

EVERGREEN

The Magazine of the Evergreen Foundation • Spring 2014



Forestry in Indian Country:
Solving Federal Forestry's Rubik's Cube

Reservations with Significant



Ant Timberland Resources



Major Timberland Resources

Reservation Visits by the
Indian Forest Management Team (IFMAT)

Category 1 Over 10,000 acres of commercial timberland or over 1 million board feet allowable cut	Category 2 Other reservations with economically viable timberlands
1 Acoma	48 Attna II (not shown)
2 Annette Islands (not shown)	49 Alabama-Coushatta
3 Bad River	50 Bay Mills
4 Blackfeet	51 Chehalis
5 Bois Forte	52 Cherokee
6 Coeur D'Alene	53 Choctaw
7 Colville I, II, III	54 Chugach (not shown)
8 Coquille I	55 Cook Inlet (not shown)
9 Crow	56 Doyon (not shown)
10 Eastern Cherokee I, II, III	57 Fond Du Lac II
11 Flathead I, II, III	58 Fort Belknap
12 Fort Apache I, II	59 Fort Bidwell II
13 Grand Portage	60 Harrahville
14 Grand Ronde	61 Isleta
15 Hoopa Valley I	62 Kallispil
16 Hualapai	63 Koniag (not shown)
17 James	64 Laguna
18 Jicarilla	65 L'Anse
19 Lac Courte Oreilles	66 L'Anse (Ontonagon)
20 Lac Du Flambeau I, III	67 Lummi
21 Leech Lake I, II, III	68 Mille Lacs
22 Makah I, II, III	69 Mole Lake
23 Menominee I, III	70 Macklehook
24 Mescalero I, II, III	71 Nanticoke
25 Mississippi Choctaw I	72 Nisqually
26 Navajo I	73 Omaha
27 Nez Perce III	74 Picuris
28 Northern Cheyenne	75 Pine Ridge
29 Passamaquoddy	76 Port Gamble
30 Penobscot I, II, III	77 Port Madison
31 Quinalt I, II, III	78 Potawatomi (WI)
32 Red Lake I, II, III	79 Qulute
33 Rocky Boy's	80 Ramah-Navajo I
34 San Carlos III	81 Red Cliff
35 Sisseton	82 Rosebud
36 Southern Ute I	83 Round Valley II
37 Spokane III	84 Sac And Fox (IA)
38 Stockbridge/Munsee	85 San Isidro
39 Tule River I, III	86 Santa Clara
40 Tule River II, III	87 Santee
41 Umah And Curry	88 Sequoia (not shown)
42 Umatilla	89 Seminole
43 Warm Springs I, II, III	90 Shoshoni Bannock (Pt Hill)
44 White Earth I, II, III	91 Sitkumish
45 Yakama I, III	92 Squaxin Island
46 Yurok	93 Swinomish I
47 Zuni	94 Taos
	95 Tesoque
	96 Turtle Mountain
	97 Ute Mountain
	98 Wind River
	99 Winnemucca (NEVA)
	100 Zia I

Reservation Timberland Designation

- Major Timberland Resources (Category 1)
- Minor Timberland Resources (Category 2)
- BIA Regional Office

Scale 1:15,000,000





Earth's Gifts

We are Indian People. As the First Stewards, we have cared for the Land since before time began. Our natural resource management practices are rooted in the traditions, knowledge, and wisdom handed down to us by our ancestors over countless generations.

Our Creator has entrusted us with the care of our Land and its resources. In exchange, He has blessed us with precious gifts of life: foods, clothing, medicines, fuel, shelter and goods for trade and commerce - the means to nurture our bodies, minds and spirits.

We share a deeply-felt responsibility to protect the land for those who will follow in our footsteps. The future of our peoples depends on stewardship of the natural resources that are both our heritage and legacy. We care for Earth, so she will continue to care for us. We are part of the Land and the Land is part of us. It is the Indian Way.

Table of Contents

- 6 In This Issue**
Jim Petersen, Founder, the Evergreen Foundation
- 8 Our Land is What Makes Us Who We Are**
Larry Mason, IFMAT III team, University of Washington, School of Forest Resources, retired
- 10 Vision**
Chief Oshkosh, Menominee Indian Tribe of Wisconsin, Chief, 1827-1858
- 12 Understanding the Indian Connection to Land and Place**
Bill Tripp, Eco-Cultural Restoration Specialist, Karuk Tribe
- 14 The Sacred Indian Connection to Mother Earth**
Phil Rigdon, Deputy Director, Department of Natural Resources, Yakama Nation, President, Intertribal Timber Council
- 16 Tribal Forestry as a Model for Multiple Use Lands**
Hal Salwasser, IFMAT III team, PhD, Professor, Forest Ecosystems, Oregon State University
- 18 IFMAT III: An Overview of the Assessment**
John Gordon, IFMAT III, Co-chairman; Chairman, IFMAT I & II PhD, Dean, Yale School of Forestry and Environmental Sciences, retired
John Sessions, IFMAT III Co-chairman; Vice Chairman, IFMAT I and II PhD, Distinguished Professor of Forestry, Oregon State University
- 22 Forest Health-Wildland Fire Crisis: A Polish Perspective**
Jim Erickson, Fire Technical Specialist, Intertribal Timber Council
- 26 Federal Laws, Regulations and Court Rulings Impede Effective Forest Management**
Jim Erickson, Fire Technical Specialist, Intertribal Timber Council
- 28 Indian Forestry: Still Under-funded and Under-staffed but “Making things work”**
John Sessions, IFMAT III Co-chairman, Vice Chairman, IFMAT I and II PhD, Distinguished Professor of Forestry, Oregon State University
Adrian Leighton, IFMAT III team, Chair, Natural Resources Department, Salish Kootenai College
- 30 So What About the Money?**
Mark Phillips, ITC Information and Research Specialist, Edwards Associates
- 32 No Mill, No Market, No Forest**
Jim Petersen, Founder, the Evergreen Foundation
- 34 Tribal Branding in a Very Competitive Marketplace**
Gary Morishima, Technical Specialist, Quinault Indian Nation
- 36 Caring for Woodlands if Vitaly Important to Tribal Communities**
Kelly Hetzler, San Carlos Apache Tribe and Bill Grauel, Bureau of Indian Affairs
- 38 Investing in the Next Generation of Indian Foresters**
Serra Hoagland, PhD student, Northern Arizona University
Breanna Gervais, student intern, Tribal Partnership Project at Northwest Advanced Renewables Alliance
- 40 Tribal Colleges and Universities: A Critical Link in Indian Education, Workforce Development**
Breanna Gervais, student intern, Tribal Partnership Project at Northwest Advanced Renewables Alliance
Serra Hoagland, PhD student, Northern Arizona University
Adrian Leighton, IFMAT III team, Chair, Natural Resources Department, Salish Kootenai College
- 42 Indians and Forests: Mileposts in History**
Larry Mason, IFMAT III team, University of Washington, School of Forest Resources, retired
- 44 Federal Trust Responsibility: No Simple Matter**
Eric Eberhard, Distinguished Indian Law Practitioner in Residence, Seattle University
- 46 The View from 20 Years Out: Tribal Vision Unchanged; Management Approval Increasing**
Adrian Leighton, IFMAT III team, Chair, Natural Resources Department, Salish Kootenai College
Joyce Berry, Dean, Warner College of Natural Resources, Colorado State University
John Gordon, PhD, Co-chairman, IFMAT III, Chairman, IFMAT I and II
- 48 Anchor Forests: The Key to Ending Gridlock in Federal Forests**
Vincent Corrao, IFMAT III team, President, Northwest Forest Management
- 50 Tribes as Managers of Federal Forest Resources: A “What if” Question Whose Time Has Come**
Brett Kenney, Tribal Attorney, Coquille Indian Tribe
- 52 Climate Change Brings Risks and Opportunities to Tribes and Their Forests**
Dave Cleaves, IFMAT III team, Climate Change Advisor to the Chief, U.S. Forest Service
Adrian Leighton, IFMAT III team, Chair, Natural Resources Department, Salish Kootenai College
- 54 Planning for Climate Change: The Tribal Challenge**
Sean Hart, Climate Change Coordinator, Bureau of Indian Affairs
- 56 Building Partnerships with the Intertribal Timber Council: Tribes, NGO’s and Public Agencies**
Don Motanic, Technical Specialist, Intertribal Timber Council
- 58 What Fate Awaits Leech Lake?**
Keith Karnes, Leech Lake Reservation Forester
- 60 Stream Restoration Benefits Ecosystems, Economies and Cultures**
Kelly Crispin Coates, Fisheries Biologist, Cow Creek Umpqua Tribe
- 62 Our Land and the Threat to Mother Nature’s Power**
Carly Martin, Quinault Nation
- 64 Life and Opportunity in the Most Unexpected Places**
Faline Haven, Acting Chief Forester, Bureau of Indian Affairs
- On the Cover:**
A very deliberate Eliot Ivy trudges through a clearcut with a sack full of cedar seedlings at a Kids in the Woods event on Coquille tribal forestland in southwest Oregon. He is the son of Jon and Soo Lee Ivy, who both work for the Tribe. Elliot is a fourth-grader.

In This Issue

In this issue, we write about forests and forestry in Indian Country for the third time since 1989.

Forestry in Indian Country: Solving Federal Forestry's Rubik's Cube summarizes and amplifies the work of the third Indian Forest Management Team [IFMAT], a stellar group of 10 forest scientists and forestry professionals, all of them hand-picked by the Intertribal Timber Council, an association that for 37 years has represented the interests of Indian tribes that own and manage timberlands in the United States.

Our main message – and that of the IFMAT III team – is compelling and powerful. Very simply, Indian forestry, which stands astride earth-bound and spiritual worlds, holds the key to solving forestry's Rubik's cube – a political and regulatory Gordian knot that Congress has tried and failed to undo.

You can be forgiven for wondering how Indians have managed such a miraculous feat. The answers are rooted in an iconic land ethic that is thousands of years older than America itself – an ethic that does a remarkably good job of accounting for all of the cultural, spiritual, historic and biological pieces of lands that have fed, clothed and housed Indians since the last Ice Age ended some 12,000 years ago.

On these pages, a talented group of writers, including several IFMAT III team members, answers the who, what, when, where, why and how questions associated with the vitally important role that Indian forestry can play in resolving one of the most vexing and economically destructive issues of our time: the politicization and polarization of our nation's collective ability to care for its natural resources, including its forests. In less than 20 years, a federal forest management program that was the envy of the world lost its way. An estimated 80 million acres of federal forest land – an area larger than New Mexico – is now being overrun by insects, diseases and inevitable wildfire. In harm's way lie timber, fish, wildlife, water, soil, recreation and cultural resources that belong to every American.

Climate change is transforming this crisis into a tragedy that now threatens every timberland owner in the western



A western larch seedling pushes skyward on Colville Indian timberland in northeast Washington. The Confederated Tribes of the Colville Reservation own about 2,100 square miles of timber and rangeland. They also operate a saw mill. Don Motanic photo

United States, including Indian tribes. Yet for reasons we will make clear on these pages, federal natural resource managers representing our government [Congress] seem unable to do much about the calamity that dominates our 24/7 news cycle during annual wildfire seasons that are costing taxpayers more than \$1 billion in annual firefighting costs.

The root cause of our inability to get ahead of this tragedy: thousands of pages of conflicting federal environmental regulation make it impossible for the government's principal natural resource managers to do their work without running afoul of byzantine rules and regulations that are impossible to understand, much less obey.

Almost every environmental lawsuit in federal court today has its roots in "process" errors that are the result of [1] the ability of lawyers to saddle taxpayers with their legal fees vis-à-vis the Equal Access to Justice Act and [2] Forest Service or Bureau of Land Management failure to correctly decipher vaguely written administrative

rules that seem to have been written for no purpose other than to trump other vaguely written rules. Fixing this mess requires that Congress take a serious look at a whole "new" land ethic, and that land ethic is Indian forestry.

Although it is not widely understood, Indian lands are not publicly owned, but are the property of governments and individual Indians. Indian tribes are governments unto themselves, with inherent sovereign powers over their lands, resources and people living within these tribal jurisdictions.

The United States Government bears fiduciary trust responsibilities and other trust obligations to protect and manage Indian forests and other natural resources. These obligations are spelled out in considerable detail in a litany of treaties, statutes, executive orders and judicial decrees.

Following an exhaustive review of treaties, laws and agreements, some dating from the 1870s, Congress has confirmed, most recently in its 1990 National Indian Forest Resources Management Act [NIFRMA], that the U.S. Government bears trust responsibility for Indian lands and people.

Congress' designated agents in its government-to-government relationship with tribes are the U.S. Department of the Interior and Interior's Bureau of Indian Affairs. Official policies of the U.S. support tribal consultation and require federal agencies to consult with tribes on actions that may affect tribal rights and interest. Unique legal-political relationships with Indian tribes require the federal government to interact with Indian tribes on a government-to-government basis.

