting Metlakatla Indian Community, Alaska

A virtual call was conducted on August 30 with the Metlakatla tribe located on Annette Island, Alaska. The IFMAT interview included a list of questions that support the data necessary to complete the assessment. The team collected the data necessary to complete the assessment and the tribe had not had any harvesting since 1997. The IFMAT participants in this virtual meeting included John Gordon, Vincent Corrao, John Sessions, Serra Hoagland, Tim Vredenburg, George Smith, Chase Christopherson.

San Carlos Apache Tribe

The IFMAT San Carlos Apache Tribal visit consisted of an on-site visit on Aug 9 and Aug 10. The in-person visit reviewed a series of questions that support the information and data necessary for the team to collect for each of the tasks mandated by NIFRMA and ITC. A separate virtual meeting prior to the on-site visit was not conducted by request of the SCAT. The IFMAT on-site visit was well attended by staff in the forestry and other natural resource programs. The team spent the afternoon of Aug 9 in the forestry building discussing various topics and went in the field on Aug 10 to visit the tribal forest. The IFMAT members that attended this site visit included Serra Hoagland, John Sessions, and Mike Dockry.

White Mountain Apache Tribe

The White Mountain Apache visit consisted of a virtual meeting on February 24 followed by an on-site visit on August 11 and August 12. A focus group session was conducted on August 12 along with input for the non-timber forest products (NTFP) protocol. The White Mountain Apache IFMAT on-site visit was well attended by Tribal forestry staff, BIA forestry and wildfire staff, Tribal Council members, and other tribal natural resource departments. The team spent a full field day on Thursday, August 11. that included a meeting and mill tour with the enterprise and four field stops. On August 12, after

the focus group, a visit was made to the White Mountain Apache Nursery. IFMAT members John Sessions and Michael Dockry participated on the on-site visit.

Penobscot Nation

The Penobscot Nation visit consisted of an onsite meeting with Forestry staff on August 15 followed by an informal meeting with staff for the Focus Group and non-timber forest products discussion. The Focus Group session was conducted on August 16 which included input for the non-timber forest products (NTFP) protocol. The onsite office meeting reviewed a series of questions that support the information and data necessary for the team to collect for each of the tasks mandated by the National Indian Forest Resource Management Act (NIFRMA) and the Intertribal Timber Council (ITC). The Penobscot Nation IFMAT on-site visit was well attended by Forestry Department staff, and the team spent time in the field on Monday, August 15 that included four field stops. The team participants on the Penobscot Nation visit were Mike Dockry, Vincent Corrao, Dave Cleaves and Adrian Leighton.

Passamaquoddy Tribe

The Passamaquoddy Tribe visit consisted of an on-site visit on August 16 and 17. The team spent the 16 on a field tour and an office meeting was conducted at the Tribal Office on August 17 for the Focus Group and non-timber forest products discussions. The meetings reviewed a series of questions that support the information and data necessary for the team to collect for each of the tasks mandated by NIFRMA and ITC. The office meeting provided an opportunity for an introduction to the Passamaquoddy trust and fee lands. The field tour included 5 stops to view forest management activities. The IFMAT members attending the site visit include Vincent Corrao, Tim Vredenburg, Adrian Leighton, Tyler Everett Mike Dockry, and Lloyd Irland.

Houlton Band of Maliseet Indians

The Houlton Band of the Maliseet Indians visit consisted of an on-site visit on August 18. The on-site visit was well attended by tribal forestry staff and other tribal staff. IFMAT members Mike Dockry and Tim Vredenburg participated on the on-site field visit on August 18. The onsite office meeting reviewed a series of questions that support the information and data necessary for the team to collect for each of the tasks mandated by the National Indian Forest Resource Management Act (NIFRMA) and the Intertribal Timber Council (ITC). The team spent a few hours in the field to observe the tribes forest practices.

Mi'kmaq Nation

The Mi'kmaq Nation's visit consisted of an on-site visit on August 18. The on-site visit was well attended by tribal staff. The onsite office meeting reviewed a series of questions that support the information and data necessary for the team to collect for each of the tasks mandated by the National Indian Forest Resource Management Act (NIFRMA) and the Intertribal Timber Council (ITC). IFMAT members Adrian Leighton and Tyler Everett participated on the on-site field visit which included several office meetings and spent a partial day in the field day.

September 2022

Menominee Tribe

The Menominee Tribe consisted of a virtual meeting on August 31 followed by an on-site visit on September 6-7. A focus group session was conducted on September 7 which also included the NTFP protocol during the onsite visit. The Menominee Tribe IFMAT on-site visit was well attended by staff from the Menominee Enterprise. The team spent a full day in the field observing forestry practices. The IFMAT team participants on Menominee site visit included Adrian Leighton, Dave Wilson, John Sessions, Tim Vredenburg and George Smith.

Stockbridge-Munsee Band of Mohican Indians

The Stockbridge-Munsee visit consisted of an on-site visit on September 7 and September 8. A focus group session was conducted on September 8 along with the non-timber forest products (NTFP) protocol. The on-site visit was well attended by tribal forestry staff, other tribal staff, and a member of tribal council. IFMAT members John Sessions, George Smith and Dave Wilson participated on the on-site field visit on September 7. The team spent a full field day on Wednesday, September 7 that included an office meeting and eight field stops. The team was joined by Adrian Leighton and Tim Vredenburg for the focus group and NTFP session on September 8. A visit to the community farm was made after the focus/NTFP meeting. Leighton and Vredenburg participated in a separate field site visit in the afternoon of September 8.

Coquille Indian Tribe

The Coquille Tribe visit consisted of an on-site visit on September 20 and September 21. The team spent the morning of September 20 in the office reviewed a series of questions that support the information and data necessary for the team to collect for each of the tasks mandated by the National Indian Forest Resource Management Act (NIFRMA) and the Intertribal Timber Council (ITC).

An introduction to the Coquille trust and fee lands was conducted and the afternoon for field day that included four field stops on the Coquille Forest. On Wednesday, following a combined focus group/NTFP session, the team made a field tour of the Empire (Kilkich) forest. IFMAT members participating on this site visit included John Sessions and Adrian Leighton.

Confederated Tribes of Grand Ronde

The Grand Ronde Tribe visit consisted of a virtual meeting on August 29 followed by an on-site visit on September 20-21. A focus group session was conducted on September 20 which also included the NTFP protocol during the onsite visit. The Grand Ronde Tribe IFMAT on-site visit was well attended by staff from the forestry and wildlife program. The team spent a full day in the field and included 4 stops. The IFMAT team participants on Grand Ronde site visit included Vincent Corrao, and Tim Vredenburg.

Cow Creek Band of Umpqua Tribe of Indians

The Cow Creek Tribe visit consisted of a virtual meeting on August 31 followed by an on-site visit

on September 22-23. A focus group session was conducted on September 23 which also included the NTFP protocol during the onsite visit. The Cow Creek Tribe IFMAT on-site visit was well attended by staff from the forestry program. The team spent a full day in the field and a half day with Cow Creek Council members, cultural staff and tribal members for the Focus Group and the Non-Timber Forest Products meetings. The field site visits included 15 stops observing many examples of management on fee and trust lands. The IFMAT team participants on the Cow Creek Tribe site visit included Adrian Leighton, Vincent Corrao, and John Sessions.

October 2022

Chugachmiut, Alaska

The Chugachmiut visit consisted of an on-site visit on October 5-6. The on-site visit was well attended by tribal forestry staff. IFMAT members Adrian Leighton, Tim Vredenburg and Chase Christopherson participated on the on-site field visit. The team spent two days on site that included an office meeting and field stops.

IFMAT I-III Crosswalk Table of Recommendations

The following table reviews the recommendations of the previous three IFMATs as to whether they have been implemented or not. Two facts are apparent immediately on reading the table. First, some important recommendations have been implemented although often well after their publication (for example, ITARA). Second, an alarming number of important recommendations have not been implemented (for example, funding and personnel). It is over 30 years since IFMAT I began. It is IFMAT's fervent hope that the recommendations in this IFMAT IV report will receive the full and effective attention of Congress and the Administration so that Indian forests and forestry can reach their full potential as an important component and model for all American forests.

TASK A: An in-depth analysis of management practices on, and the level of funding for, specific Indian forest land compared with similar Federal and private forest lands.

Recommendations in Response to Task A Findings	IFMAT I – 1993 II – 2003 III - 2013	Recommendation Implementation Status
Funding Increases		
Bring per acre investment in Indian forestry to levels comparable to that available for similar federal, state, and private forests over a ten- year period. (IFMAT II – Primary Recommendation (1), page 15)	II	Total Forest Management funding (Forestry and Fire programs combined) has increased in real dollars from \$152.7 million in 1991 to \$199.5 million in 2019 (dollars adjusted to 2019). However, the forest management-only funding has shown a decrease of 38% in real dollars between 1991 and 2019.
To meet tribal visions for Indian forests, increase per-acre funding to what the National Forests incur for coordinated management an increase of over \$120 million per year. (Recommendation A1, page V-11)	I	
Also, make major investments in remedial road work and the activities needed to reduce the forest development backlog. (Recommendation A2, page V-11)	I	
Invest in tribal forestry through the federal appropriations process and insure and coordinate existing funding to bring per acre investment to the current level of investment in similar federal, state, and private forests. (Recommendation A (1), page 51)	II	
Revise the federal funding model to provide for basic land stewardship costs including wildfire management, plus additional support for active timber management, consistent with tribal goals. (Recommendation A1, page 97)	III	
Increase base level funding by \$100 million to support forest stewardship for Indian forests to reach parity with National Forest and BLM funding on their respective land classifications. (Recommendation A2, page 97)	III	
Provide adequate additional funding for law enforcement (trespass) on Indian forest lands (\$2-3 million per year). (Recommendation A3, page 97)	III	

TASK A *(continued)*

Recommendations in Response to Task A Findings	IFMAT I – 1993 II – 2003 III - 2013	Recommendation Implementation Status
Management Practices		
Develop more thorough and site-specific Silvicultural prescriptions to guide forest management practices. (Recommendation A3, page V-11)	I	Preparation of silvicultural prescriptions is emphasized in silvicultural certification training.
Convert the BIA to a technical services organization with strong ties to primary sources of research in the National Biological Survey, the Forest Service, and universities. (Recommendation A4, page V-11)	I	This has not occurred and technical services within the BIA have actually declined.
Establish a venture capital fund for Indian forests. (Recommendation A5, page V-11)	I	This has not occurred.
Standardize accounting systems for fire preparedness personnel on fire suppression between the DOI and the USDA to eliminate bias and to facilitate benchmarking. (Recommendation A4, page 97)	III	This has not occurred. BIA still lags in equitable funding with other federal agencies.
Each tribe could continue to explore the benefits of using certification programs. (IFMAT II Additional - (J), page 22)	II	Tribes are exploring this on an individual basis. In January 2011, ITC explored the concept of branding and marketing tribal forest products. Certification was also addressed (ITC. Branding and Marketing Tribal Forest Products, Volume I. Synthesis, January 2011).

TASK B: A survey of the condition of Indian forest lands, including health and productivity levels.

Recommendations in Response to Task B Findings	IFMAT I – 1993 II – 2003 III - 2013	Recommendation Implementation Status
Ecosystem Management		
Apply ecosystem management as an overall approach to protecting the health and productivity of Indian forests. (Recommendation 1, page V-25)	I	Partially implemented, but more emphasis on the principles of ecosystem management needs to be included in forest management activities.
Create heterogeneity in the landscape in terms of forest types, age/size of trees, and structural conditions that fit appropriately to the topography, reflect a tribal vision for diverse ecosystem services, and increase landscape resiliency to climate change. (Recommendation B5, page 111)	III	Partially implemented through longer rotations and uneven-aged management. Thinning backlog continues to be a constraint. Some adaptation strategies for climate change are being adopted.
Monitoring		
Establish a regular BIA state-of-the-resource report including assessments of marketing, economics, woodlands, and climate change that would incorporate a protocol for continuing data acquisition (with specific reference to NIFRMA questions). (IFMAT III – The Indian Forest Resource – F1., page 41)	III	This has not been established.
Develop, fund, and implement a program for monitoring the long-term effects of resource management activities. (Recommendation 3, page V-26)	I	Long-term monitoring, other than CFI is still lacking on many tribal forests. Due to significant underfunding of Tribal forestry programs and with other priorities, it is difficult to implement monitoring activities.
Continue to improve tribal inventory and monitoring capabilities (e.g., staff and funding). To ensure local and comprehensive understanding of resource productivity, health, and potential to meet the needs of tribes. (Recommendation B1, page 111)	III	
Interdisciplinary Collaboration		
Recruit a corps of professional ecologists, comparable to Forest Service area and regional ecologists, to provide the necessary guidance for developing and applying ecosystem management, including ecological classifications. (Recommendation B6, page V-26)	I	All disciplines within forest management programs are understaffed. Significant challenges exist in the recruitment and retention of more professionals (see Task C).
Analyze and implement watershed and stream restoration programs. (Recommendation B8, page V-27)	I	Partially implemented. Mostly funded from grant programs.
Fund an independent study through ITC to further define the nature and impacts of urbanization on reservations including accurate assessment of acreage changes and reservation population change. (Recommendation B2, page 61)	II	Not implemented
Encourage and fund interdisciplinary and cross boundary collaboration to enable cooperative landscape-level wildlife management activities. (Recommendation B3, page 61)	II	Implemented and expanding through other federal agencies. At some locations, initiation of cross boundary projects by tribes is gaining traction.

TASK B *(continued)*

Recommendations in Response to Task B Findings	IFMAT I – 1993 II – 2003 III - 2013	Recommendation Implementation Status
Interdisciplinary Collaboration <i>(continued)</i>		
Avoid the tendency to not manage (or to manage only by constraints) over large expanses due to issues associated with wildlife habitat, watershed protection and other non-timber values; less management might be a viable alternative in the near-term but carries a long-term risk, particularly from wildland fire, exotic and invasive pests, and climate change. (Recommendation B6, page 111)	III	With a transition from timber production to broader stewardship management for some tribes, proactive management across the landscape is declining. An increase in forest health improvement and risk-reduction actions will be needed to preserve non-timber values.
Promote the inherent connection of tribal human communities, including the land management professionals, to the resources being managed within the tribes and in the media. (Recommendation B10, page 112)	III	Not implemented. The IRMP program which partially addressed these issues has been basically eliminated. There are significant challenges to adding new staff to Tribal forestry programs (see Task C).
Add staff, funding, and technology to address emerging issues associated with human expansion into the forest: exotic/invasive plant and animal species, land trespass/safety, climate variability, watershed protections, threats to cultural resources, and wildlife management. (Recommendation B4, page 111)	III	
Silvicultural Practices		
Devise a plan for expanded application of prescribed burning for Indian forestlands, emphasizing the mixed-conifer forests and pinyon-juniper woodlands of the Intermountain West. (Recommendation B2, page V-25)	I	Prescribed burnings are still predominately managed through the wildfire management plan and not being integrated into a forest-wide cohesive management plan. Securing BIA approval of prescribed burn plans is often difficult.
Expand commercial thinning and partial cutting of young and mature mixed conifer stands in the Intermountain West to improve forest health. (Recommendation B4, page V-26)	I	Partially implemented. Focus has been on the hazardous fuels programs, but backlogs remain.

