



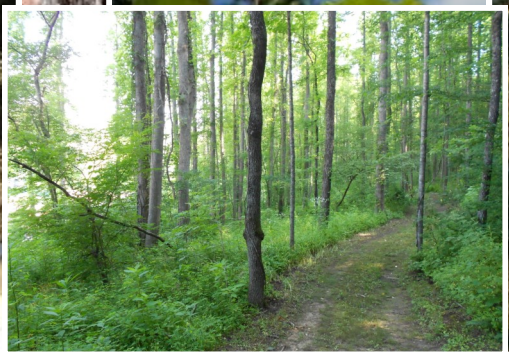

Assessment of Indian Forests and Forest Management in the United States

Executive summary

2013

The third Indian Forest Management Assessment Team for the Intertribal Timber Council

Updated version, July 8 2013.

An assessment of Indian forests and forest management in the United States

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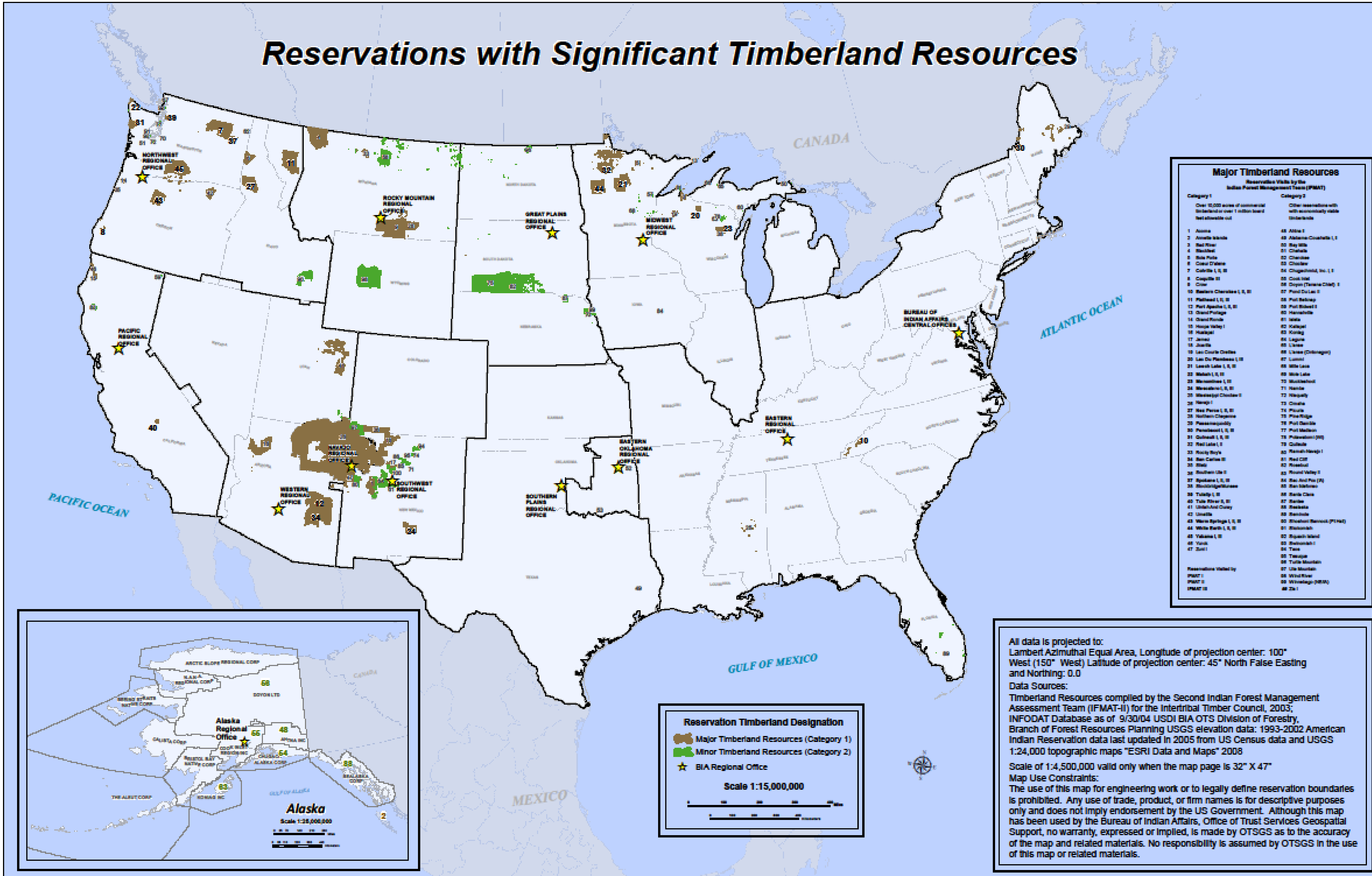
By the Indian Forest Management Assessment Team
For the Intertribal Timber Council

This executive summary, as well as the full report, are available at:
http://www.itcnet.org/issues_projects/issues_2/forest_management/assessment.html




Reservations with Significant Timberland Resources
CANADA
ATLANTIC OCEAN
PACIFIC OCEAN
GULF OF MEXICO
MEXICO
Major Timberland Resources
Alaska
Reservation Timberland Designation
Major Timberland Resources (Category 1)
Minor Timberland Resources (Category 2)
BIA Regional Office
Scale 1:15,000,000
All data is projected to:
Lambert Azimuthal Equal Area, Longitude of projection center: 100° West (150° West) Latitude of projection center: 45° North False Easting and Northing: 0.0
Data Sources:
Timberland Resources compiled by the Second Indian Forest Management Assessment Team (IFMAT-II) for the Intertribal Timber Council, 2003;
INFODAT Database as of 9/30/04 USDI BIA OTS Division of Forestry,
Branch of Forest Resources Planning USGS elevation data: 1993-2002 American Indian Reservation data last updated in 2005 from US Census data and USGS 1:24,000 topographic maps "ESRI Data and Maps" 2008
Scale of 1:4,500,000 valid only when the map page is 32" X 47"
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IFMAT-III

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Colville
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Eastern Cherokee
Flathead
Fort Apache
Lac du Flambeau
Leech Lake
Makah
Menominee
Mescalero Apache
Nez Perce
Penobscot
Quinault
San Carlos Apache
Spokane
Tulalip
Tule River
Warm Springs
White Earth
Yakama

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IFMAT-III in brief

This third Indian Forest Management Assessment gives us the perspective of three sets of observations over a 20 year period.