"NIFRMA," charged the Secretary of the Interior with funding and conducting decadal reviews – called "IFMAT" reports – that compare federally funded Indian forest management programs with presumably "state-of-the-art" federal, state and privately funded forestry programs. These reviews are conducted independently by scientists who visit tribal forests, assess their on-the-ground forestry programs and discuss progress and problems with tribal foresters and members. Once their work is complete, the IFMAT team reports

its findings and conclusions to the Interior Secretary and Congress.

The current team – “IFMAT III” – completed its assessment work this summer. Their review chronicles progress and promise in 20 tribal forests it visited: Colville [Washington], Coquille [Oregon], Eastern Cherokee [Tennessee], Flathead [Montana], Fort Apache [Arizona], Lac du Flambeau [Wisconsin], Leech Lake [Minnesota], Makah [Washington], Menominee [Wisconsin], Mescalero Apache [New Mexico], Nez Perce [Idaho], Penobscot [Maine], Quinault [Washington], San Carlos Apache [Arizona], Spokane [Washington], Tulalip [Washington], Tule River [California], Warm Springs [Oregon], White Earth [Minnesota] and Yakama [Washington].

Across the U.S. 305 forested Indian reservations span more than 18 million acres. Of these, 41 tribes each own more than 10,000 acres of timberland and have annual harvesting programs that exceed one million board feet. Some six million acres of Indian forestland is classified as “commercial,” meaning that it is capable of growing more than 20 cubic feet per acre per year. Another four million acres are commercial woodlands, eight million acres are a mix of commercial and non-commercial lands, and more than one million “Indian Country” acres have been set aside in no-harvest reserves.

Remarkably, the same two scientists have directed IFMAT’s assessments since their inception in 1993. Dr. John Gordon, Pinchot Professor Emeritus of Forestry and Environmental Studies at the Yale School of Forestry, and the school’s former forestry dean, chaired IFMAT I and II and co-chaired IFMAT III with his colleague, John Sessions, PhD and Strachan Chair of Forest Operations Management at Oregon State University, who co-chaired IFMAT III and was Dr. Gordon’s vice-chairman for IFMAT I and II.

There is an identifiable conformity – a style if you will – to most of the reports herein. This is because they are written to fulfill the requirements Congress laid out in NIFRMA in 1990. Hence, you will see a lot of data, though nothing like what is presented in the actual report to Congress and the Secretary of the Interior.

Our role – and that of our authors – is to synthesize these more detailed reports for you in a form that is more easily read and understood within an overarching theme or storyline that centers on a management concept the Intertribal Timber Council began to flush out after IFMAT II was completed in 2003. They call their

concept “Anchor Forests,” and where forestry’s rubber meets conflict’s road, this is the best idea we’ve seen since the old West Coast Lumbermen’s Association created the American Tree Farm System in 1941.

To be designated an “Anchor Forest” the area designated must join tribal forest land with adjacent federal forest land. If the boundary lines that join federal and tribal lands could be strung together in one continuous line, the line would be about 3,000 miles long, or roughly two-thirds the length of the fenceless border that joins the U.S. and Canada. So there are lots of opportunities for collaboration along the invisible line that joins tribal and federal forest land. But why collaborate? Because the political problems that have put federal forest management on its knees are now spilling onto tribal forest lands in the form of unwanted insects, diseases and wildfires that are doing great economic and environmental harm to tribal forests for which the federal government bears direct trust responsibility. So there is much more involved here than good manners or being a good neighbor. The U.S. Government has a legal problem here – and tribes are providing the means to solve it.

What benefits might flow from Anchor Forests? How about a collaborative, landscape scale triage approach to insect and disease infestations that have thus far engulfed about 80 million acres of federal forest in the 11 western states, with debilitating impacts on federal forest stewardship budgets. These are the acres that are being held hostage to the political and regulatory mess in Washington, D.C. And these are the acres that are burning in stand-replacing wildfires that bear no resemblance to the natural and Indian fire regimes that were prevalent in the Interior West for eons. Moreover, this 80 million acre expanse is more than four times the size of the entire American Indian timber estate. Quoting Apollo 13 mission commander, Jim Lovell, “Houston, we have a problem.”

Anchor Forests address both ecological and economic needs. On the ecological side, missing natural resiliency is restored through a system of land treatments that include thinning, brush removal and the reintroduction of “Indian fire,” purposefully set fires that hold down the buildup of woody biomass that fuels bigger fires and plays host to insects and diseases that prey on stressed trees. On the economic side, new privately-funded wood processing infrastructure and much needed jobs for tribal members whose already tenuous lives were turned upside down and inside

out during the recent recession.

We tell the whole story on these pages – not through our eyes but through the front line eyes of those who know it best: members of the IFMAT III team and Indian friends who live it every day. Their story is at once uplifting and disheartening; uplifting because tribes have made remarkable progress since the first IFMAT report was issued in 1993; disheartening because Congress is still shorting tribal forestry budgets by \$100 million a year, despite legally binding trust obligations. This deficiency, which is less than ten percent of the U.S. Forest Service’s \$1 billion-plus annual firefighting budget, chases after the federal regulatory mess Congress created, and can only solve by blessing Indian Forestry.

Increasing tribal forestry’s budget by \$100 million annually – to \$254 million – would put tribal forestry on comparable footing with other “state of the art” private, state and federal forestry programs. This is more than wishful thinking. It is a congressionally mandated and legally binding obligation spelled out in the 1990 National Indian Forest Resources Management Act – a trust obligation that neither Congress nor the federal government has ever honored.

Evidence of this inexplicably overlooked obligation isn’t hard to find. After looking at non-tribal forestry programs, the IFMAT III team calculated a staffing shortfall of 800 positions – the greatest since IFMAT I was completed 20 years ago. Perhaps the most insidious result of this shortfall is that tribes have few new recruits to fill the manpower gap that has been created by the retirement of an aging workforce.

It will take an additional \$12.7 million a year to ramp up and maintain forestry education and training programs that can stem the tide created by the federal government’s failure to fund tribal forestry at a level that compares favorably with other public and private forestry programs around the country.

A little fourth grade math illustrates how easily these budget shortfalls can be cured. Congressionally approved federal spending is now a smidgen north of \$7,264,000 per minute, so in just 14 minutes per year tribal forestry can be made whole, and in a mere 105 seconds per year the next tribal work force can be trained. Just saying’.

Onward we go,
Jim Petersen, Founder, the Evergreen
Foundation

“Our Land is What Makes Us Who We Are”¹”

By Larry Mason, University of Washington School of Forest Resources; Retired.
Forestry Consultant, Alternate Dimensions, Inc.

Not counting Alaska, Indian lands once covering 2.4 billion acres are now reduced to 57 million acres, mostly in the West. A small fraction is in fee ownership (in which the owner holds title to and control of the property), but most Indian lands outside of Alaska are held in trust by the federal government for tribes and individual Indians. In Alaska, the reverse is true. Native individuals, villages, tribes, and corporations hold almost 50 million acres about half of which are forested. Most of these lands are in fee status, but 460,000 acres of forest lands are in trust status.

Tribal forests cover about one-third of all Indian trust lands and serve as the economic and cultural backbone for many Indian reservations. On a total of 334 Indian reservations in 36 states, there are 18.6 million acres of Indian forests and woodlands. Of the total number of reservations, 305 have trust status and 29 are in fee ownership. Excluding Alaska, we find 18 million acres on 294 Indian reservations located within the contiguous United States and held in trust by the federal government. Complicating Indian forestry further, however, are the thousands of fragmented, fractionated, and forested 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.

Tribal forests and woodlands are ecologically and geographically diverse, hosting representative samples of most of the tree species and forest ecosystems found in North America. They include, for example, Douglas-fir, western red cedar, and hemlock in the moist Northwest; giant sequoias and redwoods in California; ponderosa pine, lodgepole and larch in the Inland West; pine, pinyon, and juniper in the dry woodlands of the Southwest; aspen, maple, oak and white pine in the Lake States; eastern red spruce in the Smokey Mountains; and northern hardwoods and mixed conifers



In 2012, members of the Intertribal Timber Council met with the U.S. Forest Service on the Tule Lake Indian Reservation in northern California to discuss the tribe's proposed fuel treatments within the Sequoia National Monument. The Monument's southern section partially surrounds the reservation and contains 22 giant sequoia groves. Jim Erickson, ITC's Fire Technical Specialist took this photograph

in the Northeast.

Of the 18 million forested acres on Indian reservations, six million acres are considered commercial timberlands, nearly four million acres are commercial woodlands, and more than eight million acres are a mixture of non-commercial forests and woodlands. More than one million acres of these forests have been set aside from harvest by tribal governments as cultural and ecosystem reserves.

The estimated total standing inventory of commercial timber in Indian Country is 43 billion board feet (BBF). The annual allowable cut (AAC) is estimated at 564 million board feet, an amount sufficient to construct 37,600 homes. It is from the commercial timberlands that most of the income from harvest of forest

products is generated.

The Pacific Northwest has a scant 20 percent of all Indian forestlands but more than half of the forest inventory is located there. In 2011, two-thirds of total Indian harvested timber volume and 80 percent of the stumpage value came from harvest activities in this region.

Although the Southwest has nearly 30 percent of Indian timberland and 80 percent of the commercial woodland, in 2011, harvest volumes were only two percent of the total Indian timber harvest and less than one percent of the stumpage value.

The Lake States region, with 20 percent of the commercial timberland, produces most of the hardwood harvest: 25 percent of the total timber volume, and 18 percent of the stumpage revenue.

Eastern forests contribute seven percent of the timber volume and three percent of revenue (BIA 2012a). Timber harvests also occur in Alaska, primarily on fee lands owned by Native corporations.

In total, 202 tribes have woodlands. For 109 of these tribes, woodlands are their only forests. Woodlands are semi-arid ecotones at the margin between forests and rangelands. Eighty percent of these lands are found in the Southwest region. Little commercial timber harvesting occurs on the woodlands and non-commercial forests that account for two-thirds of all Indian forested areas. However, a multitude of cultural and ecosystem services are provided by woodlands that are essential to tribal life-ways.

Nearly two thousand individuals, Indian and non-Indian, some of whom are directly employed by tribes and others that work for the BIA, earn a living keeping Indian forests healthy and productive. Thousands more find related income as contractors, workers, fire fighters, and service providers. Sale of reservation timber helps to support tribal governments and communities. The contributions to



The glow of a distant fire seems to be encased by the night sky in Karuk Aboriginal Territory in northern California. Bill Tripp photo

cultural identity, employment, and revenues, as well as subsistence and informal economies that are provided by forests, are uniquely important to Indian families as compared to the more transient and urban broader society.

A struggling world economy and consequent fall in log and lumber prices have had a significant impact on Indian forest programs and harvests. During the 1990s, harvest volumes averaged 800 million board feet per year. By 2001, the annual harvest had dropped to 600 million board feet, due to the federal shift in funding from forestry to fire management as much as market changes. And by 2011, it had dropped to 360 million board feet per year, the lowest volume of timber harvested from Indian forests

since the Great Depression. Stumpage returns in 2001 equaled \$87 million but in 2011 dropped by more than half to \$43 million. All Indian forest communities have suffered as timber has lost value, but the Southwest has been particularly hard hit with revenues from timber sales dropping to less than three percent of 2001 levels.

The Bureau of Indian Affairs (BIA) reported that jobs resulting from timber harvest in 1991 and 2001 were equivalent to 53 full- and part-time jobs for every million board feet of timber harvested. These economic multipliers indicate that for 2011, Indian timber harvests generated 19,000 full- and part-time jobs suggesting a loss of more than 10,000 jobs in the last decade representing a reduction

in community benefits of 38 percent from 2001 levels.

In addition to forestry programs, the BIA Branch of Wildland Fire Management oversees more than 60 percent of the Department of Interior (DOI) casual firefighter workforce, approximately 7,000 employees, many of whom are Native Americans, that are on call as needed for deployment to inter-agency wildland fire emergencies. The BIA and tribes jointly manage response resources including helicopters, air tankers, engines, and bulldozers. In 2011, hazardous fuels reduction treatments resulted in an additional 700 reservation jobs and \$28.4 million in economic outputs.

¹ Focus group comment from IFMAT I

Vision



“Start with the rising sun and work toward the setting sun, take only the mature trees, the sick trees and the trees that have fallen. When you reach the end of the reservation, turn and cut from the setting sun to the rising sun and the trees will last forever.”

Chief Oshkosh, Menominee Indian Tribe of Wisconsin,
Chief, 1827–1858



Sunlight bathes tree leaves in a mixed species timber stand on the Menominee Indian Reservation in northern Wisconsin. Menominee forestry is widely-praised, as is the tribes sawmill at Neopit, Wisconsin. Jim Petersen photo

Understanding the Indian Connection to Land and Place:

Northern California's Karuk Ararras – The Upriver People

By Bill Tripp, Eco-Cultural Restoration Specialist, Karuk Tribe Department of Natural Resources

The Karuk Ararras (upriver people) are of the remote Western Klamath Mountains in Northern California. Like many Tribes, the Karuk have been dependent upon their territorial landscape since time immemorial. This relationship is not based on the dominant European paradigm of land ownership, resource extraction, or exclusion of function; so it provides a framework of bio-cultural responsibility specific to a people of place. The level of connection to land and place has been altered dramatically from tribe to tribe. Some tribes have large reservations, where others are essentially landless. Some remain in place, while others were forcibly relocated. Regardless of these differences, there are shared commonalities among tribes throughout this country. For example, a deeply felt spiritual and cultural sense of place, and a commitment to long term responsibility for ecological balance within their originally occupied, and/or subsequently acquired homeland or territory.