TASK B *(continued)*

Recommendations in Response to Task B Findings	IFMAT I – 1993 II – 2003 III - 2013	Recommendation Implementation Status
Silvicultural Practices <i>(continued)</i>		
Design future silvicultural prescriptions to recreate and maintain stand structural elements that have grown scarce in recent times. (Recommendation B5, page V-26)	I	Expansion of the silvicultural certification training has helped in advancing this concept.
Continue to focus on implementing sound, state-of-the-art silviculture in response to the challenges of multiple-use management and current/emerging issues in Indian Country. (Recommendation B2, page 111)	III	Forest plans have not kept pace with current and emerging issues such as climate change and carbon sequestration (Task F).
Exercise the entire silvicultural toolbox to address these challenges and meet the objectives of the tribe, including the expanded use of prescribed fire and chemicals where appropriate. (Recommendation B3, page 111)	III	Hazardous fuel reduction backlog persists. Tribes in the West are increasingly experimenting with herbicides due to fire recovery challenges. BIA needs to advocate for use of prescribed fire and address issues relating to approval of burn plans. ITARA provides opportunity for tribal approval of prescribed burn plans.
Firewood and other non-timber forest product harvesting should be better integrated into commercial forestry operations. (Recommendation B5, page 61)	II	Other than hazardous fuels treatments, non-commercial harvesting has not advanced due to staffing and funding constraints. BIA has financed firewood processing equipment and some tribes require delivery of non-merchantable biomass to roadside for firewood gatherers.
Road Management		
Improve the state of the road system and integrate road management with protecting streams and watersheds. (See “Comparative Analysis of Management Practices and Funding” for more discussion). (Recommendation B7, page V-27)	I	Roads continue to need improvements. Funding is lacking on Bureau and tribal roads. 2019 BIA study identifies road backlog at \$1.33 billion.
Continue the relocation, improvement, and maintenance of necessary road systems to protect watersheds and, where possible, regulate access to preserve road integrity, reduce fire ignitions and trespasses, and minimize the spread of exotic/invasive plants and animals. (Recommendation B7, page 111)	III	Many forest roads are not on the BIA road system eligible for maintenance funding due to requirement to be open to the public.

TASK B *(continued)*

Recommendations in Response to Task B Findings	IFMAT I – 1993 II – 2003 III - 2013	Recommendation Implementation Status
Woodland Management		
Bring woodlands into the mainstream of forest management planning. (IFMAT II Additional – I, page 19).	II	Woodland management plans continue to be developed separate from the timberlands.
Bring woodlands into the mainstream of forest management planning by enhancing research, inventory, and monitoring of their basic condition and of practices, such as grazing and firewood harvest, that impact them heavily. (Recommendation B4, page 61).	II	
Continue to coordinate with other natural resources disciplines to achieve related goals most efficiently. We saw outstanding examples of such collaboration, and it is the future of land management in general and particularly for woodland management. (Recommendation B8, page 112)	III	Forest management and other resources continue to grow in their management of woodlands, but they need to be more integrated into the timberland management program.
As both previous IFMAT reports recommended, expand staff and funding for woodlands management, which represents the most acreage in Indian Country and contains many of the most pressing management issues (e.g., fire risk, watershed protection, exotic species, and climate change). (Recommendation B9, page 112)	III	Funding and staffing for woodlands continue to be less than needed, but need is broader than just woodlands. Underfunding and lack of staff exists across all aspects of Indian forest management (see Task C).
Climate Change		
Require allocation of federal agency funds for climate change response and develop process and criteria to assure a more equitable distribution of funding to tribes. (IFMAT III - Climate Change - CC1, page 55)	III	Refer to IFMAT IV Task I
Require all regional and national assessments of the forest resource to include an assessment of the condition and trends of Indian forest lands under a range of future scenarios. (IFMAT III - Climate Change – CC2, page 56)	III	
Encourage the exchange of traditional ecological knowledge and Western scientific knowledge in planning and adjusting to climate change impacts, recognizing the unique strengths that each form of knowledge brings to the challenges of adaptation. (IFMAT III - Climate Change – CC3, page 56)	III	
Require federal agencies to develop mechanisms for coordinated interagency delivery of science findings, technical and financial services to tribes. (IFMAT III - Climate Change – CC4, page 56)	III	
Provide technical support for tribal assessments of climate-driven vulnerabilities towards incorporation of this information into forest planning and management processes. (IFMAT III - Climate Change – CC5, page 56)	III	
Incorporate adaptation planning into the IRMP and forest management planning processes of tribes using a template similar to the one developed by ITEP that integrates traditional and scientific knowledge. (IFMAT III - Climate Change – CC6, page 56)	III	

TASK C: An evaluation of the staffing patterns of forestry organizations of the Bureau of Indian Affairs and of Indian tribes.

Recommendations in Response to Task C Findings	IFMAT I – 1993 II – 2003 III - 2013	Recommendation Implementation Status
Staffing		
Assist in developing natural resource staffs adequate to plan and implement coordinated resource management programs. Bring staffing levels to parity with National Forests with similar resource management objectives. (Recommendation C1, page V-32)	I	Staffing levels at both the BIA and tribal programs continue to decline in the forestry program. In the past decade, there has been a significant decline in the number of professional foresters.
Engineering		
Assist in developing a professional engineering staff to adequately support coordinated resource management. Use National Forest engineering staffing as a guideline. (Recommendation C2, page V-32)	I	The need for engineers to support the tribal road programs continues to increase while the staffing levels for all functions are shrinking.
Education		
Fully fund implementation of the educational programs authorized under the NIFRMA and develop similar programs for non-forestry natural resource programs. (Recommendation C3, page V-32)	I	Educational programs continue to be developed to promote not only the forestry programs, but the non-forestry programs as well. More needs to be done to introduce tribal students to these programs.
Establish an education committee of selected universities, agencies, and companies to develop, implement and coordinate a comprehensive national plan for recruiting and retaining Indian natural-resource professionals. (Recommendation C5, page V-32)	I	This committee has not been developed. However, add-hoc groups have been engaged in developing recruiting and retention programs.
Analyze the condition and effectiveness of education funding programs for tribal forest and natural resource managers, with particular attention to reasons for the deficit in engineering professionals. (IFMAT II Additional - (D), page 19)	II	Study has not been initiated.
Perform a study to determine the condition and effectiveness of education-funding programs for tribal forest and natural resource managers. (Recommendation C1, Page 64)	II	
A BIA national educational coordinator is needed to pursue programs as envisioned by NIFRMA and to coordinate education programs with the Bureau of Indian Education and all other applicable federal agency programs such as the National Science Foundation and the USDA National Institute of Food and Agriculture. (Recommendation CE1, page 137).	III	A BIA national coordinator has not been hired.
Implement education programs envisioned by NIFRMA. (Recommendation CE2, page 138)	III	Some programs have been implemented, but more work needs to be done to expand scope of these programs.
Increased programmatic support and cooperation with tribal colleges is needed by both the BIA and tribes. (Recommendation CE3, page 138)	III	Support has increased some, but not to the levels needed for success.

TASK C (continued)

Recommendations in Response to Task C Findings	IFMAT I – 1993 II – 2003 III - 2013	Recommendation Implementation Status
Education (continued)		
\$1 million per year should be made available to tribes for the support of youth internships and nature/culture camps. (Recommendation CE4, page 138)	III	This has not been implemented.
BIA should provide approximately \$11.3 million per year for continuing education for forestry staff. (Recommendation CE5, page 138)	III	This has not been funded.
A strategy similar to the national agriculture leadership network should be developed that allows tribes, the BIA, and the ITC to work together to address the leadership and upper-level management skill needs identified in the workforce survey. (Recommendation CE6, page 139)	III	This strategy has not been developed.
National level advocacy and support for building research partnerships between tribes and research institutions is needed. (Recommendation CE7, page 139)	III	National-level advocacy is present, but in a limited role of the national office due to staffing limits.
Recruitment and Retention		
Promote recruitment and retention in BIA and tribal programs. including upgrading positions, creating better benefits packages, and designing proactive recruitment techniques. (Recommendation 4, page V-32)	I	Recruiting and retention continue to be a significant problem within the Indian Forestry program. Low salary scales (tribal programs), lack of housing, and remote locations are continuing issues for both recruitment and retention.
The BIA should work with tribes to develop a strategic plan to recruit, train, and retain tribal forestry professionals and technicians. (Recommendation C3, page 128)	III	Work continues between the BIA and the ITC to develop programs that recruit and retain staff. Recruiting is falling short of meeting the needs of all programs. Training has fallen short of the needs to maintain a workforce that is current.
Technical Services		
Increase the effectiveness of BIA service to tribes. (Recommendation C2, Page 66)	II	BIA services continue to be reduced as staffing and funding fall short of the needs. With increase in transition to direct tribal operations under self-governance, BIA's future role needs to be redefined.
BIA delivery of technical services needs to be analyzed at the programmatic level and re-structured to increase its effectiveness. (Recommendation C2, page 128)	III	
Maintain BIA technical services capacity at least at the 1991 level. (IFMAT II – Primary Recommendation (3), page 17)	II	
Funding		
A total of \$254 million annually and 2002 professional and technical staff members are needed to adequately support tribal forestry programs. (Recommendation C1, page 128)	III	Funding continues to fall short of the needs. Current estimates are that there is a \$138 million shortfall and a total program need of \$312 million.

TASK D: An evaluation of procedures employed in timber sales administration, including preparation, field supervision, and accountability for proceeds.

Recommendations in Response to Task D Findings	IFMAT I – 1993 II – 2003 III - 2013	Recommendation Implementation Status
Staff Training		
Increase staffing and training for timber sale preparation and administration. Use National Forest staffing and training levels as a guide. (Recommendation D1, page V-35)	I	Implemented. The BIA is conducting periodic workshops on timber sale administration and the update TA Handbook.
Train forest managers on modern process quality control procedures. (Recommendation D7, page V-35)	I	This has not been implemented.
Fund a series of regional workshops through the ITC to determine the reason for the difference in stumpage revenues between tribes and neighboring public and private lands. (Recommendation D1, page 69), IFMAT II Addition-I - (B, page 19)	II	This has not been implemented.
Timber Sale Program Management		
Adopt a management structure which can efficiently plan and implement a timber program as part of a coordinated resource plan. Place responsibility for delivering the natural resource program under a single manager. (Recommendation D2, page V-35)	I	Most forestry programs are now under a Natural Resources Director.
Promote competitive bidding for logging contracts. At a minimum, some contracts should be awarded competitively as a control. (Recommendation D3, page V-35)	I	Now implemented by many tribes.
Review timber-sale policies to verify that sale procedures lead to maximum benefits for the tribe. (Recommendation D4, page V-35)	I	Timber Sale Policies follow BIA and Tribal Council Direction. At some locations tribal leadership needs to be more involved in providing direction and oversight for timber sale operations.
Timber Sale Auditing		
Develop auditing procedures to document the competitiveness of forest-products enterprises. (Recommendation D5, page V-35)	I	Not implemented. Some tribal enterprises do contract with industry consultants.
Develop auditing procedures to document the competitiveness of forest-products enterprises. (Recommendation D3, page 70, IFMAT II Additional – (F), page 19)	II	
An auditing procedure should be developed to document the competitiveness of forest enterprises. (Recommendation D2, page 154)	III	This has not been implemented.
Timber Sale Policy		
Periodically review timber sale policies to verify that sale procedures lead to maximum benefits for the tribe. (Recommendation D2, page 70, IFMAT II Addition-I - (E), page 19)	II	Forest Management Plans are not being kept current. There is an on-going effort by BIA to update the timber sale handbook and conduct workshops on timber sale policies and procedures.

TASK D *(continued)*

Recommendations in Response to Task D Findings	IFMAT I – 1993 II – 2003 III - 2013	Recommendation Implementation Status
Timber Sale Policy <i>(continued)</i>		
Forest Management Plans and Integrated Resource Management Plans should include strategies for long-term harvest planning and marketing of tribal forest products. (Recommendation D1, page 154)	III	Forest management plans include AAC but with little connection to marketing of forest products.
Develop a timber market reporting system that monitors and periodically publishes log and stumpage price values to compare domestic and international sale values. (Recommendation D4, page 154)	III	This has not been implemented.
Tribal Enterprises		
Transfer logs to forest-products enterprises at market value. (Recommendation D6, page V-35)	I	Remains dependent on tribal policy and BIA approval of tribal enterprise agreements.
Improve coordination among Tribal Councils, Enterprise Boards of Directors, and Natural Resource Programs. (Recommendation D3, page 154)	III	These issues are being addressed to some extent in more recent enterprise agreements. Improvement continues to be needed.
Funding		
Provide consistent programmatic funding to adequately address unfunded mandates and improve timber sale preparation timelines. (Recommendation D6, page 154)	III	Recurring TPA funding has declined while requirements of unfunded mandates have increased. ITARA provides opportunities to streamline processes under tribal authority and address unfunded mandates in a less costly manner.
Allotments		
Create a system of matching funds to underwrite land (allotments) reacquisition costs for tribes that choose to provide a percentage of the purchase costs. (Recommendation D5, page 154).	III	Partially accomplished under Cobell settlement which provided funds for tribes to acquire ownership of allotments or majority of ownership interests.

TASK E: An analysis of the potential for reducing or eliminating relevant administrative procedures, rules and polices of the Bureau of Indian Affairs consistent with the Federal trust responsibility.