During the development of the National Indian Forest Resources Management Act (NIFRMA) in 1991, Congress declared that the United States has a trust responsibility toward Indian forest lands, and that federal investment in Indian forest management is significantly below the level of investment in Forest Service, Bureau of Land Management, or private forest land management (25 USC Sec. 3111). We find that the federal government continues to inadequately fulfill its trust obligations to Indian forestry. This is evidenced by the fact that funding and staffing levels are lower now than at the time of IFMAT-I and well below those of comparable public and private programs.

In spite of this, tribes are assuming greater leadership through self-determination and self-governance. The clear dedication and vision we observed in forestry staff and tribal members facilitates innovative and integrated forestry practices. As noted in IFMAT-I and II, we believe Indian forestry has the potential to provide models for sustainable forestry and resource management, and that the influence and techniques of Indian forestry can find application on the federal forest estate.

Challenges such as losses of infrastructure, declines in forest health, and changing climate trends require urgent action. Tribal knowledge and stewardship capabilities are uniquely positioned to help, as evidenced by holistic practices, long-term commitment, and initiatives such as the anchor forest concept. However, progress will not occur without resolve and increased investment on the part of political leadership.

Fire *and responses to it are reshaping many forests, budgets, and outlooks for Indian forests from the Lake States through the far West.*

Strategic ***investment*** *is a major necessity for achieving tribal forest visions and plans, and for meeting forest-related U.S. government trust responsibility for ensuring a sustainable future for Indian forests.*

Transformation *of tribes to self-governance, and toward the emergence of Indian forestry as a model for sustainable landscape management, presents a pathway leading to a sustainable future for Indian forests.*

Makah. Photo by Mark Rasmussen.

Introduction to Indian forests and IFMAT–III

Tribal forests sustain environmental, cultural, and economic benefits for Indian people while also generating jobs and revenues for non-Indian communities and providing important ecosystem values such as clean water and air, species habitats, and carbon storage that benefit the broader society.

Tribal forest lands exceed 18 million acres that are held in trust by the United States. The National Indian Forest Resources Management Act (NIFRMA) directed the Secretary of Interior, in consultation with the affected Indian tribes, to obtain periodic independent assessments of the status of Indian forest resources and their management. The first two assessments were completed in 1993 and 2003. This report is the third assessment, and provides an opportunity to look back across two decades of change, advancements, and challenges facing Indian forests.

As with preceding reports, the Secretary of the Interior contracted with the Intertribal Timber Council (ITC), a national organization of forest-managing Indian tribes, to oversee the development of this report.

ITC selected a group of ten independent forestry experts from various disciplines to make up the third Indian Forest Management Assessment Team (IFMAT-III). Some members participated in one or both of the previous IFMAT assessments, facilitating analysis of long-term trends.

What we saw on Indian forest lands

IFMAT-III visited 20 Indian reservations and held conversations with Bureau of Indian Affairs (BIA) and tribal foresters and resource managers, forestry students, tribal leaders, and tribal elders. The reservations, forests, and people we visited were highly diverse, each with their own set of challenges.

NIFRMA states that IFMAT assessments shall be national in scope and centered on eight topics of inquiry:

- **A.** Management practices and funding levels for Indian forest land compared with federal and private forest lands.
- **B.** The health and productivity of Indian forest lands.
- **C.** Staffing patterns of BIA and tribal forestry organizations.
- **D.** Timber sale administration procedures, including accountability for proceeds.
- **E.** The potential for reducing BIA rules and regulations consistent with federal trust responsibility.
- **F.** The adequacy of Indian forest land management plans, including their ability to meet tribal needs and priorities.
- **G.** The feasibility of establishing minimum standards for measuring the adequacy of BIA forestry programs in fulfilling trust responsibility.
- **H.** Recommendations of reforms and increased funding levels.

At the request of ITC, the assessment was expanded to include the following:

1. Workforce education, recruitment, and retention, particularly regarding Indian professionals in natural resource management.
2. Economic, social, and ecological benefits provided by Indian forests to tribal and regional communities.
3. Changes in forest management, harvesting, and transportation infrastructure near reservations and the potential for Indian forests to become "anchors" of forest infrastructure.

We recognize broad and complex changes in land management policies and practices, forestry concerns, and social and economic forces since the previous IFMAT reports. Indian forests are increasingly threatened from external forces, such as wildfire, insects, disease, development, climate change, declining access to markets, and urbanization.

We saw many positive examples of people caring deeply about the land and living intimately with their management decisions. Indian forests represent a unique window into the interaction between forests and people. Tribal leaders have recently begun extending their influence beyond reservation boundaries to build partnerships for a sustainable future. Tribes with permanent land bases and a demonstrated history of long-term stewardship can play pivotal roles in efforts to achieve cross-boundary, landscape-level resource management.

We recognize that no explicit, uniform performance standards for Indian forest management have been established to provide a firm basis for evaluating the degree to which the federal is fulfilling its trust responsibility. However, we remain concerned that funding and staffing levels continue to be insufficient to support state-of-art management, that sufficient separation of oversight from operational responsibilities has not been put into effect, and that administrative processes for Indian forestry are becoming extremely costly to complete.

Key messages

To provide a more integrated understanding of our findings, we introduce the concept of FIT (fire, investment, and transformation). These themes embody the progress that Indian forestry has made over the period of the IFMAT assessments, as well as the opportunities and problems the future holds.

Fire and other threats jeopardize the economic and ecological sustainability of Indian forests. Strategic **investment** is needed to achieve tribal forest visions and plans, and to fulfill the U.S. government trust responsibility for Indian forests. **Transformation** of tribes to self-governance, and toward the emergence of Indian forestry as a model for sustainable landscape management, presents a pathway leading to a sustainable future.

Fire

Tribal forests and communities continue to face serious threats from wildfire, insects, disease, and climate. These threats are coupled with lingering concerns regarding the adequacy of funding and staffing levels, standards, and separation of operational from oversight responsibility.