The Karuk Aboriginal Territory encompasses approximately 1.4 million acres. Approximately 95% of this area is considered public domain under the administration of the U.S. Forest Service. The remaining 5% is considered Tribal/individual Trust or Private Property. The Karuk Ararras have resided here for millennia. We have no treaty that formally ceded our territory, nor have these lands been legally acquired by discovery or conquest. To this day these lands are viewed by Indian people to be their own, though not by the formal definition of what is considered "ownership" today, but as it has always been; we own the right to occupy

the land, and utilize the resources that fall within the area of our beneficial influence.

Over many decades Indian people have been forced to watch as environmental degradation occurred, whether from entire

over 50% of Karuk people residing on trust land were unemployed, while at the same time agency administered forest management contracts hired outside labor and ignored sacred site protection

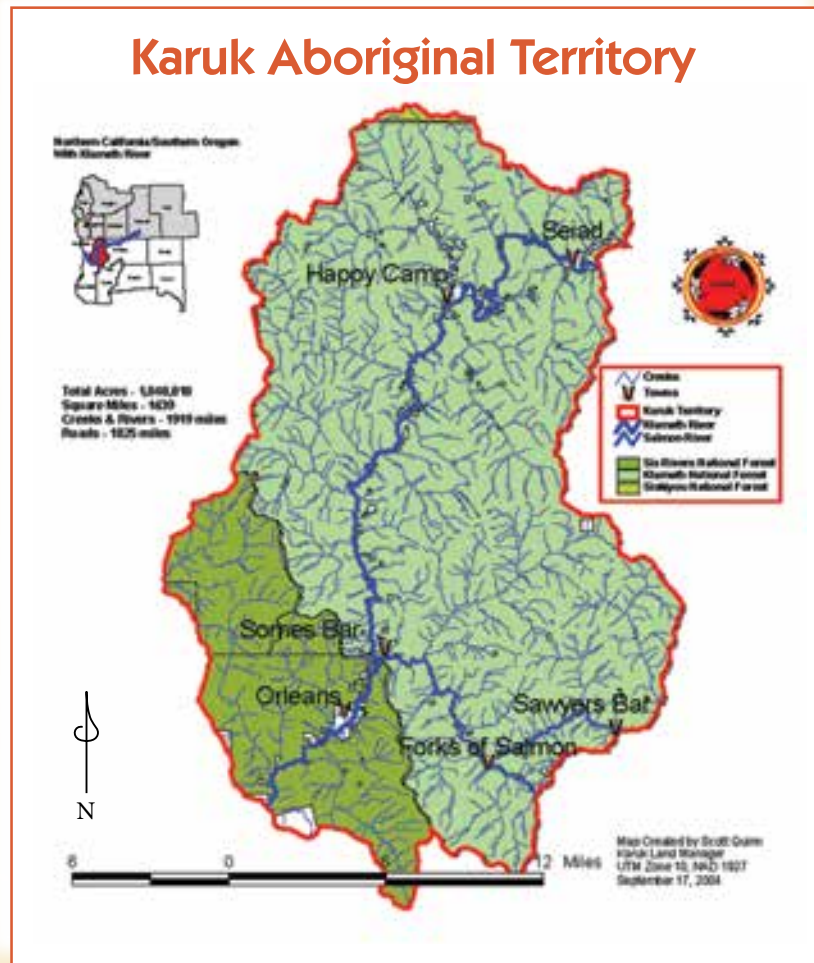
measures established in tribal consultations concurrent to the National Environmental Policy Act (NEPA) process.

In short, the past century and a half has brought monumental threats to the Karuk way of life, including impacts to our cultural identity, our social well-being, the intent behind our relationship to the land, our economic standing, and our ability to thrive as an ecological co-dependent of our homelands.

Within Indian country, there are spiritual and cultural connections that are not shared by your typical urban family. In some cases they are not even shared or understood by non-tribal families within our rural settings. However there is currently an emergence of greater respect and desire to uphold the principles behind these connections, and more consistent sense of place and

responsibility among tribal and non-tribal communities residing within and adjacent to our territory.

These connections are relative to a dynamic bio-cultural relationship to, and responsibility for the lands, resources, processes, and functions based on balanced social, ecologic, and economic factors. We perform annual world renewal ceremonies that bridge the spiritual connection to the physical responsibility as a reminder of what we need to do upon this land and why. This is one way that traditional ecological knowledge of



villages being washed into the river by hydraulic miners, the exclusion of cultural and natural fire, other management schemes driven primarily by economic gain and resource extraction, or being killed for managing food and fiber resources.

As time went on, local native people had to participate in the degradation of our homelands in the interest of survival. Many entered the timber industry to feed their families, while the only lands the tribe could acquire in the new concept of ownership, were completely clear-cut. Even as late as the 2010 census, slightly

a people of place is built and maintained through millennia. It is a very effective process of thinking, knowing, and doing, while learning and adapting to change.

Our arrarahih tanu pikyav stories (the people's fix the world stories) tell us that we learned how to manage this place from the animals; these animals are represented in our ceremonial regalia. We see the effects on these species now that the environment is out of balance. Some of these species are no longer here, but identifying how to bring them back in abundance is part of the solution. If we don't do this, the dominoes will continue to fall.

The fact that our spiritual and cultural connections are not shared or understood goes beyond the urban/rural family divide, and can extend to the tribal – agency intergovernmental relationship. Decision makers of today are typically educated within the context of the extraction principal. They move from place to place in order to advance their careers. This constant relocation denies understanding based on the cumulative knowledge of a specific place.

To place some perspective on this concept of misunderstanding related to an attempt at well intended preservation of a species, one can call attention to the northern spotted owl. Though this is not a regalia species, nor a food species, and does not have a heightened level of significance from the standpoint of direct spiritual or cultural connections, it is one that many have become familiar with as it now has a mandated focus.

The responsible agency decision makers expanded the critical habitat designations and called for control of Banded Owl populations in attempt to protect the species. This decision diminishes tribal ability to perform cultural burns at certain times of year. It diminishes our ability to formulate effective management solutions that are place based, and consistent with our cultural responsibility. It limits our ability to adapt to changing conditions.

A decision made based on the spiritual and cultural connections would



A backing fire set by Karuk Ararras foresters burns in tanoak in the remove Western Klamath Mountains of Northern California. Below, the results of a good burn in white oak. Indians have used fire as a land clearing and game management tool for thousands of years. Bill Tripp photos

not focus on the spotted owl itself for a plethora of reasons. First, managing for the acorn crop at lower to mid- elevation slopes provides for maintenance of multi-layered, multi-species canopy cover and thermal refugia that have been diminished by historic management practices. The abundant acorn crop also attracts creatures upon which the owl feeds. Second, managing for the patch dynamic needs of the deer and elk creates and maintains edge habitat characteristics that not only provide the owl with additional access to prey, but protection from predators as well.

Inter-generational consistency in the long term management of landscape scale ecological systems is critical. Tribes recognize this, while agencies seem to live within the limits of a budgetary or election cycle and most modern families

seem to live within the pay period or trips to the grocery store. This linkage of foods to forest system dynamics is a key factor in addressing forest and fire management solutions. Though diminishing food web ecology upon our local landscapes is real, it is not widely recognized. Our stories tell us that we were given hands because humans truly are the only ones that can maintain balance in these systems.

In Karuk territory the Karuk Tribe, Mid Klamath Watershed Council, Mid-Klamath Fire Adapted Communities Network, and Mid-Klamath Restoration Partnership are attempting to revitalize the human relationship with our natural environment. One way we are attempting this can be found in the latest draft of a vision statement for the partnership, to "Develop resilient ecosystems, communities, and economies guided by the use of cultural knowledge to revitalize continual human relationships with the dynamic physical characteristics of our local landscapes through a truly collaborative process."

This will be a difficult road, especially when relying upon multiple small non-recurring funding sources to maintain the consistent participation of multiple partners over vast multi-jurisdictional

landscapes. We will need to ask ourselves many questions and overcome many obstacles. How can we strategically address the large fire problem, reduce the need for emergency spending, and let fire serve its ecological role? How can we ensure critical human aspects of balanced forest and fire management are enabled instead of impaired? Can we get beyond the statewide burn bans so we can perform our role and fulfill our responsibility to this place at the appropriate time, scope and scale? What agreements should be in place? How do we use the byproducts of our labor to offset the treatment costs? Perhaps most importantly, how do we enable human communities to revitalize the intergenerational spiritual vision and place based cultural responsibilities that have proven effective for millennia?

The Sacred Indian Commitment to Mother Earth

By Phil Rigdon, Deputy Director, Department of Natural Resources, Yakama Nation
President, Intertribal Timber Council, Portland, Oregon

As we consider the current status of forestry in Indian Country, it is important to respect and celebrate and the values of Indians who have been shaping and reshaping our land steward practices for time immemorial. It is their influence that guides us in our land management planning.

It is no cliché to say that Indians feel as though they are part of the land, or that the land is what makes us who we are. Our ancestors walked where we walk, and where we walk is where generations yet unborn will also walk. Our stories – the legacy of our people – reside here with us.

It is our past that compels us to protect and enhance what we have for future generations. The phrased “land and place” is sometimes used to describe the sum total of what we have: our forests, water, the air we breathe, the foods we eat, the animals that feed, clothe and shelter us – all of the marvels that make up our identity.

I recently accompanied one of our respected tribal elders on a field trip into a closed area in our Yakama reservation forest. When I asked him what he thought

of the area, the pride he felt was clearly evident on his face. Like many other tribal members – me included – he believes that our forest is the greatest place on earth. It is indeed sacred to us because it is who we are.


As Indian people, we believe that our land and our people are one in the same. The land - Mother Earth – lives and breathes. She cares for us. She provides for us. She is as much a part of us as any family member. We, in turn, care for her because she provides all that we need. It is no exaggeration to say that we feel connection to Mother Earth at the core of our very being.

It is this deeply rooted commitment to Mother Earth that overshadows forestry in Indian Country. Everywhere you look you will find innovation, dedication, care and respect exhibited by tribal members who work in their forests. As tribal foresters, we see the many and diverse kinds of forestry that are being practiced in Indian Country as models of sustainability other public landowners may wish to consider. Increasingly, many non-Indians agree – and I suspect you will too after you’ve

had the opportunity to read through this summary of our IFMAT III report.

Earlier this year, the Indian Forest Management Assessment Team presented its third IFMAT report to Congress and the Administration. By law, Indian forests and their management must undergo independent scientific review every ten years. The IFMAT III team found that tribes are making great improvements in forest management through innovation, creativity, and partnership building. As I’ve already said, we actively manage our forests to sustain benefits for generations to come, and we do this with far less funding than other federal land managers. Clearly, we could do much more if chronic underfunding and staffing shortfalls could be corrected.

As Tribes, our interests in the health of the landscape go beyond reservation boundaries. Many tribes have off-reservation treaty rights on lands that are now National Forests. Indian Forests are being negatively impacted by catastrophic wildfire, disease and insect infestations on these lands. Even with effective treatment



The moon rises over 12,000 foot Mount Adams in central Washington. The eastern side of the mountain – Washington’s second highest – is on Yakama Nation land and the silhouetted trees in the foreground are on Yakama timberland. Yakama Nation photo



Snow-capped Mount Adams watches over the Yakama Nation in central Washington. The Confederated Tribes and Bands of the Yakama Nation own some of the finest ponderosa pine timberland in the West, and they operate a well-regarded dimension lumber mill at White Swan, Washington. The mill processes about 140 million board feet of timber annually. The Tribe is currently participating in an Anchor Forest demonstration project on its lands. Yakama Nation photo

on our own lands, conditions on nearby federal lands can and do inflict significant damage and economic and social costs to tribal forests and communities. Congress recognized this fact when it passed the Tribal Forest Protection Act in 2004 (TFPA). The TFPA was intended to enable tribes to propose and conduct projects on adjacent Forest Service and BLM lands in order to protect tribal trust rights, lands, and resources.

TFPA has not met expectations on the ground. Since 2004, only six TFPA projects have been effectively implemented on Forest Service lands. The Forest Service and the Intertribal Timber Council [ITC] recently completed a formal review of the TFPA and identified several recommendations to better accomplish its intended outcomes. ITC is coordinating with the Forest Service to develop a task force that will work to tackle many of the recommendations.