Recommendations in Response to Task E Findings	IFMAT I – 1993 II – 2003 III - 2013	Recommendation Implementation Status
Transition From BIA Administration to Tribal Direct Operations of Forestry Programs		
<p>Redefine the U.S. government’s role in discharging its trust responsibility so that tribal governments have primary responsibility for directing Indian forestry. The U.S. government should provide financial support, technical assistance, research access, and trust oversight. Technical assistance and trust oversight should be independent of each other.</p> <p>The new arrangement should reflect the following:</p> <ul style="list-style-type: none"> ■ Each tribe should be the principal agent responsible for crafting, implementing, and monitoring a coordinated resource management plan congruent with its vision for forests and forest management. ■ Standards for evaluating performance in meeting the trust responsibility should be measured through both tribal monitoring and trust oversight. ■ BIA forestry should be reorganized to separate technical assistance from trust oversight. The BIA should retain technical assistance, but trust oversight should be delegated to an independent commission. ■ Technical assistance from the BIA should include full support for coordinated resource planning and management and also research access. <p>A single manager should be responsible for delivering the entire natural-resource program at the local level. (IFMAT-I - Major Recommendation, page ES-15)</p>	I	Partially implemented through the expansion of the self-determination and the self-governance programs.
<p>Redefine the U.S government’s role in discharging its trust responsibility so that tribal governments have primary responsibility for directing Indian forestry (See individual sub-recommendations below). (Recommendation E1, V-37)</p>	I	There continues to be increased transition to direct tribal operations of forestry programs under P.L. 93-638. The Indian Trust Asset Reform Act (ITARA-2016) changes the BIA’s role in carrying out its trust responsibility and provides significant new authorities for tribes to exercise self-governance in management of Indian forests.

TASK E *(continued)*

Recommendations in Response to Task E Findings	IFMAT I – 1993 II – 2003 III - 2013	Recommendation Implementation Status
Transition From BIA Administration to Tribal Direct Operations of Forestry Programs <i>(continued)</i>		
Standards for evaluating the performance in meeting the trust responsibility should be agreed upon between each tribal government and the Secretary of the Interior. (Recommendation E1(b), page V-37)	I	Tribal standards for evaluating trust responsibility are set forth in the tribal forestry regulations incorporated in the ITAMP approved by the Secretary for ITARA tribes. The trust evaluation which is a required part of the ITAMP is the review process for compliance with established trust standards for ITARA Tribes. Once tribal standards have been incorporated in the FMP and are approved by the BIA, these standards then meet the trust responsibility.
Evaluate the range of self-determination mechanisms (that is, direct BIA management, contracting, compacts, cooperative agreements) supporting the transition to tribal forest management and conduct a study that describes where all tribes with forests fall along this spectrum. (Recommendation 2, page V-38)	I	Accomplished as part of IFMAT IV work and report.
Trust Oversight		
Technical assistance should be separated from trust oversight. (Recommendation E1 (c), page V-37)	I	DOI/BIA standards and process for trust oversight remain unchanged. Established procedures for trust evaluations relating to compacts and ITAMPs are being implemented. Compact trust evaluations focus on internal controls, fiduciary/ accounting systems, and conflict of interest safeguards rather than technical management of the forest resource.
Implement the trust oversight recommendations of IFMAT I. See Task G. (Recommendation E1, page 74)	II	Some improvement in FMPs defining tribal vision for forest and establishing trust standards consistent with vision. However, BIA and tribal resource managers still have no clear guidance as to the discharge and effect of the federal government’s trust oversight responsibilities. Recommendation for trust oversight commission not implemented.

TASK E (continued)

Recommendations in Response to Task E Findings	IFMAT I – 1993 II – 2003 III - 2013	Recommendation Implementation Status
Unfunded Mandates		
Federal regulations should be revised to eliminate unfunded mandates if methods of compensating tribes and allottees for them are not developed. (Recommendation E3, page 74, IFMAT II Additional - (K), page 22)	II	ITARA authorizes tribes to replace federal regulations with tribal law and regulations which allows less costly processes for NEPA, ESA, and NHPA compliance.
Remove costly unfunded mandates of implementing federal laws and processes, including consultation under ESA, or provide full federal funding for carrying out those laws and processes. (Recommendation E4, page 161)	III	
Enable the use of Categorical Exclusions (CEs) and Environmental Assessments (EAs). For tribes that have well-integrated natural resource plans and strong council and tribal public support for those plans, enable CEs for integrated projects or streamline NEPA to facilitate the development of less costly single-alternative EAs. Self-governance tribes should be able to develop tribal NEPA procedures and associated code to replace BIA NEPA manuals and handbooks. This approach furthers self-determination and self-governance and would reward tribes for progress in integrated planning. (Recommendation E3, page 160)	III	ITARA authorizes tribes to develop tribal law and regulations to implement tribally developed categorical exclusions and streamlined, cost effective processes for environmental, ESA and NHPA compliance.
Coordinated Resource Management Planning and IRMPs		
Each tribal government should be the principal agent responsible for crafting, implementing, and monitoring a coordinated resources management plan congruent with its vision for forests and forest management. (Recommendation E1(a), page V-37)	I	While emphasis for preparation of IRMPs has diminished and special funding ceased, tribes are taking the lead in developing FMPs which provide for coordinated management of multiple forestland resources.
The BIA should provide full support, including the appropriate range of natural-resource expertise for coordinated resources planning and management and also provide research access. (Recommendation E1 (d), page V-37)	I	BIA has ceased special funding for IRMPs. BIA's technical assistance role has changed, and capabilities diminished with the transition to self-governance in carrying out forestry program operations.
A single manager should be responsible for delivering the entire natural-resource program at the local level. (Recommendation E1(e), page V-37)	I	Many tribal organizations now have a NR manager who oversees all, or most all natural-resource program activities.
Encourage interdisciplinary planning. Examine opportunities for improved integration of all forest and rangeland natural resource responsibilities at all BIA administrative levels. Promote the development of IRMPs by the Tribes. (Recommendation E1, page 160)	III	See previous comments.

TASK E *(continued)*

Recommendations in Response to Task E Findings	IFMAT I – 1993 II – 2003 III - 2013	Recommendation Implementation Status
Coordinated Resource Management Planning and IRMPs <i>(continued)</i>		
Reward tribes that demonstrate capacity for and commitment to forest and natural resource management and stewardship that meets balanced cultural, social, environmental and economic goals as vetted by tribal leadership, such as through an approved FMP, by enabling such tribes to establish and implement their own rules and procedures as sovereign, self-determining nations. (Recommendation E2, page 160)	III	ITARA authorizes tribes to implement tribal law, regulations, and procedures for management of their forests. To participate in the ITARA demonstration project tribes must have an approved FMP. Vetting and approval of the FMP by tribal leadership provides process for defining the tribal vision for the forest and achieving a balanced stewardship management approach.
Cross Boundary Collaboration and Co-Management		
Use TFPA to work with federal agencies and collaborate with state forest agencies to dedicate sufficient federal forest or state land within economically feasible haul distance for sustainable timber supply to augment tribal forest supply and form the combined anchor forest for local employment and manufacturing of forest products. (Recommendation E5, page 161)	III	Not addressed in follow-up implementation.
Build upon the anchor forest concept to explore the creation of “anchor plant, fish, and wildlife management areas” on federal lands to secure treaty rights on ceded lands that have suffered due to historic or current management practices on those areas. (Recommendation E6, page 161)	III	The Anchor Forest Report addressed the concept for creation of special interest areas on federal lands, however specific implementation has not occurred.
Forest Transportation Systems		
Amend current funding formulas to recognize the importance of forest transportation systems on Indian lands. Investigate and amend current FHWA funding formulas or processes that impede availability of funds for forest roads. (Recommendation E7, page 161)	III	Not accomplished.
Allotments		
Fund a “willing buyer-willing seller” program to enable tribes to consolidate tribal and allotment lands. (IFMAT II – Primary Recommendation (5), page 18)	IFMAT II	Partially implemented under Cobell.
Fund and conduct an accurate inventory of allotment lands to define their acreage and condition. (IFMAT II Additional - (G), page 20)	IFMAT II	In progress.
Fund and conduct an accurate inventory of allotment lands to define their acreage and condition. (Recommendation E2, page 74)	II	BIA function. IFMAT team is not aware if this has been addressed in follow-up implementation.

TASK F: A comparative analysis of forest management plans and their ability to meet tribal needs and priorities.

Recommendations in Response to Task F Findings	IFMAT I – 1993 II – 2003 III - 2013	Recommendation Implementation Status
Funding and Staffing		
Direct more staffing and funding towards bringing cultural resource planning, initiatives, and baseline data to where it can be effective in coordinated resource management. (Recommendation F2, page V-49)	I	Funding remains inadequate to meet legislative requirements. Specific funding for IRMPs, which plan for coordinated resource management, has been eliminated.
BIA should provide more technical support for forest planning. (Recommendation F3, page 176)	III	BIA has reduced capability to provide technical support. Use of contractors or a team of planning specialists may be viable options.
Forest Management Plan		
Broaden and deepen assessment of the ability of management plans to sustain tribal forests and their benefits. (IFMAT II Additional - (H), page 20)	II	Partially implemented, although many plans lack thorough or current assessments. Many FMPs do not include standards setting forth the funding and staffing requirements necessary to carry out each management plan.
Tribes should consider a desired-future-conditions based approach to forest planning. (Recommendation F1, page 174)	III	Partially implemented. Improvement in establishing Tribal visions for reservation forests is occurring.
Address special planning and management issues: allotments, Alaska, mixed ownerships, and off-reservation lands. (Recommendation F5, page V-49)	I	Allotments are being addressed in newly created programmatic FMP. Issues relating to trust lands in Alaska, mixed ownerships and off-reservation lands are being addressed in IFMAT IV assessments.
Planning for allotments needs more attention. (Recommendation F9, page 178)	III	
Forest plans should recognize and account for natural processes. (Recommendation F4, page 176)	III	Infodat data reveals few plans are being updated to address Recommendations F4, F5, and F6.
Forest plans should consider and address climate change. (Recommendation F5, page 176)	III	
Forest plans should consider current and future manufacturing infrastructure. (Recommendation F6, page 177)	III	Improvements have occurred in identifying staffing and funding needs and including metrics (quantitative criteria) in monitoring plans. However, more work is still needed.
Forest plans should more completely describe staffing and funding needs to carry out implementation of FMP goals and objectives (Recommendation F7, page 177)	III	
Forest plans should include quantitative criteria in more detail and clarity to evaluate FMP goals and objectives. (Recommendation F8, page 178)	III	
Additional - (I). BIA and/or ITC should convene a task force to further define sustainability on Indian forests in operational terms that can be readily translated to management realities. (IFMAT II Additional - (I), page 22)	II	Sustainability definition task force not implemented
Convene a task force to further define sustainability in operational terms that be translated to management realities. (Recommendation F3, page 80)	II	

TASK F (continued)

Recommendations in Response to Task F Findings	IFMAT I – 1993 II – 2003 III - 2013	Recommendation Implementation Status
Forest Management Plan (continued)		
Implement a management and oversight structure to ensure effective trust oversight in implementing plans that reflect the visions of individual tribes for forest sustainability. (IFMAT II – Primary Recommendation (2), page 17)	II	Not implemented for tribes under BIA program.
Forest Management Plan Development and Analysis		
Tribal governments should periodically reevaluate their visions to reflect changing conditions and desires. (Recommendation 2, page III-14)	I	Tribal forest management plans are not being reevaluated and updated on a regular basis. This is primarily due to funding and staffing limitations. Also contributing is the BIA policy on non-expiring plans.
Develop tribal Visions to guide forest management objectives and practices through inclusive and continuing tribal public involvement programs. (IFMAT II Additional - (A), page 19)	II	This has been reduced through the lack of support for the Integrated Resource Management plans and/or not maintaining of the forest management plan.
Each tribal government should consider developing a collective tribal vision where one does not now exist to guide management of tribal forests. (Recommendation 1, page III-14)	I	Each tribe should now have a forest management plan that lays out their tribal vision.
Ensure that coordinated resource management plans guide Indian forest management via clearly defined objectives, standards, operations plans, and monitoring procedures. (Recommendation F1, page V-48)	I	Improving but not completely met. Shortage of multi-disciplinary planning staff makes it difficult to address key forest planning issues and perform fully integrated planning activities.
Change the definition of sustained yield management to one that focuses on the protection of underlying ecological processes and forest productivity. (Recommendation F3(a), page V-49)	I	
Improve forest planning analysis: Make plan results accessible to the lay reader – graphs, figures, charts, etc. (Recommendation F3(b), page V-49)	I	
Improve forest planning analysis: Develop and analyze diverse set of alternatives. (Recommendation F3(c), page V-49)	I	
Improve forest planning analysis: Provide detailed timber supply discussion under the plan recommendations. (Recommendation F3(d), page V-49)	I	
Improve forest planning analysis: Modernize harvest scheduling techniques and up-to-date sustainability check. (Recommendation F3(e), page V-49)	I	
Improve forest planning analysis: Increase emphasis on operational planning to implement forest plans and IRMPs. (Recommendation F3(f), page V-49).	I	
Broaden and deepen the assessment of the ability of FMPs to sustain tribal forests and their benefits – make ‘achieving the tribal vision on a continuing basis the definition of sustainability. (Recommendation F1, page 80)	II	

TASK F (continued)

Recommendations in Response to Task F Findings	IFMAT I – 1993 II – 2003 III - 2013	Recommendation Implementation Status
Forest Inventories		
Improve the Bureau of Indian Affairs (BIA) CFI system. (Recommendation F4, page V-49)	I	Some progress has been made in standardizing processes and procedures. Tribes are wanting to expand the inventory system to include an integrated stand-level inventory as part of the overall FMIP program.
Consolidate the CFI analysis and integrate it with the GIS support. (Recommendation F4, page 81)	II	Tribes that have GIS support are integrating CFI into their systems. Many tribes and some Regions struggle to have GIS support.
Better inventory data are needed to build better planning models. (Recommendation F2, page 174)	III	Some progress has been made at developing integrated inventories that will address tribal issues as well as operational plans. Not all forests are moving towards this.
IRMP		
Accelerate development of Integrated Resource Management Plans. (IFMAT II – Primary Recommendation (4), page 18).	II	With the management decision to stop special funding for IRMPs, the program has come to a stand-still.
Maintain IRMP process, increase funding so that 10 IRMPs could be completed annually. (Recommendation F2, page 80).	II	Some tribes with a strong interest in integrated resource planning are supporting development of IRMPs with tribal funds and staff.
For tribes that are moving in the direction of self-determination, an IRMP-type document could also serve as the trust agreement between the tribe and Secretary. (Recommendation F11, page 179).	III	
The development of IRMPs may not be appropriate for every tribe. BIA funding and technical support for IRMP development may be best targeted to reservations that can benefit most from an IRMP. (Recommendation F10, page 179).	III	

TASK G: An evaluation of the feasibility and desirability of establishing minimum standards against which the adequacy of the forestry programs of the BIA in fulfilling its trust responsibility to Indian tribes can be measured.