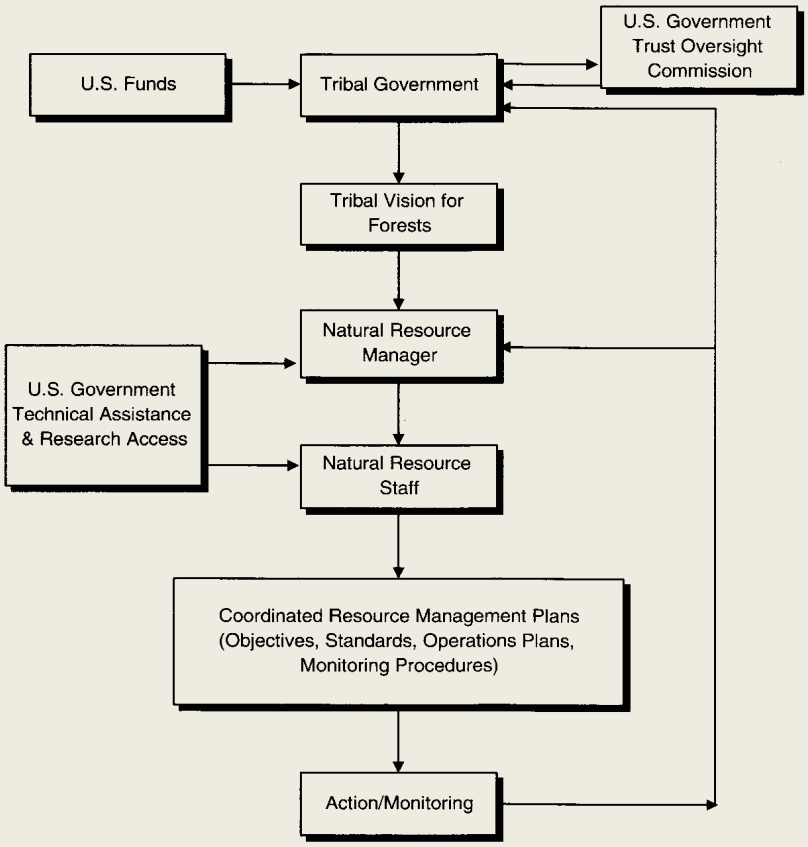
Twenty-three years after the first IFMAT assessment, notwithstanding the incredible record of the tribes in improving management of their forests, Indian forests remain underfunded, the BIA both delivers services and judges their adequacy, tribes remain constrained by rules and regulations that hinder rather than help them achieve their vision, and tribal forests are increasingly threatened by action of inaction on the borders of their lands. We find that the federal government continues to inadequately fulfill its trust obligations to Indian forestry. This is evidenced by the fact that funding and staffing levels are lower now than at the time of IFMAT-I and well below those of comparable public and private programs.

Navajo crews. Photo by Dale Glenmore.

After 20 years, still both pitcher and umpire

As noted in IFMAT-I and II, a conflict of interest is created by the dual obligations of the Bureau of Indian Affairs to both deliver Indian services *and* to assess whether those services are adequate and well-executed. Prior IFMAT reports characterized this situation as the BIA attempting to perform as both pitcher and umpire.

This diagram was proposed by IFMAT-I as a framework to restructure trust oversight. An independent commission would periodically review performance of services against tribal plans, accepted by the Secretary of the Interior, and would have the power to require corrections. The commission would be national-level, but with local reach. An example of such a model is the Nuclear Regulatory Commission. The trust oversight commission could contract with regional entities to be primary providers of oversight duties, subject to commission review. Any trust oversight body must have the technical capacity and skill to assess forest management issues.



A framework for third-party trust oversight as recommended by IFMAT.

Fulfillment of the federal trust duty depends upon standards against which performance can be evaluated. Standards must have adequate oversight for their execution, and must be enforced. An effective mechanism for enforcing standards does not currently exist, and the third party oversight as recommended by past IFMAT reports has never been implemented. A state-of-the-art Indian forestry program must: 1) be assured of predictable, consistent, and adequate funding for forestry programs on all reservations, whether direct service, contracting, or self-governance compacting; 2) have access to adequate technical and research support; 3) be guided by each tribe's vision for its forests; and 4) strive to sustain tribal resources and objectives. The condition of the forest itself, over time, is the best measure of whether state-of-the-art management is being achieved. A central part of the trust responsibility is to see that each tribe has the means to develop its vision and management plans with adequate technical resources and personnel.

There are lingering concerns regarding separation of operational from oversight responsibilities – "pitcher-umpire" issue – identified in IFMAT-I and II. The Indian trust beneficiaries and the credibility of the government will be better served by addressing this conflict of interest. It remains to be seen if current efforts, such as the Secretarial Commission on Trust Administration and Reform, and BIA streamlining will effectively address conflicts of interests and improve administration of the trust.

Investment

Indian forests require a minimum annual appropriation of $254 million to bring per acre funding on a par with appropriate comparators (US Forest Service for stewardship and wildfire for commercial timberlands; BLM for stewardship and wildfire on non-commercial forestlands; state and industrial forests for timber production). Current annual funding of $154 million is $100 million below the minimum base level of funding needed. The stewardship and wildfire funding deficit observed in IFMAT-I ($121 million) and IFMAT-II ($120 million) continues.

What is needed to bring Indian forestry up to par with other forest ownerships?

- Approximately **800 staff positions**
- Approximately **$100 million annually** in additional funding for forestry and wildfire management
- Another **$12.7 million annually** for staff recruitment, retention, and development

This funding need does not include support for substantive tribal involvement in the Department of the Interior's (DOI) Landscape Conservation Cooperatives or other collaborative initiatives. Tribes need equitable access to funds and services related to climate change planning, adaptation, and response.

Moreover, staffing is inadequate to provide the quality and quantity of services needed to care for Indian forests. Expertise and leadership are being lost through retirement and other employment. The involvement of Native American professionals has increased, but enrollment and recruitment efforts for natural resource professionals are inadequate to replace losses. Compensation received by tribal staff is significantly lower than that available for BIA and other agencies, which hurts recruitment and retention for tribal programs. Due to lack of stable, adequate funding, forest management functions are relying more and more on soft money, increasing administrative burdens and posing challenges for maintaining program continuity.

The 2011 Funding and Position Analysis indicates that a minimum of an additional 792 professional and technical staff are needed to support the Indian forestry program, an increase of 65 percent above current levels. An additional $12.7 million per year is needed for recruitment, retention, and staff development.

Transformation

A profound transformation is underway in Indian forest management as BIA-dominated policies and programs are being replaced by tribal visions and development of expertise under self-determination contracting and self-governance compacts.