Although the Great Recession seems

to be winding down across most of our nation, it has not on Indian reservations. Indian timber-based economies – our saw mills and our forestry programs – were decimated by the collapse of the housing industry. Ensuing federal budget cuts are having a significant impact on our forestry and natural resource management programs. Wildfires are destroying our timber resources and local wood processing and marketing infrastructure is disappearing.

As a nation we are at a crossroads. The loss of forest products infrastructure, both private and tribal, threatens the ability to maintain functional forests across large landscapes. As we move into the near future, Indian Country's ability to manage its land is becoming more connected to the ability of surrounding forest landowners to treat and manage their lands.

The Intertribal Timber Council's Anchor Forest Pilot Project is a pro-active approach to establishing economic and

ecological frameworks for maintaining healthy "working forests" within specific geographic areas. An Anchor Forest includes multiple landowners [federal, state, private and tribal] who share a commitment to long-term active stewardship and commodity production on their respective lands. The goal is to coordinate management across multiple ownerships to support the local harvesting, transportation, and processing infrastructure needed to provide income and jobs, and to help defray costs of forest health treatments.

Indian forests provide tribes with the means to meet current needs while providing pathways to the future. IFMAT, the Tribal Forest Protection Act, and the Anchor Forest concept can help tribes find new pathways, and tribes can, in turn, help public forest managers develop new and more sustainable models for forestry that honor the past and help light the way to a future based on the sacred Indian connection to land and place.

Tribal Forestry as a Model for Multiple-use Lands

Hal Salwasser, PhD, Professor, Forest Ecosystems and Society,
Oregon State University, Corvallis, Oregon

Since the first IFMAT Report in 1993, assessment teams have seen a steady progression of increasing tribal roles in management of forestlands on reservations. In some cases they have assumed many of the roles traditionally played by the Bureau of Indian Affairs.

IFMAT III also found exemplary models of forestry for multiple economic, environmental, cultural and spiritual purposes on reservations visited by the team. IFMAT members remarked on numerous occasions how tribal forestry, when following a plan approved and periodically reviewed by tribal councils and stakeholders, was among the best examples of multiple-use forestry in the nation. Our view is that this is largely due to the broad suite of values and uses for which tribes depend on their forests. This is a marked break from the dominant role of timber management exercised in decades past by BIA forestry, though timber often still plays a prominent role in tribal well-being.

IFMAT III observed examples of tribal enterprises executing stewardship contracts on adjoining national forests, employing tribal members in activities that delivered multiple outcomes, such as creating employment opportunities, improving the resilience of federal forests to drought, pest and fire events, and opening the forest canopy to favor vegetation that supports deer, elk, songbirds and small mammals among other wild life.

There are some 60 tribes that hold treaty rights to “hunt, fish and gather at usual and accustomed places” on ceded lands that are currently managed by federal agencies. These agencies, as do all federal agencies, have a trust responsibility to secure the welfare of treaty tribes. The total acreage involved is not known with certainty, as some variance in interpreting this responsibility exists. However, the total area must be in the tens of millions of acres, most of which



Monitoring is an ongoing process on all tribal forests across the nation. IFMAT III team member, Mark Rasmussen took this picture on Quinalt timberland in western Washington.

are in the West, where federal lands occupy nearly 50% of land ownership (federal ownership in the West varies from a low of slightly less than 30% in Montana to a high of nearly 85% in Nevada).

Federal statutes and treaties establish the trust responsibility of the federal government to Native American tribes. This responsibility extends beyond the DOI BIA to all agencies of the federal government. Treaties further establish tribes as sovereign nations and grant tribes rights to hunt, fish, and gather natural resources on lands ceded to the federal government. Ceded lands include both public and private ownerships. Meeting the trust responsibility and satisfying treaty rights requires environmental conditions both on and off reservations such that lands and waters are biologically diverse, productive, resilient to both natural and

human-caused disturbance, and capable of sustainably yielding desired resources and settings.

The policy of “Self-Determination” was passed in 1975 (Public Law 93-638). The Act called for increased involvement of tribal leadership in all decision-making, including forestry. Congress passed NIFRMA in 1990 to increase the tribal role in management of their forests consistent with objectives of self-determination. In 1994, Self-Determination was further modified by adding the “Self-Governance” amendments to the Act. The Self-Governance amendments provide for the transfer of Federal authority toward Indian authority over programs and services including forestry.

Achievement of Self-Governance is dependent on the right and responsibility of a tribe to make its own rules and policies and to negotiate such with others on matters affecting more than a single political entity, such as water, migratory animals, and other resources relevant to tribal wellbeing. However, Self-Determination and Self-Governance have not changed the way federal

environmental law is applied on Indian forest lands. The BIA and tribes must still fully comply with the NEPA, the ESA, the National Historic Preservation Act, and other federal laws.

Certain federal laws have been interpreted to apply to tribes and reservations beyond trust and treaty responsibilities, for example NEPA, ESA, and the Clean Water Act. These laws carry implementation costs and constraints on action, both on and off reservations. The trust responsibility means the federal government has a fiduciary responsibility to the health, safety, economic, educational, environmental, and cultural wellbeing of tribes and their members. Costs imposed but not funded constitute “unfunded mandates.” Those costs plus constraints unmitigated by federal action constitute an erosion of trust obligations. IFMATs



Replanting native trees on Nez Perce tribal land near Lapwai, Idaho. This project was part of American Forests' Global Re-leaf program. The Intertribal Timber Council and its members, including the Nez Perce Tribe, are active participants in numerous cooperative ventures involving government agencies and non-governmental organizations. Evergreen collection

I, II, and III have each observed tensions and conflicts between trust and treaty obligations and the costs and constraints imposed by other federal laws, rules, and policies. During the same time, tribes have made substantial progress in self-determination and self-governance empowering the capacity to more fully function as sovereign nations. Conflicts regularly arise in forest management, however, when federal regulations and unfunded mandates constrain self-determination and stewardship of natural resources.

Under federal statute, federal lands in the USDA National Forest System and the USDI Bureau of Land Management Public Lands are managed for sustained yields of multiple resource uses and values. In many cases in the West, it is obvious these lands no longer fulfill their multiple-use purposes and many are at high to very high risk from climate change, insects and fire. Congressional hearings and even legislation to address this situation indicate a looming crisis that will eventually compel Congressional action that will be far bolder than any legislation to date.

One example of this is the possibility of legislation to remove some two million acres of BLM administered Public Lands in western Oregon from BLM authority, transferring about half to the USDA Forest Service for management as reserves for old forest ecosystems and the other half to a trust to be managed for sustain-

able revenue production to support in part dependent counties. Could that trust institution be tribes in the vicinity of the transferred lands?

Whether such legislation will pass and receive Presidential approval remains to be seen. If it does become law, it could signal an opportunity to improve roles of other federal lands in sustaining desired environmental, economic and social outcomes the west. That option is to transfer federal lands that have already been developed with roads and managed for multiple uses for many decades back to the tribes that ceded those lands through treaties to be managed under policies, processes and practices determined by tribal authority. This may be too extreme to gain political traction, but it would certainly signal a truly serious federal government commitment to Self-Determination and Self-Governance by sovereign tribal nations.

If such a land transfer is too extreme for Congress and the administration to consider as part of addressing the many management challenges facing federal lands in the West, there are some variations that could achieve some of the desired outcomes, such as improved forest and rangeland resilience, tribal employment, enhanced tribal Self-Determination and Self-Governance, and improved economic contributions to communities in rural America.

I present two of those options for consideration.

Give tribes that demonstrate competence and capacity, preference in stewardship contracting. This is perhaps the least bold among the options but it is proving effective where tribes currently hold such contracts.

Develop co-management arrangements between tribes and federal agencies to share in the management and stewardship of culturally significant places and resources on ceded lands to better fulfill federal trust responsibilities. This would go far in engaging tribes in determining where and how land and resources would be managed on federal lands to meet tribal needs.

There are probably other options to use lands currently under federal authority to advance tribal self-determination and self-governance. It is IFMAT III's view that tribes deserve increased federal support for integrated forest management on reservations to fulfill the government's trust responsibility. It is my view that tribal forestry, under tribal policies, processes and practices could be extended to ceded lands to the benefit of ecosystem resilience and improved economic, environmental and social contributions to all communities depending on federal lands and resources, not merely to but certainly enhancing those of tribal communities.

IFMAT III: An Overview of the Assessment

By John Gordon, PhD., Co-chairman IFMAT III, Chairman, IFMAT I and II
John Sessions, PhD., Co-chairman, IFMAT III, Vice-chairman, IFMAT I and II

Public Law 101-630, known as the National Indian Forest Resources Management Act (NIFRMA), mandates an independent assessment of the state of Indian Forests and Indian forest management every ten years.

The assessment is unique in that it is the only regular independent assessment of forestry on any federal forest, whether held in trust for Indian peoples or citizens of the United States in general. The third such assessment, IFMAT III, was completed in June, 2013. Its major conclusion bears quoting:

“Twenty years after the first IFMAT assessment, notwithstanding the record of tribes improving management of their forests, we find that Indian forests remain underfunded compared to other federal forest investments, constrained by conflicting rules and regulations that hinder rather than help them achieve self-governance, and are increasingly threatened by inaction on the borders of their lands”.

In this overview of the assessment, we identify three major themes: Fire, Investment, and Transformation (FIT) as expressing both the hope and the reality of Tribal forestry.

FIRE is an inextricable part - many times the dominant part - of forests and their management by people. For centuries, tribes have recognized the intimate, local relationship between forests and fire and became expert at interpreting it and using it to perpetuate forests and their contributions to Indian life.

In many parts of the United States, particularly the dry West, where the largest reservations are and where climate change impacts can be expected to be large, fire signifies both the promise of Indian forestry, via its controlled use as a means of managing forest density and hazardous fuels, as well as the peril that Indians and their forests face when neigh-



A Navajo fire crew on tribal woodlands in Arizona. Dale Glenmore photo

boring forest owners allow their forests to become catastrophic fire hazards.

IFMAT III found that Indian forests are, for the most part, being managed in ways that reduce the likelihood that they will be lost to fire, often using beneficial fire to reduce woody debris and unwanted vegetation. It also found that, in general, forest health was better on reservation forests than on surrounding federal forests, which then pose a threat, through fire, insects and disease to Indian forests, and that this problem has become more acute over the 20 years since the first IFMAT assessment.

Perhaps the major recommendation of IFMAT III is that Indian leadership in forest management be extended to federal forests. This will require **substantial INVESTMENT** both to realize the full potential of the gains already shown by Indian forestry, and to extend these gains to adjacent federal lands. We see this shift as an investment in the truest sense of the word because it will generate positive returns in timber production, ecosystem

services, employment, and social and spiritual values.

IFMAT III estimates that with an additional \$100 million annually, forestry on reservations could be brought up to adequate stewardship standards, and would provide a clear, on-the-ground demonstration of how these new standards could be reached on other adjacent lands.

It is imperative that human capital be brought to a new standard as well. We estimate this will require creating and filling an additional 800 professional and technical positions, and an additional investment of \$13 million annually for career development and training.

In isolation these sound like large numbers, but in comparison with the benefits they will bring, and in light of the damage that will occur due to fire, insect and

disease loss if the investments are not made, the investments are not large, and are necessary, in any case, to fulfill the U.S. government's trust responsibility.

The **TRANSFORMATION** of tribal governance to self-determination and self-governance and toward economic self-sufficiency has allowed and stimulated the growth of tribal forestry and natural resource capacity, and reoriented forest goals to bring them into alignment with tribal vision. This transformation is very positive, but it cannot be sustained without proper and prompt attention to **FIRE** and **INVESTMENT**. Moreover, it will continue to be hampered as long as the Bureau of Indian Affairs (BIA) remains responsible for both the delivery of services to tribes (whether directly or through contracting and compacting) and is the agency that determines whether the services are adequate.

In IFMAT I we proposed that the Department of the Interior conclude an agreement with each forest tribe based on that tribe's vision and plans. These agree-



Aftermaths of two prescribed fires set to clear away logging debris. IFMAT III team member, Mark Rasmussen, took the top photo on Colville timberland in eastern Washington and Jim Petersen took the bottom photo on the Menominee reservation in northern Wisconsin.

ments would be overseen by an independent commission with the power to change the agreements as necessary, thus removing BIA from its dual “pitching and umpiring” role.