Recommendations in Response to Task G Findings	IFMAT I – 1993 II – 2003 III - 2013	Recommendation Implementation Status
Establishing and Implementing Trust Standards		
Innovative and continued efforts need to be made to foster, strengthen, and continue communication between the tribal membership, tribal forestry, other natural resource programs and tribal leadership. (IFMAT III – Indian People’s Vision – V1, page 22)	III	With the cultural and traditional uses of NTFP being a priority for most tribal members, there is a need for continued communication on the importance of traditional uses and forest management.
A tribal vision for forests and their management should be articulated where one does not now exist. (IFMAT I- Recommendation G1(a), page V-51, and IFMAT II- Recommendation G1, page 84)	I & II	IRMPs/FMPs, approved by tribes and the Secretary, are the principal documents at the field level where tribes establish a vision for forest management, set goals and describe standards for goals and specific forest practices to achieve desired outcomes. There has been improvement in IRMPs/ FMPs in defining tribal vision for forests and establishing trust standards consistent with the vision and forest management goals. More emphasis is also being given to establishing standards for monitoring and adaptive management to measure achievement of desired conditions and outcomes. Standards setting forth the funding and staffing requirements necessary to carry out each management plan are lacking in many FMPs.
Trust standards should be linked and relative to the tribal vision. (IFMAT I – Recommendation G1(b), page V-52, and IFMAT II- Recommendation G1, page 84)	I & II	
Such standards should have measurable yardsticks for achieving trust responsibility. (IFMAT I – Recommendation G1(d), page V-52, and IFMAT II- Recommendation G1, page 84)	I & II	
To the degree possible, standards should measure achievement of desired conditions and outcomes (performance) rather than inputs, techniques, or technologies. (IFMAT I- Recommendation G1(e), page V-51), and IFMAT II- Recommendation G1, page 84)	I & II	
Standards should encourage and reward compliance and promote efficient use of resources. (IFMAT I- Recommendation G1(f), page V-51, and IFMAT II- Recommendation G1, page 84)	I & II	
Adopt IFMAT I’s recommendation to define the trust standard as compliance with a forest management plan or IRMP that is based on the tribal vision for its forest, subject to approval and signature of the Secretary. (Recommendation G1, page 193, IFMAT II- Recommendation G1, page 84, and IFMAT I – Recommendation G1(c), page V-52)	III	

TASK G (continued)

Recommendations in Response to Task G Findings	IFMAT I – 1993 II – 2003 III - 2013	Recommendation Implementation Status
Establishing and Implementing Trust Standards (continued)		
Establish standards for funding Indian forestry that recognize the special ecological, social, and economic importance of Indian forests. (Recommendation G2, page 193)	III	Funding needs and significant underfunding are fully documented in all the IFMAT reports. Funding needs can be defined as standards for the various forest management activities addressed in these assessments. As tribes shift from economic priorities to greater stewardship focus in management, more attention is needed in the development of standards that address broader stewardship and social aspects of Indian forest management.
Trust Oversight, Evaluation, and Management Structure		
Require that trust standards be agreed upon between the tribal government and the Secretary of the Interior. (Recommendation G1, page V-51)	I	After three decades of focus on the need for effective trust oversight, BIA and tribal resource managers still have no clear guidance as to the discharge and effect of the federal government’s trust oversight responsibilities. Many tribal management structures place supervision of multiple natural resource programs under a single manager (NR Director).
Implement the forest trust oversight recommendations of IFMAT I and adopt a management structure that can efficiently plan and implement a timber program as part of an integrated resource plan based on a tribal vision (Recommendation G1), page 84)	I & II	
Consistent with IFMAT I and II, create an independent trust oversight body, for example, a permanent commission independent of both BIA and Secretary of the Interior, to evaluate the overall government’s fulfillment of its trust duties to Indian tribes. (Recommendation G7, page 194)	III	The recommendation for an independent trust oversight commission has not been implemented.
Ensure that the annual evaluations of compacted and contracted tribes, now done by the Office of the Special Trustee, include personnel with expertise in forestry. (Recommendation G3, page 193)	III	DOI/BIA process for trust evaluations remain unchanged. Evaluations are now conducted by the Bureau of Trust Fund Administration (BTFA). Evaluations focus on internal controls, accounting systems and conflict of interest safeguards. The BTFA team does not include professional forestry expertise.

TASK G (continued)

Recommendations in Response to Task G Findings	IFMAT I – 1993 II – 2003 III - 2013	Recommendation Implementation Status
Tribal Enterprises, Trust Responsibility, and Trust Standards		
Expand the trust responsibility to include technical assistance to tribal enterprises and reporting to tribes on enterprise performance. (Recommendation G2, page V-52)	I	IFMAT IV tribal visits indicated some improvement in communications and coordination between forest management and forest products enterprises. Expansion of trust responsibility to include TA to enterprises and establishment of trust standards to address this issue have not occurred.
Education and Leadership Initiative		
Invest in education to improve the ability of tribal members to develop and apply trust standards for natural resources management. (Recommendation G3, page V-52)	I	Increased education opportunities have occurred for both tribal leadership and tribal members.
A leadership initiative is needed which would (1) create more incentives for tribal members to enter natural resource, forest enterprise, and business professions, and (2) incorporate greater use of forest resource and management in kindergarten-grade 12 education. (Recommendation G1, page 85)	II	There are numerous webinars, seminars, conferences, and other activities available for tribal participants relating to natural resources management. ITC symposiums, webinars, and tribal college forestry programs provide specific information relating to Indian forest management. Many tribes include NR management and cultural related information in their youth education programs. Internal communications between NR/forestry staff and Tribal leadership provides on-going opportunity to convey knowledge on natural resources management. Overall, there is need for improvement in internal communications.
Provide on-going education and technical resources for tribal government leaders on natural resources management. (Recommendation G4, page 194)	III	

TASK G (continued)

Recommendations in Response to Task G Findings	IFMAT I – 1993 II – 2003 III - 2013	Recommendation Implementation Status
Interagency Agreements		
Adopt interagency agreements to increase TFPA activities on federal lands where tribes have off-reservation treaty rights and on sites where tribes identify that action is needed. (Recommendation G6, page 194)	III	New provisions in the 2018 Farm Bill authorizes DOA/USFS to fund TFPA projects using P.L. 638 agreements. In 2022, the USFS entered into 11 co-stewardship agreements with 13 tribes involving TFPA and other co-management activities.
Adopt interagency agreements between BIA and other federal agencies to coordinate deliveries of funding and technical support to tribes. (Recommendation G5, page 194)	III	With transition to self-governance, much of the focus for interagency agreements is between federal agencies and tribes. 2018 Farm Bill provides new authority for DOA/USFS delivery of funds for TFPA projects through P.L. 93-638 AFAs. Agreements involving BIA concerning funding delivery have not been specifically addressed in follow-up implementation.

TASK H*: A recommendation of any reforms and increased funding levels necessary to bring Indian forest land management programs to a state-of-the-art condition.

*Note: in IFMAT II, Task H was designated as Task I.

Recommendations in Response to Task H Findings	IFMAT I – 1993 II – 2003 III - 2013	Recommendation Implementation Status
Funding and Staffing		
Provide adequate funding and staffing as described in Tasks A, B and C of IFMAT I. (Recommendation H3, page V-53)	I	Efforts to achieve funding and staffing recommendations have been unsuccessful.
The most important federal investment opportunity is to fund Indian forestry, as a whole, in order to adequately discharge the federal trust responsibility and as a national and international example of integrated, locally based forest management. (Recommendation I1, page 89)	II	IFMAT I, II, and III assessments have repeatedly documented significant under-funding of Indian forestry programs. IFMAT III data indicates Indian forestry (BIA) funded at \$2.82/acre while National Forests are funded at \$8.57/acre. There are fewer staff per acre in Indian forestry programs than is the case for federal, state, or private forest operations. Data compiled for IFMAT III indicate a need for a 65% increase in staff for Indian forestry programs and staffing shortages are getting worse compared to prior IFMATs.
Additional funding above the \$119.6 million should be considered to remedy the federal policies that created forest allotments that fragment management of many Indian forests. (Recommendation I5, page 90)	II	
Increase Indian forestry funding by a minimum of \$ 112.7 million per year. (Recommendation H2, page 195)	III	
Increase staffing by 792 professional and technical forestry positions. An education coordinator will also be needed to oversee education and professional training as envisioned by NIFRMA. (Recommendation H2, page 195)	III	
Oversight		
Reconfigure the relationship between the federal government and the tribes (see detailed recommendations under IFMAT I – Sections E and G). (Recommendation H1, page V-53)	I	The passage of the ITARA legislation is a step towards improving the relationship.
Implement the trust oversight recommendations of IFMAT I. (Recommendation I2, page 90)	II	This has not been implemented.
The trust oversight recommendations of both previous IFMATs should be further developed and implemented before the next IFMAT review. (Recommendation H1, page 195)	III	
Self-Governance		
Federal support for activities that enhance true tribal autonomy, as defined by Kalt, should be maintained and intensified. (Recommendation H1, page 87)	II	There has been very little federal support for enterprises and there needs to be a streamlining of federal policies to improve enterprise opportunities.
Self-governance tribes should be able to develop tribal NEPA procedures and associated code to replace BIA NEPA manuals and handbooks. (Recommendation H6, page 195)	III	ITARA (2016) provides tribes with authority to replace NEPA with a tribal environmental review process set forth in tribal law and tribal forestry regulations.
Unfunded Mandates		
A specific list of unfunded mandates should be drawn up and recommendations for their alleviation made and implemented. (Recommendation H7, page 196)	III	Not addressed in follow-up implementation.

TASK H (continued)

Recommendations in Response to Task H Findings	IFMAT I – 1993 II – 2003 III - 2013	Recommendation Implementation Status
Forest Planning		
Tribes should consider a desired-future-conditions (DFC) based approach to forest planning. (Recommendation H9, page 196)	III	In recent development of FMPs, tribes are defining a tribal vision (DFC) for their forest and establishing trust standards consistent with vision. While emphasis for preparation of IRMPs has diminished and special funding ceased, tribes are developing FMPs which provide for coordinated management of multiple forestland resources.
Implement coordinated planning and management. (Recommendation H2, page V-53)	I	
The most urgent use for the increased funding should be to rebuild the BIA technical services capacity, at least to the 1991 level, but hopefully far beyond, which will be necessary for trust reform, to support a forest health initiative, and bring forest plans into regulation. (Recommendation I3, page 90)	II	BIA technical services are still lacking and have been reduced even further due to significant funding reductions.
The next highest use for the increased funding is for investment in the IRMP process. (Recommendation I4, page 90)	II	The IRMP program has been stalled by the BIA due to funding constraints.
Anchor Forest		
The Anchor Forest concept should be supported and expanded. Innovative tribal forest resource management techniques should be considered for portions of the federal forest estate. (Recommendation H4, page 195)	III	Concept is addressed in Anchor Forest report. Increased emphasis on tribal/federal co-management agreements is providing opportunities to apply innovative tribal management practices on the federal forest estate.
Anchor Forests concepts, such as those currently being piloted in Washington primarily through the Tribal Forest Protection Act, should be supported. (IFMAT III – Anchor Forests AF1, page 67)	III	The Anchor Forest concepts are being implemented primarily through the Tribal Forest Protection Act on federal lands adjacent to reservations.
Anchor Forests can evolve when applicable federal agencies bring Indian tribes into collaborative and co-management programs. (IFMAT III – Anchor Forests AF2, page 67)	III	
Non-governmental organizations and federal resource agencies should underwrite costs of tribal purchases of private forestlands through loans, grants, tax incentives, and support so that these lands can be placed in trust status and perpetually remain in forestry. (IFMAT III – Anchor Forests AF3, page 67)	III	More effort needs to be directed toward underwriting costs of tribal land acquisitions and the process of placing land into trust status needs to be timely and simplified.
Stewardship Contracting and TFPA are valuable and continue to be underutilized opportunities for tribes to assist fuels removals on federal lands. (IFMAT III – Anchor Forests AF4, page 67)	III	More stewardship contracting and TFPA projects need to be implemented to assist in reducing wildfire risk due to high fuel loading on federal lands that are threatening tribal resources.

TASK H *(continued)*

Recommendations in Response to Task H Findings	IFMAT I – 1993 II – 2003 III - 2013	Recommendation Implementation Status
Forest Trespass		
Control of trespass within tribal boundaries should be reviewed and strengthened. (Recommendation H8, page 19)	I, II, III	Funding continues to be an issue not only for forestry, but law enforcement as well.
Alaska		
An IFMAT-type study of the Native peoples of Alaska and their forests is long overdue. A regularly recurring state-of-the-resource report, including protocol for continuing data acquisition with specific reference to the NIFRMA-mandated questions should be implemented jointly between BIA and tribal organizations such as the ITC. (Recommendation H10, page 196)	III	IFMAT IV, which is to be completed in 2023, includes an assessment of forest management on Alaska trust lands comprised of native allotments and the Metlakatla reservation.
Indian Forest Management Assessments		
Continue the ten-year cycle of Indian Forest Management Assessments, with improved, continuous, and coordinated interim data collection techniques and provide adequate funding for a consistent monitoring process. (IFMAT II – Primary Recommendation (6), page 18)	III	IFMAT IV which is to be completed in 2023, includes an assessment of forest management on Alaska trust lands comprised of native allotments and the Metlakatla reservation.
If progress is made and monitored, continue the ten-year cycle of Indian Forest Management Assessments with improved, continuous, and coordinated interim data collection techniques and provide adequate funding for a consistent monitoring process. Note: In IFMAT II Task H was Designated Task I. (Recommendation Task I (6), page 91)	II	IFMAT assessments have been continued for two additional ten-year cycles with the completion of IFMATs III and IV. There is no indication that the assessments will not be continued in the future. Specific recurring monitoring funding has not been provided and this activity is largely unfunded.