Tribal involvement in forest management is leading to greater satisfaction in the quality of forest management in tribal communities. Indian forests are being increasingly managed by tribal programs in accordance with tribal visions; management priorities are shifting towards protection and commodity production receiving less emphasis.

The future portends a greater role for tribes in influencing landscape-scale management practices that will benefit tribal and non-tribal communities. This influence is being increasingly felt through initiatives such as anchor forests and projects undertaken pursuant to the Tribal Forest Protection Act authority, as well as tribal involvement in activities relating to wildfire, forest planning, and climate change.

Indian people's vision

Management of Indian forests must be directed toward achieving a dynamic set of tribal objectives. Thus, a tribal vision for their forests is a critical component of effective management planning, implementation, and self-governance. Defining an integrated vision will require effective education and communication between tribal leaders, resource managers, and tribal members.

"If we are not maintaining our forests, then that is a reflection of how we are living our lives."

—IFMAT-III focus group participant

To understand tribal views of Indian forests and forestry, IFMAT-III conducted surveys and focus group discussions with Category I and II timber tribes, following techniques used by previous IFMATs.

What we heard

Tribal vision themes remain consistent over the last 20 years. Tribal members typically express a holistic view of the forest, and have consistently articulated the primary importance of caring for the forest and managing it in an integrated fashion.

Convergence of goals and values between tribal members and resource managers continues. "Protection," as defined by our survey participants, means active involvement of people with the forest, and might include collection of cultural resources, underburning, planting, and some commercial harvest. This convergence of values between tribal members and resource managers is likely due to the trend toward self-governance, the increase in the number of Native American forest managers, and the increased influence of tribal natural resource departments.

Perception of the quality of management has noticeably improved over time. The general trend is positive toward resource management over the three IFMAT studies.

Quinault. *Photo by Mark Rasmussen.*

Recommendation

- We suggest the BIA provide funding through the ITC or other organizations, for tribes to conduct meaningful public input, scoping, and visioning sessions as well as field tours, for creating a dialogue between all parties that will further strengthen the vision and direction of tribal forestry.

The Indian forest resource and the benefits it provides

This section addresses the ITC "forest benefits" question.

- **In the U.S., there are over 18 million acres of Indian forests, including over 1 million acres set aside from harvest as reserves, held in trust by the federal government. There are 305 forested Indian reservations located in 24 states (see map, pp. 25-26).** The Secretary of the DOI is the principal designated federal trustee. Six million acres are considered commercial timberlands, nearly four million acres are commercial woodlands, and more than eight million acres are a mixture of noncommercial timberlands and woodlands.

- **Diverse forest types provide irreplaceable economic and cultural benefits.** Forests encompass about a third of the total Indian trust lands, and sustain tribal economies, cultures, religions, and spiritual practices. Forests are closely linked to community and cultural vitality in Indian Country. Forests store and filter the water and purify the air. They sustain habitats for the fish and wildlife that provide sustenance for the people. They produce foods, medicines, fuel, and materials for shelter, transportation, and artistic expression. Forests provide revenues for many tribal governments, sometimes the principal source of revenue, and sorely-needed employment for Indian people and rural communities.

- **Woodlands encompass the largest area of Indian forest ecosystems.** In total, 202 tribes have woodlands. For 109 of these tribes, woodlands are their only forests. Water, firewood, and traditional plants are important resources derived from woodlands. But woodlands receive too few resources and too little attention. Grazing practices (including the effects of feral horses) are having a negative impact on many Indian woodlands. In addition, juniper encroachment is altering surface water availability in some areas, and tribal elders are attributing changes in woodland vegetation and wildlife abundance to climate change.

- **Although tribal timber activities have slowed considerably over the decades, Indian forests remain a source of significant employment.** Timber harvests extend high job and revenue leverage. Economic multipliers indicate that for 2011, Indian timber harvests generated 19,000 full- and part-time jobs. This represents a loss of more than 10,000 jobs, which is 38 percent below 2001 levels.

- **Fire suppression and fuel management activities are a source of jobs and maintain and enhance forest health.** Fire funds allocated to

Tulalip canoe. Mark Rasmussen.

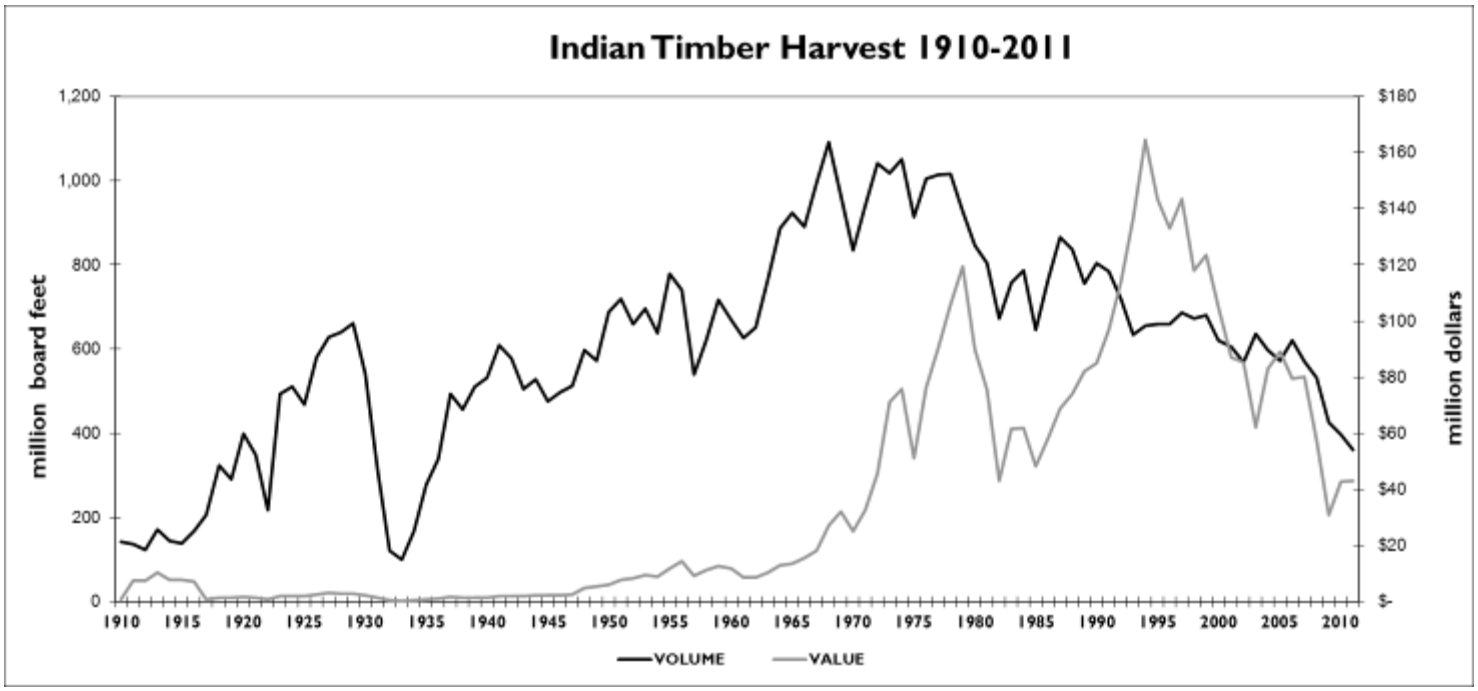
San Carlos lumber. Mark Rasmussen.