Findings of IFMAT III

Nearly all the trends seen from IFMAT I to IFMAT II are continued in the IFMAT III findings, and these include both positive and negative directions. We present a summary of the important findings of IFMAT III in relation to the previous IFMATs. A full discussion of all findings can be found in Volumes I and II (online at www.itcnet.org)

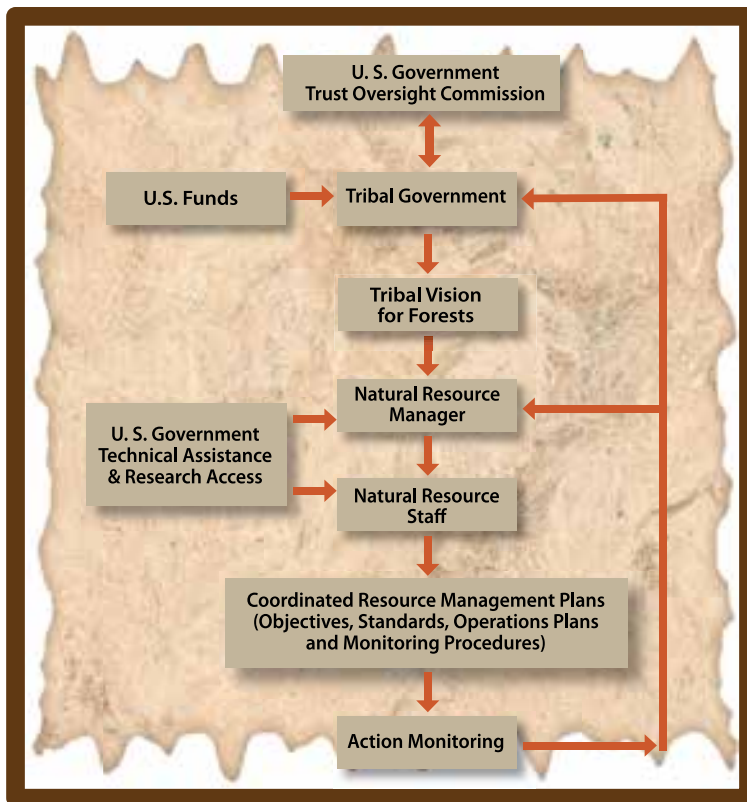
- **Tribal vision themes have remained consistent over the last 20 years.** Tribal members typically express a holistic view of the forest, and have consistently articulated the primary importance of caring for the forest and managing it in an integrated fashion.

- **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, under-burning, planting, and some commercial harvest.

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

- **Timber harvest levels and timber revenues have steadily dropped over the last two 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.

- **Current (2011) federal funding is well below forest management funding on adjacent federal, state and private lands.** Recurring program funding has been declining in real terms.



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

- **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.

- **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.

- **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.

- **Tribal self-determination and consequent contracting and compacting**

to carry out natural resource and forest management functions on reservations continues to increase.

At the same time, the effectiveness of Indian forest management is increasingly indicated by the data and by observer opinion.

- **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

acres 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.

- **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 forestry in each region. Extended rotations and uneven-age management dominate tribal forest practices. Several locations demonstrated the effective use of integrated resource management plans.

- **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.** We estimate that about 800 additional tribal and BIA personnel are needed to perform adequate minimum stewardship on Indian forests.

- **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.

- **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.** 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.

- **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.

- **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 only by timber sales or tribal contributions.

- **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.

- **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. The condition of the forest itself, over time, is the best measure of whether state-of-the-art management is being achieved.

- **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. The condition of the forest itself, over time, is the best measure of whether state-of-the-art management is being achieved.



The bow of a Tulip canoe, hollowed from a single log using fire and adzes. These cultural icons were the preferred form of transportation among the Tulip peoples along the Washington coastline. Mark Rasmussen photo

- **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.

- **Agencies such as the Forest Service and the Natural Resources Conservation Service (both U.S. Department of Agriculture agencies) are engaging increasingly with tribes.** The trust obligations of non-BIA agencies are often unfamiliar to them. The trust duty could be clarified through adoption of inter-agency agreements with the BIA.

Recommendations of IFMAT III

IFMAT was asked to recommend “any reforms and increased funding levels necessary to bring Indian forest land management programs to a state-of-the-art condition.” Below are IFMAT III’s overarching recommendations for change. Additional specific recommendations are contained in the full report.

- **The trust oversight recommendations of both previous IFMATs should**

be further developed and implemented before the next IFMAT review. When third party oversight is augmented by signed agreements between tribes and the DOI, based upon agreed obligations for both created through the planning process, the role of BIA can evolve out of the umpire/pitcher impasse toward that of technical service provider and facilitator of communication between Indian tribes and the federal government.

- **Indian forestry and wildfire funding should be increased by a minimum of \$113 million per year (73%) to provide a recurring funding base for forest land stewardship, timber production, and workforce development as envisioned by NIFRMA. Staffing should be increased by 800 professional and technical forestry positions.**

- **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.

- **A regularly recurring state-of-the-resource report, including a 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 Intertribal Timber Council.** An IFMAT-type study of the Native peoples of Alaska and their forests is long overdue and should be included in an enhanced data gathering and analysis effort.

To continue down the path leading to greater successes in Indian forestry, these recommended steps must be taken with a sense of urgency: restructuring the evaluation of trust oversight performance, ensuring adequate recurring funding geared to tribal goals, and 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, safety and productivity of the nation’s forests. We see an era of Indian forestry leadership dawning as tribes become increasingly visible as able and integrated forest stewards.

Forest Health-Wildland Fire Crisis: A Polish Perspective

By Jim Erickson, Fire Technical Specialist, Intertribal Timber Council

This June marked the 36th year that this Polish forester has been working for and with Native American Tribes. The first 25 years provided me the opportunity to work for the Colville Confederated Tribes as forester, silviculturist and Forestry Director. For the last 11 years, it has been my great privilege to work with more than 20 different tribes as the Fire Technical Specialist for the Intertribal Timber Council (ITC). Suffice it to say, I am very grateful to have been an active, hands-on land manager working with other talented tribal land managers.

Since the early eighties, the Colville Tribe has been using a wide array of available tools (e.g., saw-log and pulp harvest, biomass utilization, pre-commercial thinning, hazard fuel treatments and prescribe fire) to address forest health issues. Today these lands stand as islands of adaptability compared against neighboring forests, especially in contrast to the Okanogan-Wenatchee and Colville National Forests. Tribal lands are healthier and more resilient than federal forests, and they provide much needed and cherished jobs for rural communities (tribal and others).

I share this history because I believe it offers a much-needed alternative to addressing the crisis facing our nation's federal forests. The National Cohesive Wildland Fire Strategy currently being developed clearly identifies over-stocked and diseased forests as a primary cause for the escalating forest health-wildland fire crisis that grips much of the West. Our nation is fortunate that states, private landowners and tribes promptly treat the sources of forest health problems in order to sustain healthy, resilient and fire-adapted ecosystems.

Unfortunately national forest management is gridlocked by special interests, complicated federal laws, conflicting policies, and inconsistent court imposed requirements. Instead of a consistent flow of well-planned projects implemented on a reliable schedule, our national forests are compelled to invest a large proportion of their resources to planning, analysis, appeals and lawsuits. Federal resource managers have lost their ability to manage due to the legal quagmire of spell out



Wildfire rages in western Montana. Evergreen collection

NEPA, ESA, EAJA, and judicial review requirements.

The resulting lack of active management of federal forests coupled with aggressive fire suppression over the past 100 years has altered landscapes resulting in overstocked, insect infested and disease-riddled forests, woodlands and grasslands. These lands present significant fire and disease risks to other landowners and demand attention and respect. Collectively our nation needs to find a workable solution to re-engage our federal partners in addressing this federal land crisis. Standing by and watching ecosystems degrade isn't feasible for those who live closest to the land and face the risks.

Lack of management on federal forests is having tremendous undesirable impacts to reservations and other neighboring lands. Wildfires burning from federal to tribal lands have caused significant damage to tribal resources. Application of the recent "let burn" philosophy practiced by some federal agencies often proves disastrous under current conditions created by historic aggressive fire suppression policies on our nation's forests. The Santa Clara Pueblo alone has experienced three large wildfires (Oso fire of 1998, the Cerro Grande Fire of 2000, and the Las Conchas Fire of 2011) burning from federal lands onto the Pueblo, leaving over 2/3 of their drainage denuded and exposed to monsoonal flooding, soil erosion and

water quality degradation. The extreme fire behavior originating on overstocked federal lands leads to larger and more intense wildfires. These fires burned more intensely than historic fires due fire exclusion and lack of active resource management.

So often when I visit National Forests I see lots of federal dollars going to planning and analysis, while too little goes to implementation of much needed treatments. With the scale of the forest health and wildland fire crisis facing our nation, current small-scale treatments are not the solution. Large scale, landscape treatments must become the norm and not the exception. Increased investment of federal tax dollars during declining federal budget cannot be the sole answer to this crisis. Stumpage payments from timber sales can and should help cover much needed land treatments while creating healthy rural economies and communities, healthy resilient ecosystems, and reduce the risk of fire events to neighboring lands and firefighters. Treating overstocked forest and woodlands will lead to less intense, more natural fire regimes, regimes similar to how Tribes managed fire some 150 years ago.

It is appropriate to ask "who might be best qualified to manage federal lands". Jim Petersen of the Evergreen Foundation offered one option during his June 2007 presentation at the Intertribal Timber Symposium in Polson, Montana. He asked if it might not be time for Congress to give our nation's federal-owned forests back to the Indians who were their first owners. I believe this question is still merits an answer.

The 2013 Indian Forest Management Assessment report (IFMAT III) supports this question by suggesting - for the second time in ten years - that tribal forests can serve as models for active and sustainable management of forest and woodland ecosystems. I believe it is time to give Tribes that border National Forests the opportunity to assume management of neighboring National Forests. The recently completed review of implementation of the Tribal Forest Protection Act (TFPA - PL 108-278) identified impediments to more effective use of the TFPA



300-foot flame lengths rise above a firestorm in central Idaho. Evergreen collection



Santa Clara Creek one year after the 2011 Las Conchas Fire burned more than 150,000 acres of forest and woodland in New Mexico, destroying more than 45 percent of the Santa Clara Pueblo watershed. Jim Erickson photo

to expand tribal expertise and management approaches to neighboring national forests. The ITC and the Forest Service (FS) will soon develop strategies to implement the recommendations.

When considering the value of increased tribal influence across landscapes it is important to recognize the evidence supporting such action. Tribes know these lands through their local histories going back thousands of years. Their connection to the land and the ability to incorporate traditional ecological knowledge with modern science provides a sound, balanced strategy to develop and maintain healthy, adaptable forest ecosystems. Traditionally, fire was one of the most important means for Tribes to maintain the health of the land. Tribes understand and support the use of prescribed fire as a valuable tool for maintaining fire-dependent ecosystems. They still use fire, but also incorporate other measures, such as thinning and harvest, in their management strategies to help maintain ecological health.

Tribes recognize the need to tailor management approaches to conditions on the land, the resources at risk, and

values of local communities. Tribes have adapted proactively to the same policies that handcuff our federal partners. When federal policy banned Tribes from practicing their traditional burning strategies, Tribes adapted to alternative means to treat the land and still maintain balanced objectives by operating modern, innovative and comprehensive natural resource programs premised on connectedness among the land, resources, and people. This holistic approach, strives to simultaneously sustain economic, ecological, and cultural values, our “triple bottom line.” Tribes also maintain the critical personnel and expertise to conduct timber sale activities, something quickly being lost by the FS. Tribes can bring this special skill to bear in treating our federal forests. Treating the land must be a national priority and Tribes offer a great management alternative to the status quo.

Ever-escalating wildland fire suppression costs are consuming federal resource and fire budgets and dominating agency agendas. The federal strategy of funding fire suppression first comes at the expense of preventive treatment. This is shortsighted because it effectively dooms

forests to increasing frequently and more destructive fires that, in turn, increase risk to public and fire fighter health and safety, devastate our forests, economies, soils, water, fish, wildlife, and the traditional foods and medicines essential to sustain tribal cultures and ways of life.

Before we can move forward on a more united front we must acknowledge that preparedness, fuel treatments and prevention are essential components of a sound fire management strategy, possibly more important than suppression. If we are to reach a long term, sustainable strategy we must rebalance fire and resource funding. If the current wildland fire management funding strategies and procedures are not changed, suppression costs will continue their dramatic rise. Current proposed reductions to preparedness and fuels will most likely lead to even greater suppression costs.

The time for a different strategy is upon us. Perhaps it is the time to engage Tribes in resolving the wildfire issues that confront our nation. Who better than our nation’s original land managers is better suited for this challenge of restoring the health to our nation’s forests?



A Columbia Helicopters Boeing 107 rises from a deep canyon in northern Arizona with a full load of ponderosa pine salvaged logged from White Mountain Apache land devastated by the 2002 Rodeo-Chediski Fire. The half-million acre conflagration destroyed nearly 250,000 acres of tribal timberland. Jim Petersen photo

Federal Laws, Regulations and Court Rulings Impede Effective Landscape-Scale Forest Management

By Jim Erickson, Technical Specialist, Intertribal Timber Council

IFMAT III, the third independent assessment of the state of forest management in Indian Country, is complete. Once again, the assessment team, which was headed by two distinguished forest scientists, calls on the public and members of Congress to consider using tribal forestry as a model for resolving conflicts that are impeding effective federal forest management.

Those of us who have worked with tribes in their forests – in my case for almost 36 years – find nothing surprising or opportunistic in IFMAT III's main message.