Table of Tribes Visited and Governance Status

Tribe	Review Status VM = Virtual Meeting SV = Site Visit	Governance/Organization Type
Acoma Pueblo	VM & SV	638 Contract
Bristol Bay – Native Association (AK)	VM	638 Compact
Coos, Lower Umpqua & Siuslaw Indians	VM	638 Compact
Coquille	VM & SV	638 Compact/ITARA
Chugachmiut	VM & SV	NA
Cow Creek	VM & SV	638 Compact/ITARA
Coville	VM & SV	638 Coop. Agreement (Hybrid)
Eastern Band of Cherokee	VM & SV	Direct BIA Operations
Flathead (CSKT)	VM & SV	638 Compact
Galena (AK)	VM	NA
Grand Portage	VM & SV	638 Compact
Grand Ronde	VM & SV	638 Compact
Houlton Band of Maliseet	VM & SV	638 Contract
Hoopa	VM & SV	638 Compact
Karuk	VM&SV	638 Compact
Kalispel	VM & SV	638 Contract
Leech Lake	VM&SV	638 Compact
Makah	VM & SV	638 Compact
Menominee	VM & SV	638 Compact
Mi'kmaq Nation	VM & SV	638 Contract
Mescalero	VM & SV	Direct BIA Operations/638 Project Contracts
Metlakatla	VM	Direct BIA Operations
Mississippi Band Choctaw	VM & SV	638 Contract
Navajo	VM & SV	638 Contract
Nez Perce	VM & SV	638 Contract
Passamaquoddy	VM & SV	638 Contract
Penobscot	VM & SV	638 Contract
Quinault	VM & SV	638 Compact
Red Lake	VM & SV	638 Contract
Spokane	VM & SV	638 Compact
Stockbridge Munsee	VM & SV	Direct BIA Operations/638 Project Contracts
San Carlos	VM & SV	638 Contract
Santa Clara Pueblo	VM & SV	638 Compact
Tanana Chiefs (AK)	VM&SV	638 Compact
Tulalip	VM & SV	638 Compact
Tule River	VM&SV	638 Contract
Warm Springs	VM & SV	638 Compact
White Earth	VM & SV	Direct BIA Operations/638 Project Contracts
White Mt. Apache	VM & SV	Direct BIA Operations/638 Project Contracts
Yakama	VM & SV	Direct BIA Operations/638 Project Contracts
Yurok	VM&SV	638 Compact

Survey/Questionnaire Template

IFMAT IV Workforce Survey

IFMAT IV Workforce Survey

The Indian Forest Management Assessment Team (IFMAT) requests your assistance in gathering important information on the workforce involved with Indian forestry. Please take a few minutes to complete this short survey.

Survey Results will be aggregated to ensure that confidentiality of individual survey responses is maintained.

Thank you for your assistance

1. What is your ethnicity?

- Native
- Non-Native

2. If you are an enrolled member of a Federally recognized tribe, please list tribal affiliation here

3. What is your gender?

- Male
- Female
- Non-binary
- Prefer not to answer

4. Who is your employer? Please provide specific Tribe, agency, office and other relevant information

5. If you are a tribal member, where do you work?

- Your home reservation
- Other reservation
- Off reservation

6. If you work on a reservation, how are forest management services provided?

- 638 contract
- Self-governance compact
- Direct service
- Hybrid (BIA and tribal)

Other (please specify)

7. What is your primary area of responsibility?

- | | | |
|---|--|---|
| <input type="checkbox"/> Program Administration | <input type="checkbox"/> Forest Development | <input type="checkbox"/> Forest Research |
| <input type="checkbox"/> Administrative Support | <input type="checkbox"/> Forest Protection | <input type="checkbox"/> Forestry Education |
| <input type="checkbox"/> Forest Planning | <input type="checkbox"/> Multiple Use Management | <input type="checkbox"/> Technical Assistance |
| <input type="checkbox"/> Forest Product Sales | <input type="checkbox"/> Roads | |

Other (please specify)

8. Describe your position type

- Professional
- Technical
- Support
- Temporary/Furlough-able

Other (please specify)

9. Please tell us your age

10. How many years have you been working in Indian forestry

11. How long have you been in your present position

12. At what age do you plan to retire?

13. Please tell us your highest level of formal education

High School

4 year College

PhD

2 year College

Masters Degree

Other (please specify)

14. Please provide details on your field of study

15. Please provide details on the colleges and/or universities that you attended

16. How many total FTE forestry related positions are in your agency or program?

17. Number of vacancies

18. Primary reason for vacancies

19. Average length of time needed to fill vacancies

1 month

4-6 months

More than 1 year

2-3 months

7 months- 1 year

20. Why did you decide to work in Indian forestry?

21. What do you enjoy most about your job?

22. What do you find most challenging about your job?

23. What could be done to help support you in your job?

24. What training would benefit you most?

25. Do you have any last comments or thoughts that you would like to share?

Thank you for taking the time to share your thoughts and information

IFMAT IV Tribal Public Questionnaire

IFMAT IV Tribal Public Questionnaire

In 1990 Congress passed the National Indian Forest Resource Management Act (NIFRMA) in order to assure that Indian forest lands were managed in a sustainable manner that benefited tribes and that the Bureau of Indian Affairs was living up to its Trust responsibility in relation to forest management on tribal lands.

As part of NIFRMA, the Indian Forest Management Assessment Team (IFMAT) process was created. This calls for a once every ten year review of the state of Indian forestry by an objective 3rd party group of forestry experts. The IFMAT IV team is currently conducting the 4th of these assessments, with a report due in spring of 2023.

This survey is a part of that process, and is designed so that the IFMAT team can hear the opinions of the tribal public and to ensure that programs meet the objectives and goals of individual tribes.

The information obtained through these questions will be of vital importance to the future of Indian Forest lands. Please take the time to personally complete the survey. Your participation, perspectives and opinions will be invaluable. We appreciate your candid opinions. All responses will be reported in terms of trends, ensuring the confidentiality of individual responses. The survey should take approximately 15 minutes.

Background information

Please take a moment to tell us a bit about yourself. This will help us look for trends and patterns in the survey data.

All individual information will be kept strictly confidential

1. Please describe your occupation/job

2. Which reservation do you live on?

3. Are you a tribal member of the above-named reservation?

Yes

No

4. What is your gender?

Female

Male

Non-binary

Prefer not to answer

5. What is your age?

18-25

26-35

36-45

46-55

56-65

Over 65

6. Please describe your level of schooling

K-6

7-9

10-12

College

Number of years of college (if applicable)

Tribal Public Questionnaire

Please answer the following questions using a scale from 5 (very concerned) to 1 (not concerned) or 5 (most) to 1 (least)

7. In general, how concerned are you about what happens on your tribal forests?

5 4 3 2 1

8. What do you want from your tribal/association forests

	5	4	3	2	1
Recreation	<input type="radio"/>				
Income	<input type="radio"/>				
Subsistence	<input type="radio"/>				
Protection of forest resources	<input type="radio"/>				
Spiritual values	<input type="radio"/>				
Cultural values	<input type="radio"/>				
Beauty/Scenery	<input type="radio"/>				
Other	<input type="radio"/>				

Other (please specify)

9. Which three of the above do you most value?

1

2

3

10. How well do you think your forests are being managed now for each of the following? Please rate on a scale from 5 (excellent) to 1 (poor)

	5	4	3	2	1
Wildlife	<input type="radio"/>				
Fisheries	<input type="radio"/>				
Grazing for livestock	<input type="radio"/>				
Timber of firewood for tribal use	<input type="radio"/>				
Timber for sale or enterprise	<input type="radio"/>				
Recreation	<input type="radio"/>				
Water quality and quantity	<input type="radio"/>				
Cultural site protection	<input type="radio"/>				
Forest resource protection	<input type="radio"/>				
Non timber forest products (e.g. mushrooms)	<input type="radio"/>				
Obtaining a fair price for timber	<input type="radio"/>				
Employment of tribal members	<input type="radio"/>				
Creation of new enterprises	<input type="radio"/>				
Food gathering	<input type="radio"/>				
Spiritual values	<input type="radio"/>				
Visual quality	<input type="radio"/>				
Protection from pollution/waste	<input type="radio"/>				
Poaching	<input type="radio"/>				
Trespassing	<input type="radio"/>				
Overall management	<input type="radio"/>				

11. Of the forest resources or activities listed above, which are the three most important to you?

1

2

3

12. What organization has primary management responsibility for your forests?

- BIA
- Tribe
- Equally shared Tribe and BIA
- Don't know

Other (please specify)

13. What organization in your opinion should have primary management responsibility for your forests?

- BIA
- Tribe
- Equally shared Tribe and BIA
- Don't know

Other (please specify)

14. What resources/ activities do you think are being managed best on your forests (list up to three)?

1

2

3

15. What resources/ activities do you think need improvement on your forests, and suggest what should be done about them (list up to three).

1

2

3

16. In your opinion, how well managed is federal land near your reservation? (5=well managed, 1=poorly managed)

5 4 3 2 1

17. Should your tribe be engaged in the management of adjacent federal lands to better meet tribal needs and values? If yes, what forest resources or activities are the highest priority?

Yes

No

Other (please specify)

18. How much has climate change related factors (such as drought, fire, insects and others) impacted your use of the forests around you? (5=large impact, 1=no impact)

5

4

3

2

1

19. Please give examples of how climate change has impacted your interaction with the forest.

20. Do you have any additional comments or suggestions about your forests?

Thank you for your comments. Your input is a valuable part of the IFMAT process

If you would be interested in being contacted to help with interpretation and follow-up, please provide the following information (optional)

21. Optional contact information for follow up questions

Name

Phone number

Address

Email

Recommendations for IFMAT V

Considerations for IFMAT V

1. Advances in forest technology, particularly in inventory methods
2. Changes in the approach to fire
3. Changes in the approaches to stewardship management
4. A more complete appraisal of role of Indian forests and water supply
5. The economic role of timber in light of the move to stewardship
6. Review of ITARA adoption, successes, and challenges
7. Growth of cross-boundary collaboration
8. Role of forests in the tribal economy (jobs, education, foods, revenues, water)
9. Advances in transportation technology
10. Experience with the rollout of the USGS approach to the cost-plus-loss approach to evaluating wildfire containment strategies on tribal lands
11. Impact of federal HR policies on Indian forestry
12. Status of all independent reviews that IFMAT IV called for
13. Improved accounting of non-BIA transfers to Indian forestry (Both USDA and other BIA programs)
14. Updating of the Crosswalk (Appendix v) in preparation for IFMAT V and Improvement to F&PA in preparation for IFMAT V
15. Future inquiry and assessment of carbon markets organized by IFMAT IV Tasks (see below)

In addition to the questions from IFMAT IV the team feels that forest carbon will be a much larger and more mature issue by the time of IFMAT V, so the team offers some questions in that area, organized by Tasks A – K.

A. Management practices:

How can market participation be compatible with forest practice options and the ability to accomplish tribal forest vision and forest management goals?

B. Condition of Indian forest lands:

How will expanding disturbance patterns and associated carbon project reversals and other

risks affect the costs and/or revenues from carbon market participation?

C. Staffing patterns:

What special capabilities and staff will be needed by tribes to participate in compliance and voluntary markets and achieve state of the art forestry practice?

D. Timber sales administration:

How will continued commitments under carbon market arrangements constrain timber sales, harvesting options and/or operations?

E. Administrative procedures, rules and policies of the Bureau of Indian Affairs - trust responsibility and recent laws, including ITARA:

What will be the DOI/BIA's policies about market participation and carbon sequestration as a trust resource?

What rules, procedures, and policies should be removed or revised to remove barriers to participation in carbon markets – compliance or voluntary?

What might ITARA options imply for more effectively participating in forest carbon markets?

F. Adequacy of land management plans and compatibility with integrated resource management plans:

How should 40–100-year carbon commitments be factored into forest management plans and/or integrated resource management plans?

What standards for carbon inventory and carbon stewardship should be woven into forest plan revisions? How should tradeoffs and complementarities between carbon stewardship, timber, and other values be handled in the plan?

G. Minimum standards for BIA trust responsibility:

What would effective guidance on managing forest and woodland carbon stocks and sequestration on trust lands look like?

What differences could BIA's recognition of carbon stocks and sequestration as trust resources make in future carbon market arrangements and/or management of forests? Would this impact the implementation of NIFRMA mandates? What any parts of NIFRMA itself need to be revised to accommodate carbon market participation?

H. Reforms and funding levels necessary for state-of-the-art forestry:

How does carbon stewardship fit into tribal definitions of state-of-the-art forest management?

I. Tribal risk and adaptation related to climate change.

How should the impacts of a rapidly changing climate (and related disturbances) be factored into carbon market arrangements?

What are the tradeoffs between meeting carbon storage goals and managing the multiple, climate-influenced risks dependent on forest density management?

J. Indian forests in the general scheme of landscape ecology and restoration:

How can tribes use landscape scale management to influence disturbance patterns that pose risks to carbon project reversal and allow carbon stewardship and resilience at scales that are more cost-effective.

K. Institutional capability and capacity to support landscape scale management:

What benefits and costs are offered in aggregate (multi-owner) arrangements for building carbon stewardship management and marketing along with timber and other services at a landscape portfolio scale? (Think “anchor forests” for carbon management.)

IFMAT IV Site Visit Handbook

4th Indian Forest Management Assessment Team Site Visit Handbook



This handbook is intended for tribal forestry and natural resource department personnel to inform a national assessment of tribal forests. This resource is supposed to provide guidance for tribes, identifies how to prepare for hosting the IFMAT team and includes briefing information on the purpose of the IFMAT tribal site visits.

TABLE OF CONTENTS

1. INTRODUCTORY LETTER
2. FREQUENTLY ASKED QUESTIONS
3. IFMAT TASKS
4. THE PRE-VISIT
5. SITE VISIT: EXAMPLE AGENDA
6. FOCUS GROUPS: RATIONALE AND PROTOCOL
7. SURVEYS: DESCRIPTION AND AUDIENCE
8. SITE VISIT REPORT
9. DOCUMENT CHECKLIST
10. APPENDIX: DIRECT AND INDIRECT IMPACTS, OUTCOMES, AND INFLUENCES FROM IFMAT ASSESSMENTS

1. INTRODUCTORY LETTER

The Secretary of the Interior is required under the National Indian Forest Resource Management Act (NIFRMA) to undertake an independent national assessment of Indian Forests and Forest Management each ten years. This assessment is contracted to the Intertribal Timber Council (ITC) which in turn has engaged a team of nationally known experts in forest management to do the assessment and prepare the report to Congress. This team, known as the Indian Forest Management Assessment Team (IFMAT) is required to address eight tasks defined in NIFRMA and three additional tasks specified by ITC.