Eastern Cherokee clearing. Larry Mason.

BIA serve the protection of people, wildlife, and property by providing resources for fire management programs, reducing the risk of fires, and protecting resources once fires start. On average, BIA obligates around $75 million per year for fire suppression alone. The BIA Branch of Wildland Fire Management has approximately 7,000 employees, many of whom are Native Americans. BIA received more than $160 million for wildland fire management in 2011, which included fire preparedness, hazardous fuels reductions, suppression, and burned area emergency response funds.

Investments in thinning and hazardous fuels reductions keep forests healthy and resilient, helping to avoid stand-replacing crown fires and accompanying environmental and economic consequences, including pollution to the atmosphere. In 2011, Indian tribes and the BIA performed fuel hazard reduction treatments on 232,368 acres. This number suggests that 2011 BIA hazard reduction treatments resulted in close to 700 reservation jobs and $28.4 million in economic outputs, while helping to avoid the economic and environmental costs of severe wildfires.

- **Timber harvest levels and timber revenues have steadily dropped in the past three decades causing negative economic consequences on forested reservations.** The estimated total standing inventory of commercial timber in Indian Country is 43 billion board feet (BBF). Most of the income from harvest of forest products comes from these commercial timberlands.



Climate change and Indian forestry

Tribal forest programs struggle to deal with climate-driven biophysical, social, economic, and cultural impacts and their implications for state-of-the-art forestry on Indian lands. Climate change imposes disproportionate social, economic, and cultural impacts on tribes and other populations with limited resources, mobility, and access to information. These inequities are amplified as the rate of change accelerates. Adjusting forest plans and practices to deal with climate impacts is imposing additional costs, logistical constraints, and challenges on tribal forests and forestry.

Menominee. Photo by Larry Mason.

Climate change has already started to influence costs (through fire management), practices (e.g., reforestation and forest health), operations (winter logging), forest values (wildlife populations and culturally important plants), and even policy (federal mandates for adaptation planning).

Some of the tribes we visited could serve as laboratories and demonstrations for adaptation through active forest management. Their use of relatively scant financial and technical resources has been efficient, leveraged, and creative. Their performance in adapting to sometimes harsh physical and social environments not only deserves more investment but illustrates tenets of adaptive capacity that could be valuable outside the tribal environment. Coping with social, economic, and cultural vulnerabilities can provide lessons for others who heretofore have been insulated from these changes by plentiful resources, infrastructure, and protective institutions.

San Carlos Apache. Photo by Larry Mason.

What we learned

- **Tribes and the BIA have not been successful in accessing new and redirected federal funding for climate change response during the period 2009-2012**. In 2012, DOI received $175 million in climate change related funds that make up their Landscape Conservation Cooperative efforts. In contrast, the BIA received $0.2 million despite the fact that they have a unique federal trust obligation for tribal lands that also encompass 10 percent of DOI's land base.

- **Managers of tribal forests are observing impacts of a changing climate.** Some of these impacts include increased severity of wildfires and insect and disease activity, increased frequency and intensity of precipitation events, more severe droughts, changes in the timing of plant and animal activity, and the more rapid invasion of some invasive species. These observed impacts vary widely by region and tribe and are informed in many cases by comparison with observations and stories provided through traditional tribal level knowledge and the memories of tribal elders.

- **Tribal forestry managers and tribal leadership recognize the inevitability and some of the implications of the rapidly changing climate for their prosperity and culture.**

- **Some tribes are attempting to build climate adaptation into their forestry programs and practices.** Some are developing adaptation plans, but few tribes have incorporated climate change into their forest management plans.

- **Intertribal organizations perform an important function and some have direct benefits, including tools and resources for tribal forest managers.** There are numerous coalitions, networks, and other organizations that have emerged through intertribal collaboration, or through university, tribal college, and agency sponsorship devoted to assisting tribes and their natural resource managers in responding to climate change.

Recommendation

- Require the allocation of federal agency funds for climate change response and develop processes and criteria to assure a more equitable distribution of funding to tribes.

Anchor forests

The anchor forest concept proposes collaboration among forest landowners to collectively support the infrastructure necessary for sustainable forest stewardship. Many contemporary forest issues are too large to be successfully addressed at a local level or single ownership.

Warm Springs. Photo by Vincent Corrao.

We heard from tribal leaders across the nation that, given current economic and environmental declines, the future of tribal forests may be in question. The recent recession had a significant impact on lumber and log prices. Harvests from Indian forests as well as private forests fell as a result.

In connection with the decline in timber harvests, mills closed and jobs were lost across the nation. U.S. Forest Service records show that since 2005, 1,009 sawmills, 15 pulp mills, and 148 other mills closed— a reduction of about 19 percent of the U.S. capacity. For tribes that operate milling facilities, the consequences of these trends have taken a toll. Since 2001, ten Indian sawmills have closed, leaving just four that currently struggle to remain operating. Once harvesting and processing infrastructure disappear, they are very difficult to replace.

Depressed markets for forest products ultimately result in a diminished ability to care for tribal forests. Without a commercial forest enterprise available, forest management aimed at making forests more resilient becomes prohibitively expensive. Forest health concerns, often most acute on neighboring federal lands, threaten resources such as water, fish, wildlife, cultural foods, materials, and medicines. A sense of urgency is growing within many forest-dependent communities, especially in the West.