Although most Americans don't know it, tribes have been actively managing their lands for thousands of years. Archeological and cultural evidence makes it very clear that they bring an enormous amount of experiential learning to the table. Add modern science to the mix – as tribes have done – and you have a set of tools that makes it possible for tribes to balance economic, cultural, spiritual, historic and environmental values in ways that cannot be achieved by simply allowing “nature” to take its course in federal forests that hold many values that Americans treasure.

I never cease to be amazed by how much tribes accomplish with far less funding than Congress makes available to the U.S. Forest Service and the Bureau of Land Management. I often wonder what else tribes could accomplish on their lands if Congress funded their forestry programs at the same per acre levels that they fund the USFS and the BLM. You can be certain that their existing stewardship programs, which focus treating a host of health related problems that invite insects, diseases and wildfire, would be much larger.

What makes Indian-style forestry possible? Many believe tribes get “a pass” where federal environmental laws are concerned. This isn't true. Quite the contrary, tribal forestry meets or exceeds federal regulations aimed at protecting fish and wildlife habitat and air and water quality.

So how do Indian tribes do what the Forest Service and the BLM seem unable to do? Foremost, tribes know their constituents – all of whom live on the land they call “home.” There is no separation of home from homeland. Tribes maintain

close cultural, spiritual, ecological and economic ties to their lands. By contrast, most Americans are three or four generations removed from the lands that their ancestors once worked for their livelihoods.

Second, tribes manage their lands for future generations, not a short-term bottom line. It is commonly heard that they manage for the seventh generation in the future. This translates into a “do no harm” land ethic that, in turn, leads to an emphasis on managing for desired future forest conditions. By contrast, federal agencies are focused on eliminating undesirable forest conditions that are a direct result of a failure to ask what future conditions the public desires. I'll wager that the wildfire crisis currently sweeping the country is not on anyone's list of desired outcomes.

I remember a very powerful lesson that I learned while working for the Colville Tribe in northeast Washington State. After the tribe began exerting its sovereignty, tribal foresters made the transition from marking trees scheduled for harvest to marking trees they wanted to save as seed sources or for some other future possibility. Trees that did not meet desired future criteria were then available for harvest. I know this transition sounds too simplistic to be of much value, but it completely changed the way tribal foresters looked at forests in their care. Believe me, the resulting improvements in forest health and diversity was significant.

I think there is a third reason why tribes are such effective forest stewards. Put simply, they are able to make timely decisions. Most foresters learn to expect the unexpected. Insects, diseases, fires, windstorms, floods and earthquakes can alter the best laid management plans in a heartbeat. Tribes work very hard to capture economic values created by unforeseen natural events. Timber that is damaged or killed is quickly salvaged, processed and sold in the marketplace.

Unfortunately, such salvage is rarely an option on neighboring federal lands, particularly Forest Service lands. The process of preparing a salvage timber sale or a thinning in diseased timber can take years, not counting predictable appeals and litigation, which kill many

well-planned projects.

This situation has become very worrisome for tribes that share a nearly 3,000 mile long border with the Forest Service. Where this border strung together in a single line, it would be two-thirds as long as the U.S.-Canadian border. Very little in the way of shared management planning or activities occurs along this 3,000 mile border, but the trained eye can see the difference. Timber stands on the Indian side are healthy and resilient, while forests on the Forest Service side are often diseased and dying – but one careless match or lightning strike away from disaster.

In 2004, Congress granted tribes the authority to make proposals for treatment of National Forest and BLM lands that pose risks to adjacent tribal lands and resources. In many ways, the Tribal Forest Protection Act [TFPA] mimics the Good Neighbor Authority being piloted in Colorado and Utah. I like the name, “Good Neighbor Authority” because it speaks to the importance of landowners respecting the rights and concerns of neighboring landowners.

Unfortunately, the aptly named Tribal Forest Protection Act has fallen far short of congressional intent. In the nine years since implementation, the Forest Service has only accepted 11 tribal proposals. Of these, just six have reached the implementation stage, and fewer than 20,000 acres have been treated. With millions of National Forest acres needing treatment, the current pace is not sufficient to stay abreast of annual tree mortality, much less get ahead of it. In several National Forests that border tribal forests, annual mortality now exceeds annual growth, hardly a sustainable or ecologically sound forest condition. Tribes know this, and do not want environmental problems born of management neglect spreading into their well-managed forests.

One of the most disappointing TFPA proposals has been the 2005 Tule River plan to treat fuels at the Sequoia National Monument, an area designed by Congress to safeguard giant sequoias tribes consider sacred. Eight years hence, they still wait for federal approval to proceed. Even if a decision is reached, the fear of appeals and litigation still hang over this

project. Will these national treasures go up in smoke before a decision is made?

Why are Forest Service decisions so slow in coming and what needs to happen to speed planning and implementation? The answer lies in unraveling the maze of policy, legislation, Presidential declarations, congressional designations, and court-imposed restrictions placed on Forest Service land management planning. Congress created this mess, and only Congress can fix it.

The misuse and abuse of three federal laws are at the core of the problem: the National Environmental Policy Act (NEPA), the Endangered Species Act (ESA), and the Equal Access to Justice Act (EAJA). Taken together, they form a legal firewall [no pun intended] that blocks active, science-based land management.

Forest Service employees no longer have time – some say the will – to manage forest resources. They have been forced into a socio-political ring where they spend most of their time on studies, appeals and litigation. These distractions preclude the implementation of sound, ecological resource management and have doomed much of our federal lands to heavily overstocked stands subject to insect and disease epidemics and intense stand replacing wildfires. Many wildfires today are much larger and more intense than any time in history, destroying soils, water and sensitive species, the core values we are entrusted to protect.

To make matters worse, our National Forests are being systematically classified into restrictive special use areas (roadless, recreation, wilderness, and other set asides.) that limit the application of scientifically sound treatments that are essential to protecting natural resources the public values.

To further complicate this fast deteriorating situation, federal personnel



Beetle-killed lodgepole pine and western larch east of Grangeville in northern Idaho's Nez Perce National Forest, amid a fishery that is culturally and economically vital to the Nez Perce Tribe. Jim Petersen photo

policies reward staff to move frequently in association with career advancement. The resulting job transfers undermine experiential learning [a core principle in Indian Country] and disrupt agency relationships with rural communities that are left to struggle with economic and ecological problems they cannot solve without federal participation.

Minus new mission statements, goals, objectives, strategies and tactics, our National Forests are doomed. We are surrounded by evidence of this fact. Nature is doing what Congress has thus far refused to do – cleaning up the mess - and I don't think the public is going to like the result. A better approach would have Congress

bless tribal forestry – at least along the 3,000 mile long border that joins tribal forests to diseased and dying National Forests.

The National Cohesive Wildland Fire Strategy Phase III Risk Analysis makes clear the fact that treating fuels – removing large stands of dead and dying trees in overgrown forests - is the only humanly possible way to improve resiliency in dry site mixed conifer forests that are so prevalent throughout the West.

Solutions to this crisis will take the collective will and creativity of all wildland fire stakeholders, including tribes. We must overcome ingrained policies and public misconceptions that are crippling our ability to care for federal forests, especially as we cope with disease and drought-related problems that many are attributing to climate change.

While I don't presume to know all the answers, I will offer some suggestions on how to break the current gridlock:

Return decision-making authority to those most impacted and living closest to the land: tribes and rural communities. Take away the veto power currently provided

by appeals and litigation.

- Remove the regional and national oversight imposed by agencies, courts and special interest groups. None of these live directly with the outcomes of their actions or inactions.
- Look to Indian Country, states and private landowners as examples and potential stewards of federal lands.
- Create rural economies using resources currently available on federal lands to help cover land treatment costs.
- Finding proactive solutions to treating our federal lands will provide much needed benefits to both land owners adjacent to federal lands and our treasured landscapes.



Investment



Indian Forestry: Still Underfunded and Understaffed But “Making Things Work” in the Woods

By John Sessions, PhD, Co-Chairman, IFMAT III, Vice-chairman, IFMAT I and II; and Adrian Leighton, Chair, Natural Resources Department, Salish Kootenai College

The National Indian Forest Resources Management Act [NIFRMA] requires that recommendations be made for bringing Indian forest land management programs to a “state-of-the-art” condition. But what constitutes a state-of-the-art forest management program?

The Indian Forest Management Assessment Team [IFMAT III] concluded that ultimately, state-of-the-art forestry in Indian Country rests in a combination of people and practices that most effectively achieves, or moves most rapidly toward, the tribal vision for their forest. In a general sense, state-of-the-art effectiveness employs a functional vision, the best available technology and current science, and enough skilled people.

The various management goals of many tribes embrace forest stewardship through active management. In general, tribes desire forest protection and demonstrate through their management plans and actions that they are willing to create and maintain resilient, sustainable forests.

During the 20 years spanning the three IFMAT assessments, Indian forestry has been underfunded and under-staffed compared to federal and state land management agencies and private land managers. Federal funding for forest management on Indian forest lands held in trust by the federal government is about \$2.82 per acre (2011). This is about one-third the funding per acre the federal government invests in the National Forests and much less than states invest in their forest lands, both in the East and West (Table 1).

In real terms, total federal funding for Indian forests has fallen 23% since IFMAT I (1991) while Indian forest land in trust has grown 18%. Investments in Indian forests in reductions in hazardous fuels and wildfire preparedness are also fractions of national forest investments (Table 2).

Management Funding

Forest Management Funding	Dollars per Acre
BIA allocation to tribes	\$ 2.82
Eastern states	\$ 5.65
Western states	\$20.46
National forests	\$ 8.57

Table 1

2011

Table 1. Forest management funding by states and national forests as compared to BIA allocations to tribes in 2011.

Wildfire Preparedness & Hazardous Fuel Reduction

Table 2

	Wildfire Preparedness	Hazardous Fuel Reduction
National Forests	\$3.71/acre	\$1.45/acre
Bureau of Indian Affairs	\$.94/acre	\$.71/acre

2011

IFMAT examined the cost of forest stewardship on similar National Forest and Bureau of Land Management lands and estimated that the cost of forest stewardship on commercial forest lands was about \$8.64 per acre including adjustments for forest size (scale of management) and \$1.40 per acre for noncommercial forest lands.

Including the cost of hazardous fuel reduction treatments and wildfire preparedness, IFMAT estimated the cost of forest stewardship on Indian lands to

be about \$220 million dollars to provide basic stewardship functions of forest administration, inventory and planning, protection, restoration, and transportation management.

Additionally IFMAT estimated the incremental cost of commercial timber sale preparation and administration at \$40 per thousand board feet to \$80 per thousand board feet for tribes engaging commercial timber production. For the current harvest level in the forest management plans of 564 million board feet, IFMAT

recommended a minimum annual investment of \$254 million. Tribes received \$154 million in 2011

To compare management costs on Indian forests with larger forest units of National Forests adjustments must be made for the scale of operations. Administrative units on the national forests are often over 500,000 acres in size. Of the 100 largest forest owning tribes, about 70 percent of tribes have less than

leadership. More than half of the forestry and wildfire management staff are over the age of 50 and fewer than two percent are under the age of 30 (Figure 1).

Funding is cited as the major obstacle for increasing staffing, but challenges in recruiting and retaining employees in remote locations, relatively lower pay, smaller organizations, and lengthy federal hiring procedures also contribute. IFMAT repeatedly heard from tribes that a signif-

A short-fall of almost 800 professional and technical forestry and wildfire staff was identified at local, regional, and central office levels. Lengthy employee processing time by human resources departments appears to be a widespread problem at all levels of BIA forestry and fire organizations. Delays of up to one year in filling funded but vacant positions are common, impacting delivery of all program aspects from forest management planning to project implementation.

Future challenges to maintaining natural resource leadership include retirement incentive programs, consolidation of BIA agency offices (streamlining) and overall federal budget policy (sequestration). Low budgets and staff shortages have led to chronically low investments in continuing education and professional training.

IFMAT I found that BIA invests approximately three percent of personnel costs in continuing education and professional training as compared to 9-12 percent invested by USDA Forest Service. IFMAT III estimates about \$13 million per year would be needed to bring staff investments in continuing education and professional training to parity with the USDA at full staffing levels.

In spite of funding and staffing challenges, IFMAT III members were impressed by the new cohort of young, energetic, empowered Indian foresters, who, in spite of institutional problems, are making things work in the woods.