An important part of the assessment is to understand tribal management goals, forest conditions, and management issues. To gather information for the assessment, IFMAT has selected a sample of approximately 40 reservations, Pueblos and Alaska Native Corporations. Your tribe has been identified as an important part of the IFMAT sample representing conditions in your region.

Past IFMAT reports have been used by ITC and many tribes to inform funding requests, leverage increased cooperation with federal agencies, advocate for support regarding many topics including education, workforce development and climate change adaptation, and to inform new legislation on topics ranging from trust reform to landscape level management.

We appreciate the time and effort involved on your part in hosting our site visit that provides us with opportunities to collect information that will inform all aspects of our report. As our assessment is national in scope, we will not be referring to any specific tribe or using any photos in our assessment report to Congress without tribal permission. There will be an opportunity to discuss any site-specific questions you may have during the visit. A site report summarizing our visit will be emailed to you within 30 days of the completion of our visit.

Once again, thank you very much for your invitation. We look forward to our visit.

2. FREQUENTLY ASKED QUESTIONS

- 1. Who is IFMAT and who do they work for? Who is paying for this study? How were the IFMAT members chosen?**

IFMAT is an independent team of forestry experts tasked with assessing the status of tribal forests and forest management in response to NIFRMA. IFMAT members work as contractors selected by the ITC. The BIA is the primary agency that funds the assessment with some support from the USDA Forest Service.
- 2. What is IFMAT's COVID-19 strategy?**

We will be flexible with all travel associated with IFMAT data collection and we will engage in virtual meetings when possible. In the event we can do in-person visits, we will respect all tribal policies regarding COVID-19 restrictions, and the assessment team will always wear masks and socially distance. See sections 4 and 6 for additional safety measurements and precautions.
- 3. What does IFMAT want to know from us?**

Mainly, IFMAT wants to know how your tribe is managing their forest resources, if there are any staffing/funding issues, and if there is anything that could improve the government-to-government trust relationship between tribes and the BIA. There are 8 Congressionally mandated questions for the IFMAT to address plus 3 additional questions from ITC.
- 4. How was our reservation chosen? Does IFMAT visit more than one reservation?**

IFMAT requested the involvement of your tribe because the core team felt there were multiple issues and elements that will offer regional insights into answering the 11 national assessment questions. IFMAT will visit up to 40 tribes, pueblos, and Alaska Native Corporations.
- 5. Is IFMAT here to help us (what is the benefit to the reservation)?**

IFMAT findings and recommendations that are compiled at a national scope may have positive impacts to your community (see Appendix for a full list of direct and indirect benefits of IFMAT for tribes). During site visits the assessment team is supposed to be independent and unbiased and it does not represent an audit of specific tribal forest management practices. However, a follow-up conversation with the team and any tribal staff is an option for specific needs and requests.
- 6. Is only trust land included? Are allottees included?**

Trust land, including allotments in trust, make up most of the assessment; however non-trust lands including those areas managed by Alaska Native Corporations where relevant to answer the 11 questions.
- 7. How will our data be used?**

Data from individual tribal site visits will be aggregated regionally and compiled to develop national findings and recommendations. The final report will be delivered to Congress in 2023.
- 8. Do we get a grade?**

No. But a site visit report reflecting what we heard and observed will come out from the assessment team within 30 days of our visit. The report will not include sensitive information or be part of IFMAT's final report. See Section 8 for site visit report template.
- 9. What is the purpose of the focus group? Who should or should not be at the focus group?**

Data from the focus group and the tribal member satisfaction survey (see below) will be combined to better understand tribal members vision of forest management and how it is being implemented on the ground. Members of the tribal community including elders, youth and any individual interested in forest management would be appropriate to invite to the focus group (see Section 6). Focus group facilitators will ensure that all participants get a chance to express their views. Input from forest managers, BIA officials and direct supervisors will be collected separately. When possible and appropriate, IFMAT will provide food and refreshments to participants.
- 10. Will we be surveyed? Who should or should not participate in the surveys?**

IFMAT IV has developed two surveys. One is a workforce survey that we would appreciate you sharing with all tribal and (if applicable) BIA forestry related employees. The second is a tribal member satisfaction survey that can be shared with all interested tribal members.
- 11. Will individual tribes be identified in the report to Congress?**

Specific tribes will not be identified in the report, except for in the case of positive examples to represent specific topics where the tribe's permission will be requested.
- 12. When will we see the final report?**

We intend to have the report finalized by early 2023 but we will revisit our site visit plan

and writing timelines considering COVID-19. Participating tribes will receive a mailed report. ITC generally provides copies of the IFMAT report at the Timber Symposium immediately following assessment completion.

13. Is there an implementation plan?

ITC leads implementation efforts. IFMAT will assist as requested with the implementation efforts of ITC. ITC followed up on most of IFMAT III recommendations. See Appendix.

3. IFMAT TASKS

The National Indian Forest Resource Management Act of 1990 (PL 101-630) created the independent review process that is IFMAT and directed the team to address eight tasks (A-H below). Additionally, the Intertribal Timber Council has asked IFMAT IV to look at 3 additional tasks (I-K). The purpose of the IFMAT site visit to your tribe/agency is to gather data relevant to answering these tasks at a national level by giving us insight to your context, operations, funding, and staffing. Core team facilitators name in parentheses at the end of each task.

- A. An in-depth analysis of management practices on, and the level of funding for, specific Indian forest land compared with similar Federal and private forest lands (Sessions).
- B. A survey of the condition of Indian forest lands, including health and productivity levels (Sessions).
- C. An evaluation of the staffing patterns of forestry organizations of the Bureau of Indian Affairs and of Indian tribes (Leighton).
- D. An evaluation of procedures employed in timber sales administration, including preparation, field supervision, and accountability for proceeds (Corrao).
- E. An analysis of the potential for reducing or eliminating relevant administrative procedures, rules, and policies of the Bureau of Indian Affairs consistent with the Federal trust responsibility, and recent laws such as the Indian Trust Asset Reform Act (ITARA) (Gordon).
- F. A comprehensive review of the adequacy of Indian forest land management plans, including

their compatibility with applicable tribal integrated resource management plans and their ability to meet tribal needs and priorities (Sessions).

- G. An evaluation of the feasibility and desirability of establishing minimum standards against which the adequacy of the forestry programs of the Bureau of Indian Affairs in fulfilling its trust responsibility to Indian tribes can be measured (Hoagland).
- H. A recommendation of any reforms and increased funding levels necessary to bring Indian forest land management programs to a state-of-the-art condition (Gordon).
- I. An evaluation of tribal risk and adaptation related to climate change (Leighton).
- J. An assessment of how Indian forests fit into the general scheme of landscape ecology and restoration (Hoagland).
- K. An assessment of institutional capability, staff, equipment, facilities, and organizational components necessary to support landscape scale management (Corrao).

IFMAT IV defines a state-of-the-art (SOTA) Indian forest management program as having the funding, staff, training, infrastructure, methods, technologies, and access to research and marketing support to maintain Indian forest land in a perpetually productive state consistent with tribal values and vision and that the application of those brings Indian forests to the current and future on-the-ground conditions in terms of stocking, resilience, and productivity, consistent with tribal goals.

4. THE PRE-VISIT

Prior to the site visit, the IFMAT Program Manager will contact the tribal liaison identified in the tribe's acceptance letter. The purpose of the pre-visit is to:

- Identify COVID-19 guidance from the tribe (including lodging, transportation, meals)
- Identify key tribal departments/members to visit.
- Develop the agenda for the site visit.
- Identify key natural resources issues that will guide IFMAT in selecting specialists for the site visit.

- Gather planning documents that will brief IFMAT members on the natural resource situation (See Section 8 - IFMAT checklist of requested documents).
- Lay the groundwork for the focus groups.
- Discussion on surveys.

The pre-visit will take place prior to the virtual and (when possible) onsite visits. See section 5 for a visit template.

5. SITE VISIT

Example Agenda

<p>Day 1 (Remote) Scheduled 1-2 weeks in advance of field visit</p>	<p>Focused Zoom meetings between IFMAT and:</p> <ul style="list-style-type: none">▪ Tribal Council▪ Forestry Department (including wildland fire and fuels)▪ Other tribal staff from departments such as Fisheries and Wildlife, Water Resources, Cultural and historic preservation <p>We want to hear from you about the forest issues of importance to your tribe.</p> <p>Questions will be asked each group regarding the following categories:</p> <ul style="list-style-type: none">▪ Self-Governance▪ Land Management▪ Forest Planning▪ Staffing▪ Handbooks▪ Outreach & Training▪ Enterprises▪ Review of Environmental & Policy Conformance
<p>Day 2</p>	<p>Field visit all day based on accessibility. Forest tour based on opportunities, issues, concerns and success stories from the first day. This could include timber and woodland management examples, enterprise activity, collaborative projects, wildlife, water, or fisheries management.</p>
<p>Day 3</p>	<p>Optional additional field day as needed</p>
<p>Debrief and Follow Up</p>	<p>Formal close out and debrief by Zoom will be scheduled. Follow up with different departments by Zoom as needed.</p>

6. FOCUS GROUPS: RATIONALE AND PROTOCOL

An important component of the IFMAT information gathering process is the tribal member focus group, which when combined with the tribal member satisfaction survey, provides important insights into how tribal members view the management of forests on their reservation and how that perception has changed over time.

Methodology

The methodology for the focus group was first created during IFMAT I and has remained essentially unchanged in subsequent IFMATs. A group of tribal members representing a diversity of views and life experience are invited by the Tribal Forest Manager/ liaison or other tribal official to a focus group, where each participant is asked to answer the following three questions:

1. What do you most value/want from your forest and why?
2. What do you think about current management practices on your tribal forest?
3. Have you seen changes in management since the last IFMAT (ten years ago), and if so, what has changed?

Every focus group member will get a chance to answer all three questions. Frequently follow up questions and dialogue between group members occurs during this process.

Focus Group Selection

IFMAT will work with the Tribal forester or other designated liaison to identify a diverse group of tribal members. This group could include Elders, Tribal Council or other government figures, tribal youth, loggers, allottees or any other member with an interest and opinion in forest management. The ideal group size is generally 6-8 individuals. In instances where more tribal members are available for a focus group, IFMAT moderators will break the group into smaller subgroups. In cases where a translator is needed, IFMAT will work with the tribal liaison to identify and contract a qualified individual.

COVID-19 Strategy

Considering COVID-19, we will collaborate extensively with the tribal liaison to explore virtual options for engagement, such as Zoom or other video conferencing platforms.

Focus groups will be recorded, for content analysis, if consent of all parties is received.

In all cases (virtual or in-person, recorded or not), information will be aggregated and kept confidential. Information will not be sent to Tribal Council, departmental offices or any other entities and no individual will be named in the final report or other documents.

7. SURVEYS: DESCRIPTION AND AUDIENCE

Surveys have played an important role in data gathering throughout previous IFMAT reports and have been instrumental to understanding the values and management goals of tribal members throughout the nation and have also provided detailed insights into the BIA and tribal forestry workforce. The forest manager and/or liaison plays an important role in gathering this data by providing the surveys to forestry staff and the tribal public. A copy of each survey as well as a link to the survey website are included separately.

Below is a brief description of each survey and the audience that it is designed for:

Tribal Membership Survey

<https://www.surveymonkey.com/r/IFMATIVtms>

This survey is designed to understand the values of both tribal members and foresters related to

forest management and their degree of satisfaction with various types of management activities on the ground. It is largely unchanged since IFMAT I, providing important trend data over a thirty-year period. *This survey can be provided to forestry staff and to members of the tribal public interested in how tribal forests are managed.* It is also provided to focus group participants. Estimated time to complete survey is 15-20 minutes.

Workforce Survey

<https://www.surveymonkey.com/r/IFMATIVwfs>

Developed originally for IFMAT III, this survey is designed to get more detail on the tribal and BIA workforce, including age, education, and past experiences, as well as input regarding desired training. *Please have all tribal forestry staff fill out this survey.* Estimated time to complete survey is about 10-15 minutes.

8. SITE VISIT REPORT

A site visit report summarizing the IFMAT visit will be developed by the Project Manager. It will document site visit contacts, field visits, IFMAT observations, focus meetings, materials reviewed, and tribal council contacts. The site visit report will be emailed to the forest manager and IFMAT visit liaison for review and then to Tribal leadership within 30 days of the completion of the site visit.

Site Visit Report Template

1. Name of tribe
2. Date of site visit
3. Tribal leadership, forest manager, tribal liaison (names and contact emails)
4. Office meetings (e.g., natural resources, forestry, wildlife, water)
 - a. Documents reviewed (e.g., IRMP, forest plan, wildfire plan, resource plans, transportation plan, climate adaptation plan)
 - b. Interviews conducted
5. Field site visits
 - a. Observations
 - b. Opportunities identified by tribal hosts
6. Focus meetings
 - c. Structure of focus group and questions asked
 - d. Tribal participants: community groups, elders, resource groups (e.g., grazing, hunting)
7. Enterprise meetings (e.g., goals, strategies, business plans, forestry coordination)
8. Tribal council participation
9. Key topics discussed (e.g., resource issues, funding and staff, education, workforce related training, BIA services)
10. Appendix (includes the site visit agenda and participants list)

9. DOCUMENT CHECKLIST

Please send all available and relevant documents to Vincent Corrao, IFMAT IV Program Coordinator at (corrao@consulting-foresters.com) in advance of the IFMAT IV site visit.