Indian people share a common responsibility to manage the environment on behalf of present and future generations. Faced with the growing threats of declining forest systems and limited economic and employment opportunities, concerned tribal leaders are now turning their attention and stewardship abilities to environmental challenges beyond reservation borders. Tribes have contracted with the Forest Service to conduct hazardous fuel reduction treatments (activities that remove flammable "fuels" like small trees) on federal lands through stewardship contracting and the Tribal Forest Protection Act (TFPA).

However, the scope of these activities has been tentative and inadequate. TFPA partnerships should be aggressively expanded, as 80 million acres of national forest lands are in need of treatment and pose a threat to tribal resources. "Goods for Services" contracts with tribal enterprises can help offset the costs of federal forest health treatments while providing raw material for tribal enterprises.

Leaders of ITC have introduced the concept of anchor forests as a means to maintain healthy working forests on the landscape, based on the recognition that harvests must reliably come from multiple owners, large and small, public and private. In areas with significant Indian forests, tribes can become "anchors" to multi-owner stewardship programs. Anchor forests are intended to provide a foundation to foster the development of common visions through collaboration.

The Anchor Forest Pilot

Anchor forests represent a new and welcome expansion of collaboration between tribes and others. In central Washington State, the first anchor forest pilot project has been convened. The partners include the USDA Forest Service, The Nature Conservancy, the Washington Department of Natural Resources, the Washington Department of Fish and Wildlife, and the Yakama Indian Nation. The primary focus is to create interactive, consensus-based solutions for restoring forest health and avoiding forestlands conversion within the east Cascades. This represents a hopeful beginning; however, more projects need be undertaken as stakes are high and time is short in the forest areas where Indian reservations abut densely-stocked national forests.

Yakama. Photo by Larry Mason.

Recommendation

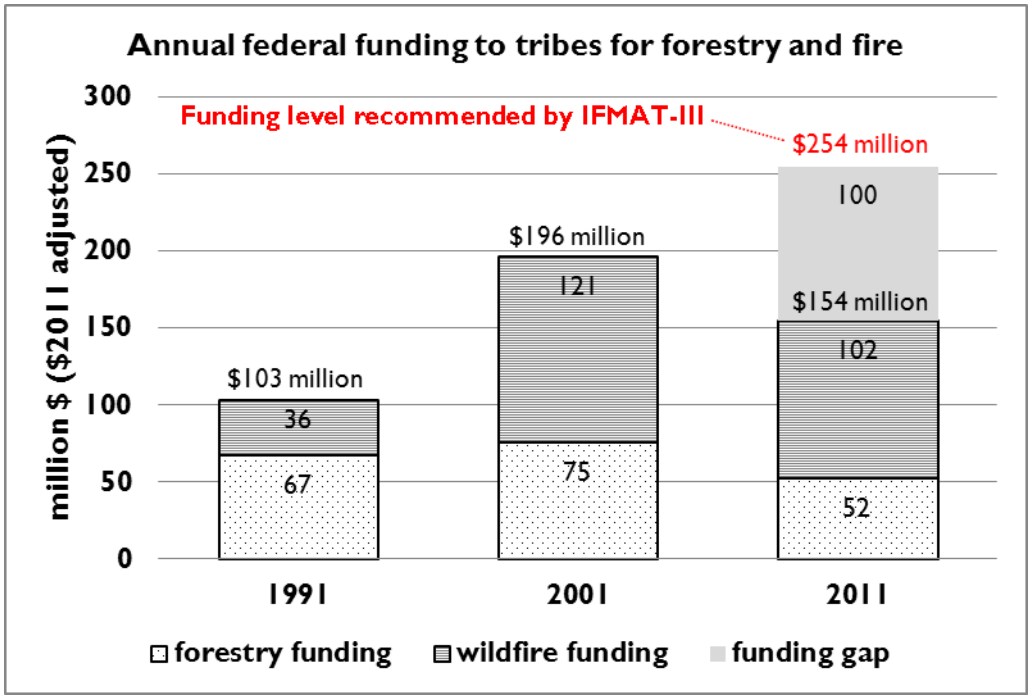
- The anchor forest concept should be supported and expanded. Innovative tribal forest resource management techniques should be considered for appropriate portions of the federal forest estate.
- Contracting authorities and collaborative programs, such as the TFPA, Landscape Conservation Cooperatives, the Collaborative Forest Landscape Restoration Program, and stewardship contracting should be linked to anchor forests and expanded.

The NIFRMA Tasks: In this section, we present key findings from the eight NIFRMA-mandated task reports, as well as the ITC education question.

Task A

Management practices and funding levels for Indian forest land compared with federal and private forest lands.

A1. Current (2011) federal funding for Indian forestry and wildfire management of $154 million is about $100 million (39 percent) below the $254 million we estimate as the minimum base level of funding for forest stewardship and timber production to achieve Indian goals. Recurring program funding has been declining in real terms. Further exacerbating the underfunding problem, tribes are not getting additional funds as their land base (consolidations and re-acquisitions) and obligations (environmental regulations and climate change mitigation and adaptation) increase.



Source: 2011 FPA, except 2001, 2011 fire data from NIFC.

Achieving "state-of-the-art" forestry is possible only with adequate funding. NIFRMA requires our assessment to make recommendations for bringing Indian forest land management programs to a "state-of-the-art" condition. But what constitutes state-of-the-art forests? Ultimately, state-of-the-art forestry for Indian forests is the combination of people and practices that most effectively achieves, or moves most rapidly toward, the tribal vision for their forest. Objective criteria for measuring efficiency and effectiveness should be stated in the relevant tribal plans.

In a general sense, state-of-the-art effectiveness employs a functional vision, the best available technology and current science, and enough skilled people. When possible, each tribe should benchmark their performance with other forest management efforts on similar lands with similar goals, both in terms of inputs (inventory, silviculture, biology and engineering methods and tools) and outputs (timber harvest levels, water quality, biodiversity, carbon sequestration, recreation, and spiritual satisfaction).

A2. Indian forests are receiving much less forest management funding per acre than adjacent forest land owners, particularly the level of funding that states are investing in their trust lands in the West.