Forestry and Wildfire Management Staffing 1991–2011

Table 3

	1991	2001	2011	% Change 2001-2011	% Change 1991-2011
BIA	1492	1206	734	-39%	-51%
Tribal	775	1277	1239	- 3%	60%
TOTAL	2267	2483	1973	-21%	-13%

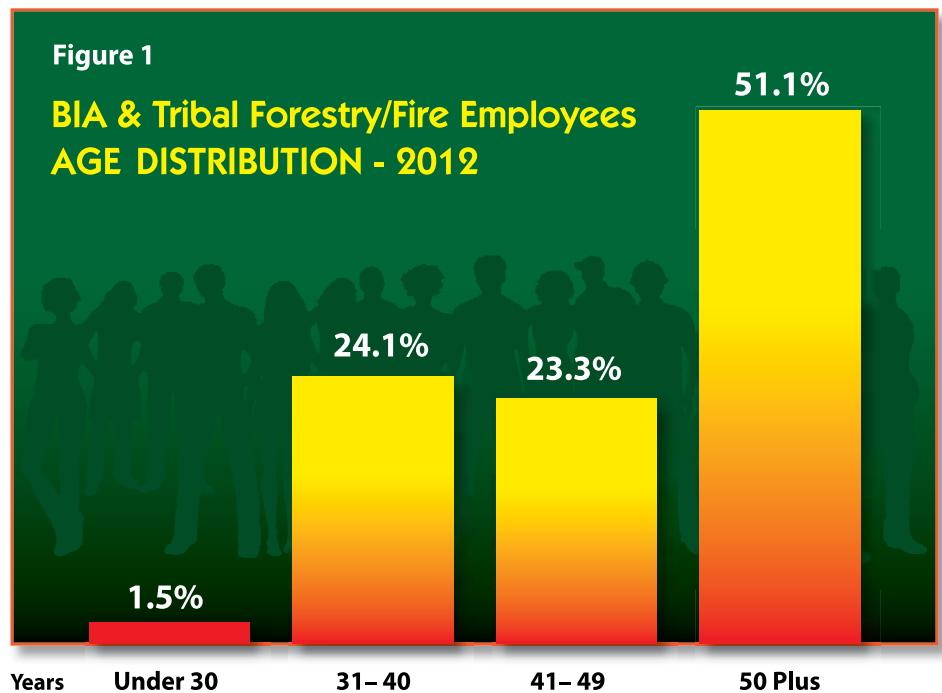
50,000 acres and more than 50 percent have less than 25,000 acres each. Taking into account the size of Indian forests, IFMAT estimates the average overall cost of managing smaller forest units in Indian Country is more than 50% higher than for large federal management units. This creates an even greater disparity between federal allocations to Indian trust land and national forests.

Combined Bureau of Indian Affairs (BIA) and tribal staffing for forestry and wildfire has decreased 13 percent below 1991 levels and even more steeply during the last ten years (Table 3). Tribes are directly managing more of the forestry operations on their lands. The BIA continues to provide direct service to more than half of the tribes, but BIA employees are increasingly in support and oversight roles.

During their site visits, IFMAT members observed that both tribes and the BIA had dedicated staffs composed of a mix of tribal members and non-Indian professionals. Overall, the percentage of foresters that are Native American has increased from 22 percent in 1991 to 48 percent in 2011.

Foresters in Indian country manage more land per person than their counterparts in federal and state agencies and in private companies. On average, there is one professional forester per 30,000 acres in Indian country. The age of BIA and tribal workforce challenges future

significant amount of staff time was being spent writing and managing grants to compensate for the short-fall in funding. Tribal and BIA staff assessments have indicated the greatest staffing shortages are in the areas of forest protection (36 percent), forest management and inventory planning (21 percent), sales (17 percent) and forest development (10 percent).



“So, What About The Money?”

Mark Phillips, ITC Information and Research Specialist, Edwards Associates, Inc. Portland, Oregon

The just completed 2013 Indian Forest Management Assessment Team (IFMAT III) report has determined that a minimum increase of \$100 million is needed for base level funding for Indian forestry to provide a level of forest stewardship and timber production consistent with federal trust obligations, that staffing levels need to be increased by 800 positions, and that an additional \$12.7 million is needed per year to maintain workforce capabilities. Section 312 of the National Indian Forest Resources Management Act [NIFRMA, Pub. L. 101-630, Title III] requires that every 10 years, the Secretary of the Interior provides for the conduct of an independent assessment of Indian forests and forestry. Subsection (2) (A) requires each assessment to evaluate the level of funding for Indian forest land compared with similar Federal and private forest lands.

IFMAT reports extensively discuss the federal government's unique trust responsibility to tribes for managing their forest resources, including examining the government's adequacy of funding in the context of the trust. The federal trust responsibility to tribes is much like a common law trust, with the tribes as beneficiaries being financially compensable for federal failures to carry out the fiduciary obligations.

Completed IFMAT reports are delivered to the Secretary of the Interior and the relevant Congressional committees on Capitol Hill. In addition, extensive Administration and Congressional briefings are conducted by senior IFMAT members. Congressional committee hearings on IFMAT III are anticipated. In the reports, briefings and hearings, the funding disparity has been highlighted and undisputed.

Yet why hasn't BIA funding for management of tribal forestlands been substantially increased over the 20 years since IFMAT I?

To begin, let's examine the federal trust responsibility. It does, in fact, have teeth. But it has been left up to the tribes rather than the U.S. to ensure that the trust is honored and fulfilled. In 2012, the federal government, led by the Department

of Justice, spent a billion dollars to settle more than fifty tribal law suits brought for long-term federal trust mismanagement of tribal financial and natural resources. While the settlements were confidential and the settlement amounts unattributed to specific resources, tribal forests were often a major element in the suits, and the settlements implicitly acknowledge the federal government's failure to provide the funding needed to fulfill its fiduciary obligations.

One would think that the federal payment of a billion dollars to settle tribal trust mismanagement claims would get senior Administration budget personnel's attention, perhaps even qualifying as a crisis. Yet payment of a billion dollars by the U.S. Department of Justice hasn't significantly increased the Interior Department BIA Natural Resources budget. Perhaps there isn't much budget coordination between Interior and the Department of Justice, or perhaps, with the law suits just settled, it was determined that significant funding increases for tribal trust natural resources can be forestalled, rolling the dice against further tribal trust mismanagement lawsuits at some point in the distant future. It is a question for which there is no readily available answer.

When the Administration released its FY 2014 proposed budget, it made no mention of the need to bolster trust management and funding. For Forestry, the BIA request for a \$4.3 million dollar net increase for planning and climate change activities is welcome as a reversal of years of stagnant or declining BIA Forestry funding, but is nowhere near the \$100 million increase identified in IFMAT III as needed to fulfill federal trust obligations.

The Administration's overall budget development process has not historically – or currently – been particularly responsive to providing even adequate support for the government's trust obligations for tribal natural resources. The federal budget development process for the Interior Department and BIA makes it difficult to obtain significant increases in most BIA programs. The BIA's \$2.37 billion program budget, based on historical funding levels, is notoriously inadequate and riddled

with inequities. It has proven resistant to being reorganized, and when big increases are made, they tend to be in response to a specific crisis. Because the BIA budget also supports many social aspects of life in Indian Country [e.g., education, community services, and public safety], funding for natural resources often suffers as tribes attempt to provide for immediate human needs.

Above the BIA's own budgeting review process, its funding priorities and requests for budget increases must respond to two senior and increasingly distant budgeting offices: the Office of Policy, Management and Budget within the Department of the Interior, which controls the agency's overall budget, and the Office of Management and Budget at the White House, which controls the entire federal budget. At each of these additional levels of review and control, the BIA budget – and its Forestry budget – diminish in relative significance as competition for funding within budget limits set by OMB come into play.

Most decisions and revisions resulting from BIA and Interior Departmental consultation with tribes on budget preferences are prohibited from being shared, making the process opaque and insulated. Decision-making aspects of the Administration's budget formulation process, from initial BIA proposals up to the release of the final official request in the President's budget, are kept secret within the Administration, embargoed from being shared.

Within this entire process, getting a \$100 million increase, or even, say, a \$40 million increase, for BIA Forestry recognized, prioritized, and then defended up through review and its fiscal limitations is, to say the least, a formidable challenge.

The Administration submits its budget to Congress for consideration, potential modification and enactment. After the Administration's rather closed budget development process, Congress offers a more open opportunity to comment on and seek changes in the budget.

Over at least the past forty years, tribes have been actively engaged in House and Senate appropriations for the Interior, Environment and Related Agencies, testifying

before the Subcommittees and working with Congressional offices. Although results have varied over the years, the effort has usually been worthwhile. Congress has, from time to time, significantly increased BIA Forestry appropriations, but more recently, as difficult fiscal issues have become a principal Congressional divide, the focus has turned to efforts to stave off or limit funding reductions. That is particularly the case this year for FY 2014.

For FY 2014, the Republican-controlled House Appropriations Subcommittee for Interior, Environment and Related Agencies has issued a very contentious \$24.3 billion draft bill that, to comply with House budget resolution spending guidelines, is 19% below FY 2013 and 25% below FY 2010. More than 20 programs are proposed for elimination, and EPA is cut by 34%. BIA program funding, which the Subcommittee has sought to protect in past years, is down from \$2.37

billion (pre-sequester) to \$2.16 billion. As of this writing, individual BIA program amounts, including Forestry, have not been spelled out, but are almost certainly below FY 2013.

The Democratically-controlled Senate has also issued its draft FY 2014 Interior appropriations bill at \$30.8 billion, \$6.5 billion over the House. BIA Forestry is recommended at its requested amount, including the \$4.3 million increase. But Senate Republicans have blocked the first FY 2014 appropriations bill (Transportation and Housing) that came to the floor, asserting it is too expensive, spelling difficulty for the Interior and other domestic appropriations bills, should they even get that far. For FY 2014, Congressional appropriations appear once again to have



With federal budget cuts looming in early February 2013, Northwest Indian College students headed for the nation's capital to ask lawmakers to support tribal education budgets. Evergreen collection

come to loggerheads and are stalling. A continuing resolution extending FY 2013 amounts, plus perhaps a few reductions and then the likely next round of the sequester, appears to be more probable for FY 2014. And with party positions on spending getting firmer rather than contemplating compromise, flat or reduced funding seems probable over the next couple of years as well. Certainly, Congress is unlikely to take the initiative to increase BIA Forestry spending by \$100 million or some other significantly helpful amount.

While increases in mainstream BIA trust funding are not encouraging, other ancillary activities may provide paths for some continuing development of Indian forestry. Examples include collaborative forest management efforts like the Anchor

Forest pilot program, where tribal and other forest owners work together on a landscape basis to provide the active management needed to support forest and community infrastructure and healthy forests. Or Tribal Forest Protection Act projects, where tribes perform forest management activities for neighboring federal agencies like the Forest Service and BLM.

Climate change is another example where tribal forests may be engaged in evaluation and adaptation projects that are cooperatively supported throughout the Interior Department. And there is wildland fire. Fires are growing in size, number and intensity; they are immediately catastrophic and exceptionally expensive. To help prevent or diminish wildland fires, there is now great focus on and support for, particularly in Congress, the reduction of hazardous forest fuels, such as dead or dying timber, small

and densely spaced trees and bushes. Tribes and the BIA actively participate in this program, and it is an increasingly important source of support for improving the fire resiliency and overall health of Indian trust forests.

For at least the relatively near-term future, prospects for significant funding increases as recommended by IFMAT III appear dim. That is discouraging, but it is not new or, in this fiscal climate, particularly unexpected. Until the federal government does step forward to meet its trust obligations, tribes will manage their forests as best they can, challenge the U.S. when they must, and continue their exploration of innovative and diverse management avenues across a broadening forest landscape.

No Mill, No Market, No Forest

By Jim Petersen, Founder, the Evergreen Foundation

“Stumps on the hill, money in the till!”

Sounds crass, I know, but the first of three bedrock truths about owning timberland is that if you can't periodically monetize your investment in land and trees by harvesting your mature timber, you will eventually go broke.

The second truth is that if you don't own a modern saw mill, or there isn't one nearby that is willing to buy your timber when you are ready to harvest, your trees are worthless, you won't be able to recover your investment, and you will eventually go broke.

And the third truth is that if you go broke, you can kiss your healthy and productive forest good bye. And your capital loss – which could easily top \$1,000 per acre – will only be the beginning of your nightmare. Should a stand-replacing wildfire sweep through your untended forest, you might well lose the nutrient rich organic soil in which seeds germinate and hand-planted seedlings take root. It will take nature at least a century to replace what the fire incinerated in a matter of hours.

Here's hoping you find new investment capital before fire – or insect or disease infestations that often precede a big fire – strikes your bankrupt forest. But if you are an Indian tribe, the chances that someone will ride to your rescue lie somewhere between slim and none. No wonder tribes that own and manage timberland across the United States are so nervous about the dead and dying federal forests [read firetraps] that lie next door to their quite well managed forests. Back to the sawmill equation.

West of the Cascades in Oregon and Washington, there remains sufficient wood manufacturing infrastructure to buy, process and market tribal timber, but east of the Cascades – and across most of the rural West, hundreds of family-owned sawmills that bought and processed tribal timber have gone out of business over the last 20 years, depriving many tribes with harvestable timber of the markets they need to monetize their investment. As a



John Katchia, Sr. former Chief Executive Officer of Warm Springs Forest Products Industries inspects some ponderosa pine logs ready for transport to the tribe's sawmill at Warm Springs, Oregon. The mill cuts a wide variety of dimension lumber products for domestic and export markets. The tribe's diversified business portfolio includes some of the finest actively managed forests in the West. IFMAT III team member, Vincent Corrao, took this photograph.

result, logs must be hauled to more distant mills, eating substantially into profits.