Documents of interest can include:

- Integrated Resource Management Plan
- Forest Management Plan
- Environmental Assessment
- Forest Practices Act
- Indian Trust Asset Management Plan
- Wildland Fire Plan
- Climate Adaptation Plan
- Hydrology/Hydrological Plan/Riparian Management Zone Plans
- Transportation Plan
- Wildlife Management Plan
- Woodland Plan and/or other Resource Plans
- Enterprise Business Plan
- Maps
- Data Management or Institutional Review Board equivalent
- Tribal Contacts
- Organization Chart
- Workforce Development or Staff Training/ Education Plan

10. APPENDIX: DIRECT AND INDIRECT IMPACTS, OUTCOMES, AND INFLUENCES FROM IFMAT ASSESSMENTS

- IFMAT recommendations have supported ITC testimony for funding for 25 years. Example: ITC President Rigdon's testimony to the House Appropriations Subcommittee for the Interior, Environment, and Related Agencies on April 8, 2014.
- Out of the 74 IFMAT III recommendations, 65 have been addressed with actions, projects or in discussions during the ITC symposia or workshops.
- BIA Forestry and fire management budgets have been trending upward. Even though many federal programs have seen drastic funding reductions, Indian forestry programs have been steadily increasing (over 20% in total since IFMAT III), even though the level of comparable funding continues to be well below what is needed.
- IFMAT proposed the reorganization of federal trust responsibility to Indian Forest Management beginning with the IFMAT I report and repeated in IFMAT II, III. In 2016, The Indian Trust Asset Reform (ITARA) adopted a similar structure. ITARA authorizes tribes to submit trust asset management plans to the Secretary that will guide federal or tribal management.
- IFMAT I recommended that forestry and natural resource department decision making be integrated. Today nearly all are.
- IFMAT III was concerned about hazardous fuels reduction funding for Indian forests under the HFPAS model. Shortly after the release of IFMAT III, HFPAS was decommissioned and replaced with a more equitable fuels funding distribution model.
- IFMAT III raised concerns about lack of workforce development. ITC has launched a workforce development strategic plan that has incorporated many of IFMAT III's findings and recommendations.
- IFMAT II recommended wildfire and forestry funding be integrated to permit increased efficiency in meeting tribal goals. In 2018 an Executive Order permitted this to be done.
- Tiering off IFMAT reports, several positions have been established by BIA:
 - As part of the overall workforce development effort, the BIA initiated grants focusing on youth engagement and hired a Pathways coordinator.
 - BIA NIFC has developed a workforce development position.
 - BIA hired a Climate Change coordinator, now the BIA Resilience Coordinator
- As part of the implementation plan for IFMAT III recommendations, ITC carried out major projects on Anchor Forests.
- IFMATs I and III recommended increased access to research for Indian forestry. In the 2018 Farm Bill, Tribal Colleges and Universities received access to McIntire Stennis federal forestry research funds.
- IFMAT III recommended increased tribal involvement in cross boundary management. The 2018 Farm Bill contained several landscape level management authorities that included tribal participation, including extension of Good Neighbor authority to tribes and a provision for 638 contracting within the Tribal Forest Protection Act.
- IFMAT III held a roundtable in Washington, D.C to discuss interagency trust responsibility. In the following decade, the USFS, NRCS among others have increased their involvement, engagement and support of tribal forestry research, management and stewardship and has developed significant partnerships with ITC on several projects including Anchor Forests, a TFPA analysis and 638 contracting webinars and planning.

IFMAT IV Tribal Site Visit Sampling Scheme

Methodology:

Site visit recommendations were made based on an analysis that considered multiple factors:

Past IFMAT visit history, with special weight given to tribes that have hosted at least 2 previous visits

Governance –creating a balance of Compact, Contract, ITARA demonstration project, Direct Service, etc.

Balance to include all regions that wanted to have the assessment.

BIA regional offices (and agency offices as appropriate)

Forest area (large, medium, small; % commercial, woodland)

Special attributes (time of forest acquisition, legal status, fee land) Tribes with a new or growing trust acreage land base (Land Buy Back and other acquisition e.g. Muckleshoot)

Allotments (large issue, i.e. Quinault, Alaska, etc.)

Special issues (fire, insects, disease, climate change vulnerability)

Shared Stewardship, addressing tribal values on other lands (RTRL, GNA, TFPA, etc.)

Unusual or unique attributes (mills, restored tribes etc.)

Taking all of the above factors into account, a spatial/geographic analysis was done to coordinate and strategically optimize IFMAT IV travel.

IFMAT IV Tribal Virtual Meeting Questions

Tribal Forester (TF)

Tribal Council (TC)

Overview Questions to be presented by the Managers or a PowerPoint Presentation

Recommendation is to fill out responses directly on this form

Staff (S) - other natural resource staff, heritage, cultural resources, etc.

1. What are the most pressing forestry related issues for your tribe and in your region? (all)
2. How well are you supported by the BIA? (all)

Self-governance

1. What opportunities and challenges do see for your tribe regarding ITARA? (TC, TF)
2. What is working and what is not working regarding the trust responsibility? What other reforms would make your life easier? (all)
3. Do you think ITARA will affect your forest management? (TF, TC)
4. What comments do you have about 638 contracting or compacting services?

Landscape Management

1. Do you believe there are the opportunities for your tribe to promote shared stewardship and landscape management? (all) *add this to tribal member satisfaction survey?
2. What would your tribe need (capacity, tools, etc.) to play a large leadership role in promoting shared stewardship? (all)
3. What are the leading forest health issues on your forest and adjacent forests? Are you satisfied with how forest health funds are distributed to your tribe? (TF)
4. Do you have sufficient access to research publications and are they relevant to your issues? (TF, S)

Forest planning

1. Does forestry have sufficient depth in planning, forest inventory, and GIS (2019 F&PA additional needs)?
2. Does the FMP guide everyday management? Is it a "living document" – is it regularly updated as new data or new ideas come along? Does it help solve new problems? Is it useful for transferring knowledge, objectives, and insights from one cohort of forest managers to the next? Can you think of anything that the next plan should address that the current plan does not?

3. Do you view the FMP as a contract or as guidance? Does the plan help you manage more effectively or efficiently?
4. Are the IRMP goals being met and are they represented in the FMP and harvest schedule?
5. How is sustainability being measured in the forest plan? Is non declining even flow harvest schedule (NDEF) a useful measure for you? Stand based inventory vs CFI. Has the CFI been useful for harvest scheduling? Does the FMP provide sufficient planning outputs for enterprise strategic planning?
6. Is the FMP consistent with the IRMP? Are the desired rotation ages reasonable in the forest plan?
7. Is climate change mitigation represented in the forest plan/IRMP. How are the carbon projects represented? Will they affect outputs or forest health?
8. What is the status of forest inventory for your tribe? Does the RO provide inventory expertise to your tribe? What kind and how much (stand based versus CFI)? (TF)
9. Do you have enough GIS and/or remote sensing capacity in your office? (TF)
10. What is the status of your wildfire plan, forest management plan and/or IRMP? (all)
11. Are you receiving the level of assistance you need from BoFRP? If you need more, what are your specific needs? (TF)
12. What is your office doing to support climate change adaptation planning? How severe will the impacts be to your tribe? Are regeneration plans coordinated with climate adaptation plans at the tribal and regional levels? (all)
13. Are you familiar with the Forest Service Watershed Framework for evaluating watershed treatment priorities? Would your tribe like to participate in some training on these tools? (S, TF)
14. How is the AAC being defined for your tribe? Are there changes that would increase its usefulness? Do you regard non-declining

even flow as a necessary component of AAC calculation? (TF)

15. Does your Region provide harvest scheduling support? If so, how? (TF)
16. Does your tribe receive ecosystem services (i.e., carbon, water) planning support? If so, from whom? (TF, TC?)

Staffing (IFMAT Team would like to view your organization chart)

1. Do you have the staff you need to carry out your forest management responsibilities? (all)
2. How many vacancies do you have? In what positions? How long does it take to fill a vacancy? Do you have HR needs and issues? Are you satisfied, in general, with quality of applicants for open positions? (all)
3. Are there any services or positions that need to be provided that currently are not available (e.g., wildlife biologists, hydrologists, economists, forest products marketing specialists)? (all)
4. Have BIA office consolidations helped or hindered delivery of services? Are further organizational changes needed? (all)
5. Do partnerships with, and funding from other federal agencies (e.g., USFS, NRCS, FWS, BLM) assist in your ability to manage your forest resources? (all)

Infrastructure

1. Is access to adequate facilities challenging your ability to deliver services and be effective?
2. Are there other infrastructure challenges that you experience (for example roads, logging capacity, sawmill capacity, personnel, etc.)?
3. Have you been able to access assistance from federal agencies such as HUD or USDA Rural Development?

Handbooks, Outreach and Training

1. Are the BIA handbooks useful? Is regional and national office handbook direction consistent? (TF)
2. What types of technical assistance/training is provided to you from the BIA? (TF, S)

Enterprises

1. Is the trust responsibility being upheld regarding tribal enterprises? (all)
2. What types of technical services are provided to tribal enterprises? Does the technical support include products marketing support?

Is benchmarking forest enterprise operations important? (all)

3. Do you feel that your tribe is receiving fair market value for their forest products? If not, what could be done to improve this situation? (all) *add this to tribal member satisfaction survey?

Review of environmental and policy conformance

1. Do you or the BIA audit your forest plan implementation? (TF)
2. Do you or the BIA audit your timber sale administration, accountability? (TF)
3. Are tribal enterprises audited? (TC, enterprise)
4. Is auditing part of the federal government's trust responsibility? (TC, TF)
5. Should the region perform audits, or do you feel that a 3rd party audit would be a better approach? (TF, TC)
6. Do you think a general definition of "state of the art forestry" would be a useful thing to have? If so, how would you define it? (TF)

Closing:

1. Do you have any suggestions about how the BIA could better support the fulfillment of the Trust Responsibility? (all)

Task questions are specific to the IFMAT assessment and interviews with key staff

TASK A- Management Practices and Funding- Forest Manager, Development Forester, Planning Forester

1. Clarify FPA Commercial Forest land base, Forest Development Expenditures, Other tribal contributions
2. Discuss Comparators and survey of management activities and costs on specific Indian forest land compared to similar federal and private forest lands.

TASK B- Planning forester, forest manager, natural resource manager

1. Does the FMP provide sufficient trend information for board feet? Is supplementary information available in growth, mortality, and inventory in cubic feet, carbon sequestration. Is there trend information in backlogs for thinning and forestation. Trends in biodiversity?
2. What are the IRMP Goals and do they address the specific needs. How are insects and pathogens to affect the forest than in the historical past. What are the primary drivers

on the reservation (density, age, climate)? Are hazardous fuel reduction treatments being carried out simultaneously with timber sales and forest development projects? How are forest health projects being represented in the FMP?

3. Do you have guidelines for setting watershed treatment priorities? Are you familiar with the Forest Service Watershed Framework for evaluating watershed treatment priorities? Would your tribe like to participate in some training on these tools? (S, TF)
4. How is sustainability identified and what does good stewardship look like?
5. Does harvesting activities address timely salvage post wildfire. Does the BIA provide adequate technical and operational support to identify early mortality?
6. Does the IRMP and forest plan contain goals for watershed condition. Does the BIA provide criteria and indicators of watershed health and carrying capacity (roads, wild horses, grazing)?
7. Is there a permit system for NTFP? What information is available from natural resources departments?

TASK C- Staffing-Forest Manager

1. Clarify FPA- current and identified needs. Review the organizational chart
2. Issues in hiring, recruitment, and retention
3. Comparable pay- tribe to BIA and BIA to other fed agencies
4. Training needs
5. COVID, employment and access to fed programs such as PPP

TASK D-Timber Sales Procedures-Forest Manager, Forest Development Forester, Timber Sale Forester

1. How many projects do you have (if any) that are shelf ready? Can you be nimble/flexible to adapt to changes in the markets?
2. What are the major factors affecting your stumpage values?
3. What are your costs for reforestation, pile burning, prescribe burning and pre-commercial thinning? What are your challenges to getting this work accomplished?
4. How is the TAAMS program used for the tribe's needs.

TASK E- Reduction in BIA Rules-Forest Manager, natural resource manager(s), planning forester (at minimum)

1. What BIA rules and regulations urgently need to be changed to make your management more effective?
2. How do "unfunded mandates affect your management activities?
3. How many projects do you have (if any) that are shelf ready? Can you be nimble/flexible to adapt to changes in the markets? (See D) Role of handbooks- and delays getting sales approved in real time.

TASK F – Adequacy of Forest Plans-Forest Manager, planning forester

1. Does forestry have sufficient depth in planning, forest inventory, and GIS (2019 F&PA additional needs)?
2. Do you feel you have adequate access to software for spatial harvest scheduling?
3. NIFRMA requires discussion of funding and staffing needs to carry out FMP. Can you discuss how this is presented in the Forest Plan? Are forest development funds adequate? If not, how is this reflected in the forest plan?

TASK G-Minimum Standards-Forest Manager

1. How would you design a report card for the BIA forestry programs?
2. What other standards beyond FMP, CFR25, NIFRMA, NEPA/ESA from project level work, etc. would you like to see? What changes would you like to see in NEPA, ESA and archeological reviews.
3. Are there standards to track whether tribal vision for forests is achieved?
4. Access to state-of-the-art methods (see F)

TASK H-Reforms and Increased Funding-Forest Manager

1. How would you define "state of the art" management? Are you doing it? If not, what are the constraints?
2. How would you describe your current management in terms of self-governance? Are you direct service, contract, compact, ITAMP or a combination?
3. What new legislation and rulemaking would benefit your tribe?
4. Are you underfunded and/or understaffed? What specific actions are needed if so?

5. Do you have quantified backlogs for needed silvicultural treatments (e.g., regen, PCT, etc.)?

TASK I-Climate Change

1. Role of climate change in forest planning (See F)
2. Access to resources and information needed
3. Within tribe forestry's role in climate adaptation planning
4. Carbon projects- interest, access and fit

TASK J/K – Landscape Scale Management-BIA staff and tribal forest manager, enterprise staff? Economic Development Officers, THPOs or cultural resource managers

1. Who are your neighbors and what is the relationship like?

2. Do you have any RTRL, 638, TFPA, GNA, or any form of shared stewardship projects on adjacent ownerships that you would like to discuss? What made it successful/unsuccessful?
3. What is the potential for your reservation to be an 'anchor forest' or is your tribe interested/capable of working off reservation to conduct cross boundary type projects?
4. What are the challenges associated with working at the landscape scale? Workforce/infrastructure, training, etc.
5. What type of management practices would your tribe implement to restore forests on trust and adjacent non-trust lands? and what are the outcomes associated with such practices?
6. Is there any interest in climate smart practices?

Additional Information About Alaska

The Alaska Regions are divided into 12 Management Units whose boundaries are analogous to the ANCSA (Alaska Native Claims Settlement Act) Regional Corporation boundaries. The local and regional ANCSA Corporations, non-profit tribal organizations, and federally recognized and non-recognized tribal governments are not structured equally both within and across the Management Units. The Forestry Tribal Priority Allocation (TPA) base funding was originally calculated by the forested allotment acres. Since then, some allotments have been sold out of trust and fewer numbers of new allotments have been added into trust (Veteran Allotments). Native allotments are associated with a tribe based on the original allotment applicant tribal membership. This tribal association determines the Forestry TPA amount for a tribe based on the forested allotment acres they are associated with in each region.