2011 forest management funding	$/acre
BIA	2.82
States (East)	5.65
States (West)	20.46
National forests	8.57

A3. The uncertainty and instability of fire funding is a major concern for many tribes that struggle to address deteriorating forest health. Indian forest budget allocations for hazardous fuel management are significantly lower than Forest Service allocations.

A4. An increasing fraction of funding for core forestry activities (roads, silviculture, protection) comes from soft-money project grants. Declining program funding is increasingly replaced in part by grant and contract money sources, especially National Resource Conservation Service Environmental Quality Incentive Program (EQIP) funds.

2011 hazardous fuels funding	$/acre
BIA	0.71
National forests	1.45

A5. Although challenged by many constraints, tribal forestry programs are remarkably successful, due primarily to positive and effective leadership from both individuals and organizations. If these positive attributes are to be retained, tribes and the BIA will need to find stable funding mechanisms that provide a base for continuous improvement of Indian forest management.

Recommendations

- Increase annual base level funding by $100 million to $254 million—the minimum amount we estimate necessary for a level of forest stewardship and timber production that would be consistent with federal trust obligations.
- The benefits of self-governance to Indian forests should be protected by provision of recurring funding and increased technical support where needed for tribal forestry and resource management. A system of stewardship (base) and incremental funding should be implemented.

Task B | *The health and productivity of Indian forest lands.*

B1. On the whole, the health and productivity of Indian forests are being maintained, but forest density-related threats from fire, insects, disease, and climate change have and increasingly will compromise the long-term sustainability of Indian forests unless treatment measures are accelerated and appropriate annual harvest targets can be met. Overly dense stands—legacies of past management practices—exist on large acreages of Indian forests. The hazard posed by these dense stands and the continuity among fuels in the landscape represents an emerging fire management predicament: climate change and drought add to the risk of wildfire, insects, and disease; yet funding available to treat fuels is diminishing and being devoted to the wildland-urban interface, leaving wildlands at greater risk of catastrophic wildfire that could dearly cost tribal communities.

B2. Progress continues in innovative silviculture, integration of forest management for a range of values, and in the presence of quality staff. We observed evidence of effective forest-

ry in each region, including strip harvests to regenerate birch in the Lake States, cable thinning and pre-commercial thinning for density management in the Pacific Northwest, effective fuels management and juniper density reduction in the Southwest, and hardwood pulp removals to re-establish pine dominance in the Northeast. Extended rotations and uneven-age management dominate tribal forest practices. Several locations demonstrated the effective use of integrated resource management plans.

Task C

Staffing patterns of BIA and tribal forestry organizations.

C1. Indian forestry operations are understaffed compared to other public and private forest management organizations. Retirements and limited training opportunities contribute to loss of institutional knowledge and leadership. Recruitment and retention of Indian forestry staff trend toward opposite extremes: often, talented staff members serve for a long time, but many others enter, train, and quickly move on. Relatively low salaries, remote locations, and small organizations lead to poor career ladders, resulting in employee turnover and recruitment difficulties. Exacerbating the problem are the large number of long-term employees eligible for retirement.

Lengthy processing time by Human Resources appears to be a widespread problem at all levels of BIA forestry and fire organizations. Delays of up to one year in filling funded positions are common, impacting delivery of all program aspects from forest management planning to project implementation.

	% professionals in workforce	Acres per professional
BIA/tribes	30	30,000
Forest Service	19	24,500
Oregon	80	3,500
NW industry (westside)	40-80	9,000
NW industry (eastside)	40-80	16,000

Staffing needs	Current	Requested additional	% increase needed
NW Region	565	268	47
SW Region	330	276	84
Lake States	226	182	81
Eastern	49	50	102
Central Office	40	16	40
Total	**1210**	**792**	**65**

C2. BIA technical support capability varies by region and tribe, but inadequate technical support has been chronic since the first IFMAT report. Insufficient technical support by BIA contradicts the recommendations of this and earlier IFMATs. Tribes that rely on direct service support from the BIA are particularly affected.

C3. Tribal college natural resource programs have increased in number and enrollment over the last decade, and represent an important link between tribal natural resource programs and future forestry professionals. Tribal colleges play an increasingly important role in creating forestry educational opportunities for tribal students. But these programs struggle for funding and were often run by volunteers. Overall, lack of access to training and continuing education persists as a challenge to BIA and tribal forestry and natural resource staff. Leadership and training are essential

to maintaining a workforce, providing opportunities for staff qualification certifications, and bringing future leaders up through the ranks.

Recommendations

- Staffing replacement procedures need to be reviewed so that funded positions can be filled promptly according to a strategic recruiting and retention plan. Adequate compensation and relocation programs must be available. The full implications of organizational and personnel changes within the BIA and the federal establishment should be examined for their potential and immediate effects on trust responsibility and sustainability of Indian forests.
- Specific steps should be taken to strengthen educational opportunities for tribal members interested in forestry and natural resource management.

Task D

Timber sale administration procedures, including accountability for proceeds.

D1. Currently, tribes use many different methods to determine the value of their logs and stumpage, and questions remain as to whether they are receiving appropriate value. Each tribe has different goals and objectives specific to the needs of their communities and forests: some operate sawmills, while others sell delivered logs or stumpage. Other tribes in regions with sufficient processing capacity to support competitive log markets sell logs on the open market, albeit in reduced volumes in recent years. As identified in previous IFMATs, there is a need for an auditing procedure to document the competitiveness of forest enterprises and monitor the stumpage comparisons between tribes and neighboring lands.

Fort Apache. Photo by Larry Mason.

D2. A current lack of planning to control costs and forecast markets compromises tribal revenues. Revenues could be improved by making the appraisal and timber sale process more efficient and adaptable to market fluctuations. We saw very few examples of forest management plans or integrated resource management plans that provide any direction or guidance on marketing, cost strategies, or scheduling of timber harvest.

D3. Tribal enterprises can create numerous community benefits through multiplier effects that are not well documented. In isolated communities and reservations with high unemployment, the creation of jobs can avert significant health and social service costs. Tribal enterprises provide a considerable number of jobs on reservations and generate revenues that help underwrite the costs of forest stewardship. However, the full implications for environmental, social, and economic benefits have not been adequately researched and are poorly understood. A critical lack of information about the market and nonmarket value relationships unique to reservations clouds understanding of trust obligations, handicaps forest planning, and confounds best value

estimation for comparative timber sale arrangements.

D4. We saw little improvement in relationships between the natural resource departments and tribal forestry programs. Better coordination between tribal councils, enterprise board of directors, and the natural resource programs is critical to integrate cultural, economic, political, and environmental concerns to achieve tribal goals.

Recommendation

- We recommend a regular assessment reporting on the marketing of forest-based products, the condition of tribal economies, the status and needs for woodlands management, and the impacts and trends of climate change on tribes and their resources.

Task E

The potential for reducing BIA rules and regulations consistent with federal trust responsibility.

E1. Because some Indian forests have been managed effectively in pursuit of tribal goals, they sometimes provide habitats and services no longer found on private lands. This leads to a view that Indian forests have an obligation to continue to provide those services, even at the expense of generating revenue for the tribal beneficiaries. Payments to tribes for ecosystem services could bring income needed to support integrated management.

E2. Goals for and laws granting sovereignty and enabling self-determination are often made difficult to achieve. Adhering to federal forest and environmental laws and policies, especially when not adequately funded, can inhibit full sovereignty and self-determination and make reaching tribal goals insurmountable. For example, approval of tribal timber sales can be delayed by lack of funding for activities related to compliance with the Endangered Species Act.

E3. Forest roads in Indian Country are of much lower quality than on other federal lands, creating adverse environmental impacts and reducing potential for tribes to derive full benefits from their resources. Road funding for BIA roads comes from the Federal Highway Administration (FHWA) for roads providing public access. Indian forest roads specifically needed for the protection, administration, use, and development of tribal forest resources are supported by timber sales or tribal contributions.

E4. Trespass, particularly for illegal plant cultivation, continues to be a significant management problem on several western reservations. Law enforcement officials frequently find sophisticated marijuana operations on Indian forests in addition to trespass problems such as theft of natural resources and poaching.

Recommendation

- The funding and methods of the consolidation of public and private land within tribal boundaries and the buyout of allotments should be a priority objective. As a first step toward consolidation, federal lands within reservation boundaries should be returned to tribes.

Task F

The adequacy of Indian forest land management plans, including their ability to meet tribal needs and priorities.

F1. Forest management plans (FMPs) exist for most tribal forestlands. Many are up to date and well-executed, but sometimes lack the detailed harvest scheduling, interdisciplinary support, and environmental projections that allow management professionals to provide adequately for future harvest and forest protection activities. Tribes of different sizes, resources, and locations have different needs. Planning helps customize conservation strategies to fit the needs and objectives of these individual tribes. Planning can also help refine evolving tribe-to-federal relationships. Several large tribes attributed planning challenges to a lack of personnel, planning funds, and technical support.

F2. Plans vary widely in terms of approach, depth, content, and rigor; most forest plans are still primarily timber management plans, with some standards, guidelines or limitations imposed by other resources. The Continuous Forest Inventory system and BIA planning technology generally do not support a comprehensive approach to planning. There is a wide range of approaches and success rates in obtaining public input on forest plans. Plans for the most part do not address fire ecology, climate change, forest health, or forest restoration. Most plans identify five or ten years' worth of upcoming projects. But most do not identify resources (funding, positions, investments) needed to support the effort. In fact, only 25 percent of the FMPs we reviewed fully addressed funding and staffing requirements to carry out the FMP.

F3. Although some FMPs addressed woodland management, most provide limited direction as to how the tribe is to specifically manage their woodlands.

Recommendation

- Incorporate adaptation planning into the integrated resource management and forest management planning processes of tribes using a template similar to the one developed by the Institute for Tribal Environmental Professionals that integrates traditional and scientific knowledge.

Allotments: *fragmenting forest planning and management*

Complicating the management of Indian forests are the thousands of fragmented and fractionated allotted lands that are owned by individual Indian families and are held in trust by the federal government, most often within reservation boundaries, and managed in conjunction with tribal forest trust lands.

The allotment programs, and the continued fractionalization of the allotments, have a long-lasting negative impact on the nature, use, and structure of Indian forests. This ownership structure increases management costs, frustrates landscape level management, and results in an uneven distribution of management constraints between allotment owners. As a rule, allotments are under-planned.

There is a need to continue consolidation of allotment lands on reservations. The problem, noted by past IFMATs, has worsened with the passage of every generation.

Mountains near Flathead. Photo by Mark Rasmussen.

Task G

The feasibility of establishing minimum standards for measuring the adequacy of BIA forestry programs in fulfilling trust responsibility.

G1. NIFRMA addresses state-of-the-art forestry but does not define it. Developing standards is crucial for assessing how well the Secretary of the Interior is fulfilling the duty to support state-of-the-art forestry. A state-of-the-art Indian forestry program must 1) be assured of predictable, consistent, and adequate funding for forestry programs on all reservations, whether direct service, contracting, or self-governance compacting; 2) have access to adequate technical and research support; 3) be guided by each tribe's vision for its forests; and 4) strive to sustain tribal resources and objectives**.** The condition of the forest itself, over time, is the best measure of whether state-of-the-art management is being achieved. A central part of the trust responsibility to see that each tribe has the means to develop its vision and management plans with adequate technical resources and personnel. We found tribal council engagement in forestry to vary.

G2. The woodland forest type encompasses the largest area of tribal forest ecosystems, but receives too little attention to be managed at a state-of-the-art level. Because the economic value of these lands is lower than timberland, little technical and staff support is available from the BIA.

G3. Agencies such as the Forest Service and the Natural Resources Conservation Service (both U.S. Department of Agriculture agencies) are engaging increasingly with tribes. For example, we observed woodland management activities supported mainly by NRCS. Project partnerships like these can be beneficial, but such engagement is not always coordinated with tribal objectives. The trust obligations of non-BIA agencies are often unfamiliar to them. The trust duty could be clarified through adoption of interagency agreements with the BIA.

Recommendation

- The trust oversight recommendations of both previous IFMATs should be further developed and implemented before the next IFMAT review.

Lac du Flambeau. Photo by Larry Mason.

To continue the successes in Indian forestry, these steps must be taken:

Restructuring the evaluation of trust oversight performance.

Ensuring adequate recurring funding geared to tribal goals.

Improving technical assistance and cooperation.

Fulfilling these tasks is not only necessary to meet the trust obligations of the U.S. government to Indian tribes, but would yield lasting contributions to the health and productivity of the nation's forests.