The federally recognized trust lands (primarily individual allotments) in Alaska are served by nonprofit service organizations and these nonprofits serve significantly large areas. These governance structures provide leadership and direction through delegates from the member tribes. Typically, a smaller group is selected to serve on an executive board. These boards provide leadership which is elected by the tribal delegates. These service organizations provide programs which include health services, housing, employment, training, and community planning. Depending on the number of forested acres, the service organizations may also include a forestry program.

The tribes themselves rarely own or directly manage their lands; the bulk of “Native” lands in the regions are owned by the corporations established through ANCSA. In some cases, a tribal/village corporation exists within the same geographic footprint as a tribe. In this case there is a tribal council and a village corporation board, which exist separately, but might overlap in membership. Member shareholders own these corporations, most of whom are tribal members, and the lands they manage are fee-simple private lands, not subject to trust oversight by the federal government. The most important land manager to the tribes is the local ANCSA village corporation.

The important Native land status in Alaska is the individually owned Native allotments, which are technically “restricted” lands, and managed as trust lands by the federal government. Native allotments are under the jurisdiction of the US Bureau of

Indian Affairs (BIA), Alaska Regional Office. Native allotments administered by the BIA Alaska Regional Office are “restricted” lands because the titles to these parcels are held by individual Alaska Natives with restrictions affecting the title defined by federal regulations. The restrictions are against alienation and taxation and the title is restricted and requires the Secretary’s review and approval usually delegated to the Regional Director. For all other purposes, Native allotments are managed by the U.S. Federal Government as “trust” Indian land and those lands assigned to individuals are referred to as individually owned Native allotments, and the individual owners are referred to as “allottees.”

Management of these allotments is performed through P.L. 93-638 self-governance compacts with the U.S. Department of the Interior. This compact funding has provided the base support for the Forestry Programs. Today 7 of the 12 Management Units within the Alaska Region have compacted the forestry trust responsibilities. Out of the 5 remaining Management Units, 4 have forested allotments with the trust responsibility held by the BIA in the forestry program. The Aleut Management Unit does not have forested allotment acres. Also, tribes can decide to have their Forestry TPA held by the BIA and receive direct trust services from the Alaska Regional Office instead of the local non-profit service provider. Northway Village is a tribe that receives direct forestry trust services from the Alaska Regional Office.

Services can be provided by the BIA as direct services and by the local non-profit service providers which has the possibility of changing from year to year. On an annual basis, a tribe could “pull” their Forestry TPA funding from a regional service provider and either retain the funds and perform the trust services themselves for the allotments associated with their tribe, or “return” it back to the BIA to receive direct trust services from the Regional Office. Northway Village as an example is one tribe that has their funding at the BIA and receives direct services from the Alaska Regional Office.

The BIA does not provide services to the Regional or Village for profit corporations and only to the Native allotments. The Forestry TPA funding amount for a service provider, or tribe, was determined on a formula that took a per forested allotment acre of the base amount allocated for the Alaska Region, and then multiplied by the forested allotment acres associated with their tribe. When tribes compact their Forestry TPA funds with either themselves or

a non-profit tribal organization, the funding amount was moved from the BIA Alaska Region to the service provider and resulted in a reduction of BIA Forestry staff at the region level. Due to varying forested acres, forestry programs received varied funding amounts that may not be adequate to fund a professional forester position, let alone a forestry program. Project funding has been available, and its cyclic nature does not replace recurring funding and project funding has a lag in timing and often the tribes do not know when the funds will be available from year to year.

The IFMAT IV assessment in applying the National Indian Forest Resource Management Act (NIFRMA) mandates typically addresses the federal government's trust responsibility. Except for the Metlakatla Reservation, the trust lands in Alaska are made up of allotments and these allotments are scattered throughout the state with little or no opportunities for active management. The native allotments title is held by the individual owner with restrictions on the title, and this is the basis of the existence of the tribal organizations where they have compacted the federal functions from the government. In forested areas there are forest management plans and some management activities on allotments, but timber sale activity is sporadic due to the lack of markets in these remote locations. Of the 12 Management Units, 11 have forested allotments, of which 10 have an active Forest Management Plan and one (Arctic Slope) has an active Interim Custodial Plan. The Aleut Management Unit does not have forested allotments and as a result is not covered under an Interim Custodial Plan.

The land owned by the regional corporations are managed by the corporations and may operate

under a separate set of goals and mandates generally for profit and are not always in line with the nonprofit tribal organizations and tribal communities of the regions. The villages and tribal communities have identified cultural and traditional foods and subsistence as a priority for their families and lifeways. Recently there is increasing emphasis on working with adjacent lands and to enter co-management and landscape scale projects. These projects could be an opening for entering into a Tribal Forest Protection Act (TFPA) and/or a Good Neighbor Authority (GNA) type collaborative. IFMAT IV observed one example where a tribal non-profit engaged in the planning and implementation of a large scale, landscape level fuel break which was created on Fish and Wildlife Service, State, tribal corporation, and private land using a variety of funding sources including Reserve Treaty Land Rights funding (RTRL) from BIA fuels and NRCS EQIP program.

Tribal and BIA Managers interviewed shared that they do not see the staffing issue improving in the future due to lack of funding and qualified applicants. The IFMAT team heard on several occasions that collaboration is common in Alaska because everyone is short staffed, and it is the only way to get things done. GIS services for management in Alaska are needed and there is no database presently to work from. The BIA Alaska region GIS positions are presently vacant, and the tribes are referred to the BIA Branch of Geospatial Support for their GIS needs. The Alaska Federation of Natives (AFN) meets annually and has up to 10,000 attendees who are primarily Alaska natives discussing these issues on both regional and village corporation lands.

Additional Information about Allotments

Some reservations have many individually owned allotment properties. The allotments complicate land management due to the scattered ownerships and small sizes and increase the difficulty of coordinating management on a landscape basis. The management costs on individual allotments are often greater than standard management costs as they must follow all BIA regulations. The BIA has trust responsibilities to individual allottees and the management of allotments in the lower 48 states and the state of Alaska. There are many obstacles to forest management particularly in Alaska due to the difficult topography, seasonal operation conditions, and poor or nonexistent transportation systems and markets for forest products. The situation with allotments is the outcome of a failed federal policy. Allotment lands within reservation boundaries should be managed in a more integrated process with other tribal lands, however at this time that does not occur. Tribal and allottee objectives sometimes differ resulting in conflict over the resources and may at times create issues between the allottees and the tribe.

For carbon sequestration projects, currently the BIA does not recognize carbon credits as a trust asset. This has complicated the opportunities for the allottees desiring to enter carbon projects. The BIA has been examining how carbon projects on allotments may be managed for more than 10 years. The number of forested acres (timberland and woodland) in allotments approaches one million acres.

Allotments are individual Indian owned trust lands and need to be managed in accordance with NIFRMA and 25 CFR § 163 requirements and allottees' interests. Timber on allotment lands is often sold in conjunction with tribal timber sales and may not receive priority for markets. Also, the timing of the timber revenue income may not align with financial needs of the allottee. The process of getting the power of attorney (POA) for each allottee is very cumbersome and often delays management for many years. Generally, the POA needs to have majority interest approval of all the owners. Some allottees would like to sell their lands to the tribe but there are no funds for tribes to acquire these lands on a consistent basis. Identifying the majority ownership is difficult as many landowners' locations are unknown, probate process and interpretation of competency must clear and be addressed before activities can be implemented. In addition to home locations, some allottees want to hold their lands for long-term timber management and recreational

purposes. Road maintenance and road access are sometimes difficult on the allotments that are only accessed during harvest which may occur every 40 to 50 years.

Management responsibility for allotments may include the BIA directly, tribes under P.L. 93-638 authorities, or, in Alaska, by regional corporations under self-governance compacts. Some allottees feel that they do not have a voice in the management of their properties and would like to have a delegated organization that has the authority to assist in the management of the allotments. Transparency in the appraisal process is also needed. One allottee association member expressed that they would like to have access to the allottees' contact information which must be authorized by the BIA and the tribe so they could assist the tribe and the BIA in securing the required POAs. Some lands that are poorly stocked or of low productivity are often set aside as there is little incentive or funding to treat these acres. Non-timber forest products are typically not managed on allotment lands because there is not enough funding to support noncommercial forest management activities on these lands.

The issue of fractionated interest, where a 40-acre or an 80-acre allotment could have 200 or more fractionated owner interest, increases each decade with the transfer of ownership to the next generation. When allottees receive Individuals Indian Money (IIM) checks from the Bureau of Trust Funds Administration for the sale of their timber, there is no description or background information provided with the payment. The allottee is not provided with an explanation of what the check is for, explanation of accounting, and whether there will be more payments in the future. Depending on the level of fractionation, the size of the timber sale and quality of the timber, an allottee's check could range from thousands of dollars to only a few cents. Discussions indicated that government checks cannot include any other documents or information in the check envelope. For IIM account holders who have recent transactions the IIM statement may reference a timber sale name but that was all the information that may be provided. Forest Management Deductions (FMDs) collected on allottees' timber harvest should be spent on allotment lands in equitable proportion to the FMDs that are collected from tribal land. Tribes with many allottee acres need to have an appropriate number of Allottee Services Foresters to meet the needs of these individual landowners.

BIA Regional Office Visit Questions

1. **What do you feel are the most pressing issues in your region?**
2. **How well are you supported by the BIA central office and by the DOI?**

Self-governance

1. **Is compacting and contracting reducing delivery of BIA services to direct service tribes? If so, why?**
2. **What opportunities and challenges do see for tribes implementing ITARA?**
3. **What challenges do you see for the regional office regarding ITARA? Will ITARA make your life easier or harder?**

Landscape Management

1. What are the opportunities for the Regional Office to promote shared stewardship and landscape management in your region? Are there intertribal, interagency and tribal/private efforts to implement landscape management? Can you provide examples in your region?
2. **What are the leading forest health issues in your region?** What leadership does the Region provide to the tribes? How are forest health funds distributed?
3. Do tribes in your region have sufficient access to research on forest health, new technological developments, and other issues (tech transfer)? What are your research needs?

What are the BIA investments in advancing new technologies (e.g. Forest inventory, tree census, Lidar and satellite imagery accuracy improvement and cost reduction)

- a. § Fuels profiles
- b. § Growth modeling
- c. § Risk rating
- d. § Cost Avoidance calculations
- e. § Interdisciplinary data use

Forest planning

3. What is the status of forest inventories in your region? Does the RO provide inventory expertise to tribes? What kind and how much?
4. **What is the status of forest management plans in your region?** Do all tribes have valid

FMPs? How many have IRMPs? How are IRMPs being funded?

5. Are you receiving the level of assistance you need from BoFRP? If you need more, what are your specific needs?
6. What is your office doing to support climate change adaptation planning in your region? How severe will the impacts be in your region compared to others? Are regeneration plans coordinated with climate adaptation plans at the tribal and regional levels?
7. How will ITARA affect your forest management planning and approval of tribal management plans?
8. **Are you familiar with the Forest Service Watershed Framework for evaluating watershed treatment priorities?** If it is useful, who would provide regional leadership?
9. **How is the AAC being defined in your region?** Are there changes that would increase its usefulness? Do you regard non-declining even flow as a necessary component of AAC calculation? Within your Region, what are the most significant impediments to harvesting the full Allowable Annual Cut (AAC)?
10. **Does your Region provide harvest scheduling support?** If so, how? Would contracting for field work or compliance work be a more frequently if Forestry and Fire was allowed to have it's own Contracting Officer?
11. Does your region provide ecosystem services (i.e. carbon, water) planning support?

Staffing (we need organization chart)

12. Do you have the regional staff you need to carry out your responsibilities?
13. Who provides wildlife and watershed regional expertise to the tribes?
14. **How many vacancies do you have?** In what positions? How long does it take to fill a vacancy? Are you satisfied, in general, with quality of applicants for open positions?
15. Are there any services or positions that need to be provided to the tribes that currently aren't available (e.g., wildlife biologists, hydrologists, economists, forest products marketing specialists)?

16. **Is detailing to other units impacting your ability to get the job done?**
17. Have office consolidations helped or hindered delivery of services? Are further organizational changes needed?
18. Do tribal partnerships with, and funding from other federal agencies (e.g., NRCS) assist in your ability to fulfill the trust responsibility? Does the Regional Office partner?

Infrastructure

1. Is access to adequate facilities challenging your ability to deliver services and be effective?
2. **Are there infrastructure challenges that you experience (for example roads, logging, mills, personnel?)**

Handbooks, Outreach and Training

1. Are the BIA handbooks useful? Is regional and national office handbook direction consistent?
2. **What types of technical assistance do you provide to tribes? What types of training? Do you have HR needs and issues?**

Enterprises

1. **Do you believe trust responsibility extends to tribal enterprises?**
2. What types of technical services does your region provide to tribal enterprises? Does the technical support include products marketing support? Is bench marking of logging and milling provided?
3. **Do you feel that the tribes are receiving fair market value for their timber? If not, what could be done to improve this situation?**

Review of environmental and policy conformance

1. Does your Region do auditing of forest plan implementation?
2. Does your region do auditing of timber sale administration, accountability?
3. Are tribal enterprises audited?
4. Is auditing part of the federal government's trust responsibility?
5. **Should the region being doing audits, or do you feel that a 3rd party audit would be a better approach?**
6. **Do you think a general definition of "state of the art forestry" would be a useful thing to have? If so, how would you define it?**

What are you doing in the Region to help ensure that Tribes are providing the data needed to highlight the effectiveness and efficiency of Indian forestry, and support budget requests? Forestry data is the primary tool used when supporting budget requests. Without full reporting from the 638 and Compact Tribes, may not capture an important portion of the data.

Based on the level of success relevant to the methods used to engage Tribes, would improvements lie in relationship building; more frequent Central Office / Tribal interaction; legislative fixes?

Closing:

1. **Do you have any suggestions about how the Regional Office could better support the fulfillment of the Trust Responsibility?**

**Assessment of Indian Forests and
Forest Management in the United States**

The Fourth Indian Forest Management Assessment Team
for the Intertribal Timber Council

2023