The 2002 Rodeo-Chediski Fire, which destroyed about 500,000 acres of timberland in northern Arizona, was an economic disaster for the White Mountain Apache tribe, which lost about 250,000 acres of very valuable ponderosa pine, despite the fact that the tribe actually owns and operates a sawmill at White River. Why? Because the mill wasn't large enough to handle the volume lost in the fire, and there were no other saw mills remaining in northern Arizona that could help process the burnt logs. As a result, the tribe was forced to sell almost all of its salvageable pine to Sierra Pacific, which railed the logs to its mills in California. The Union Pacific Railroad made a small fortune and the tribe got next to nothing.

Comparatively speaking, few Indian tribes own saw mills. The cost of admission – about \$70 million for a new, state-of-the-art mill – far exceeds the investment resources available to most tribes. The Mescalero Apache tribe in New Mexico recently rebuilt part of its mill with a U.S. Forest Service grant, but no other tribes seem willing or able to take the plunge. Skilled labor is often at a premium on reservations, many of which are so distant from markets that transportation costs become a limiting factor.

Some tribes also hang on to their

less efficient, labor intensive mills because tribal employment is a priority. Witness the White Mountain Apache mill, which is more than 40 years old. It has gone through several upgrades, including adding a beautiful re-saw operation. But nursing an old primary breakdown mill from one fix to the next is costly. You spend a lot of time working your way around problems you can't afford to fix permanently. It's exasperating, especially when customers tell you that, while they really like the quality of your lumber, they can't afford to wait any longer for the shipment you promised them last week.

In a perfect world, you'd junk the old mill and build a new high speed mill so that you could compete against the big guys. But the world is not perfect, so you remind yourself – again – that one of the main reasons you got into the sawmill business in the first place was so you could employ tribal members who otherwise might not have a job.

You also remind yourself that speed isn't everything, especially if you are milling appearance grade lumber cut from big trees that, by their very nature, demand that you saw a little slower so none of the value that is so often hidden deep inside old logs is reduced to sawdust before you find it. Such trees are still common in tribal forests because Indians aren't comfortable with forestry's industrial model. There is Wall Street Time, which is controlled by bean counters, and then there Indian Time, which marks the seasons of the moon.

Although there are some fine Indian-owned saw mills across the country, most of the 305 tribes that own timberland sell their logs to non-Indian mills. Mills are more common among the tribes that own 10,000 or more acres and harvest a million or more board feet of timber annually. Among them: the Warm Springs tribe in Oregon, the Yakama tribe in central Washington, the Colville tribe in eastern Washington and the Menominee tribe in Wisconsin.

Tribes that don't own mills are at the mercy of economic factors far beyond their control, most notably the global economy. The recent near-Depression devastated the nation's homebuilding industry and, in turn, the wood processing industry that services homebuilders. Even the best tribal sawmills were idled for a time because there simply wasn't a viable market for their products. Deep pocketed lumbermen in Oregon and Washington operated at a loss for several years in order to hold their employees and their places in coveted markets, but cash poor tribes simply fell further behind.



A load of logs arrives at the Mescalero Apache tribal mill near Ruidoso, New Mexico. The tribe's forests draw trophy elk hunters from all over the world. Jim Petersen photo

Indians don't see their mills – or their timberlands – as mere capital investments. They see them as training grounds for tribal members who want to pursue careers in wood processing, logging, forest management or any of the related forest sciences. In Indian Country, it is the prospect of meaningful employment that also serves as the glue that holds the culture together. Where the cultural fabric has been shredded by uncontrollable economic loss, young men and women entering adulthood are forced to leave their homeland – often for good – to find work.

It is the symbiotic relationship between healthy, well-managed forests and an array of modern and efficient wood processing facilities and markets that sustains communities and cultures, which is why I have long believed that where no mill exists, there is no market for wood products, and where there are no markets, there are few if any opportunities for monetizing the value of timber. And if timber values cannot be monetized from time to time, there is no money for future management or employment, no matter how worthy your management objective appears on paper.

Tribal forest management objectives differ markedly across the nation, mainly as a function of forest types and tree species. But I can't name a single tribe that places pure timber management at the top of its list, as do industrial timberland owners that have a fiduciary responsibility to shareholders in their corporations or real estate investment trusts. By contrast, tribes manage their forestlands for cultural, spiritual, historic and economic objectives, including timber, hunting, fishing and a wide variety of foods and natural remedies sold into quite lucrative niche markets.

It is a delicate juggling act that Indians have raised to an art form over thousands of years, which explains why there is such widespread public interest in giving them even greater latitude in assisting in the management federal timberlands adjacent to their own forests. The idea here isn't to clandestinely return federal forestlands to Indian tribes, though I have long advocated for it. The idea is to establish "Anchor Forests" along the 3,000 mile long border that joins federal lands with those owned by U.S. tribes. Should you wonder, this borderline is two-thirds as long as the border that joins the U.S. and Canada – a lot of real estate for sure.

Elsewhere in this issue, Vincent Corrao, an Evergreen Foundation Board member and forestry consultant, explains "Anchor Forests" in detail. [See "Anchor Forests: The Key to Ending Gridlock in Federal Forests," Page 51] Here I will only say that Anchor Forests are born of tribal concern that insects, diseases and wildfires now running rampant on mismanaged federal forestlands will soon spill over onto adjacent tribal lands. In fact, it's already happening, so there is considerable urgency to the Intertribal Timber Council's hope that Congress will soon ratify the enabling legislation. ITC, based in Portland, Oregon, represents the many and diverse government-to-government relationships that bind Indian timberland owners to federal land management agencies, including the U.S. Forest Service, the Bureau of Land Management, the Bureau of Indian Affairs Division of Forestry, the U.S. Fish and Wildlife Service and the National Marine Fisheries Service.

I don't doubt for a moment that all this political clamor is going to raise eyebrows in

the so-called "environmental community." Bring it on. It's about time the country's environmental activists took a closer look at tribal forestry and its attendant need for wood processing infrastructure that justifies ongoing and increasingly costly investments in forest management. Leaving forests to "nature" is a failed hope that needs a good dose of reality in its veins. While we're at it, it's long past time for us to have an intelligent conversation about climate change and its associated costs. Indians have been coping with changing climates since the last polar ice retreated

from our northern states. I'm sure the European set [that would be all of us who come from families that came here from Europe] could learn a few coping skills from our tribal neighbors.

Although I've been writing about forests and forestry for more than 30 years, I've never come close to the wisdom embodied in an observation Menominee Chief Oshkosh shared with his tribe not long after the Civil War ended. Here is what Oshkosh said when tribal members returning from the war presented him with the idea of cutting across the Wisconsin reservation at such a rate that there would always be timber ready to cut:

"Start with the rising sun and work toward the setting sun, take only the mature trees, the sick trees and the trees that have fallen. When you reach the end of the reservation, turn and cut from the setting sun to the rising sun and the trees will last forever."

Today, 149 years after the South surrendered at Appomattox, the Menominee's are still cutting timber on their reservation. And so long as they stick with their current forest management program, they will never run out of harvestable timber. Last June, while attending ITC's annual timber symposium on the Menominee reservation, I asked a tribal forester if he got much pressure from Menominee Tribal Enterprises [the mill] to cut more timber in hot lumber markets.

"No," he replied with a wry smile. "The mill doesn't tell us how much timber they need. We tell them how much timber we can sustainably cut. It is the forest that tells us how much to cut."

As it should be.

Tribal Branding in a Very Competitive Marketplace

Gary S. Morishima, Technical Advisor, Quinault Indian Nation¹

Tribal forest management exemplifies the triple bottom, integration of cultural, environmental, and economic considerations in ways that are appropriate for the resources and values unique to individual Tribes. Cooperative and collective tribal strategies for branding and marketing (B&M) Tribal Forest Products (TFPs) would provide a means for tribes to tell their own stories.

TFPs have generally been sold as commodities with little differentiation for their unique attributes, and in many instances, superior qualities. Media markets are hungry for unique and fascinating stories that draw power from successful, sustainable managing of tribal forests and rangelands, without interruption, for thousands of years. Interconnect- edness ion of people, place, land, resources, and products, profound commitments to long-term stewardship ethics and culturally-based holistic management should be a central component of a tribal B&M strategy.

By telling their own stories, particularly in consumer and news media markets where “green” resonate, about how their forests are managed and the values that their approaches to resource stewardship are reflected in the TFPs they produce, tribes could substantially improve connections with local customers and communities. This could prove important, not only for increasing the tribal presence in the marketplace, but also for advancing Tribal objectives such as restoration of ancestral forests, implementation of landscape-scale approaches to natural resource management, and the development of administrative and legislative policies. At its core, the primary objective for B&M is to heighten public



Bundled stacks of finger joint lumber await shipment from the Fort Apache Timber Company's remanufacturing plant at White River, Arizona. Fort Apache Timber Company photo

awareness and appreciation of Indian management, stewardship, values, and knowledge.

A focused and strategic B&M approach could play a key role in increasing the presence and influence of tribal natural resource management across the economic, ecological, and political landscape. Potential benefits from B&M initiative are substantial, but not without risk. The marketplace is unforgiving. Quality, price, service and reliability are paramount in globally competitive markets; the weakest and most unreliable suppliers will be culled.

If tribes are unable to match the levels of production, quality, and service of their peers in the market, live up to product commitments, or successfully coordinate their efforts under a cohesive strategy, enterprises will collectively suffer adverse consequences. The determining factor for success lies ultimately in the ability to perform and produce such that consistent and respectable market presence is maintained through both good times and bad. Tribes will be required to adapt to the rigors of changing, highly competitive global markets and make difficult decisions regarding the future operation of their enterprises.

A tribal B&M initiative will require new paths to be blazed and new ground to be explored. It will be important for tribes to proceed with open eyes when contending with the difficult decisions that leadership will need to make in determining if, when, and how to proceed.

In many respects, the concept of B&M is like a seed from a pine cone. Although modest in appear-

ance at the beginning, the seed can grow into something spectacular if given the chance to germinate and blessed with nourishment and encouragement.

Tribes are uniquely positioned to undertake a forest products Branding and Marketing initiative.

¹ Natural Resources Technical Advisor, Quinault Indian Nation. In 2011, the ITC issued a 3 volume report that presented the results of a thorough investigation of the potential for Branding and Marketing to enhance the visibility of tribal forest products. The reports are available at: http://www.itcnet.org/issues_projects/issues_2/marketing-branding/marketingandbranding.html



The array of branded and marketed "forest" products now manufactured and sold by Indian tribes is simply astonishing – everything from reed baskets to fruit preserves, wooden bowls, seasonal table decorations, mushrooms and canned or fresh salmon. Jim Freed photos



ATTRIBUTES and Comments (unique attributes in bold)

CULTURAL IMPERATIVE FOR STEWARDSHIP - Interconnectedness of natural resources, tribal cultures and economies; Multi-generational, place-based traditional knowledge and wisdom; "Seven Generations" focus on Sustainability and Permanence; Environmental Responsibility

Small Business - Eight (a) set asides

Minority Business - Minority Business Enterprises; Government procurement requirements; Corporate social diversity goals

TRUST RELATIONSHIP - Tax Treatment (land base, income, depreciation), Fiduciary responsibilities; Tribal Forest Protection Act Federally reserved rights to hunt, fish, trap, and gather; Federally reserved water rights

POLITICAL SOVEREIGNS - Uniqueness and Diversity; Sovereign immunity, Indian Reorganization Act Sec 17 corporations; *Tribal preference*: Promote use of tribal goods and services in Indian country through federal (e.g., "Buy Indian Act" 25 USC47) and tribal laws and regulations; Environmental regulation (e.g., resource management practices, authority to establish standards for clean air & water and cultural resource protection)

Caring for Woodlands is Vitally Important to Tribal Communities

By Kelly Hetzler, San Carlos Apache Tribe and William Grauel, BIA NIFC

Catastrophic fires and water shortages are major problems in the American west. The inadequate management of woodlands— particularly long-term fire suppression and livestock overgrazing and mismanagement— significantly contributes to, and magnifies, these problems. Models clearly indicate that climate change will continue to exacerbate these conditions. Restoration of landscapes, including woodlands, to ecologically appropriate and sustainable conditions will moderate the effects of climate change, as well as provide benefits well beyond those measured only by the value of wood products. Restoration provides significant benefits to responsible livestock and wildlife management, recreation opportunities, and traditional Native American cultural resources and values. Tribes have lived on the land and, for the most part, managed the land sustainably for many centuries, and are already leaders in restoration efforts, even if unnoticed. With proper investment into woodland areas, the economic and ecological return will support healthy grasslands, reduced wildfire suppression costs, improved hydrology, and restored ecosystems.

In the West over the last century, many grasslands and savannahs have rapidly converted to juniper woodlands. Juniper woodlands that were savannahs in pre-white settlement times once contained one to two trees per acre, maintained by frequent, low-intensity fires. These areas can now have 500-800 trees per acre and rarely burn. In these areas juniper out-competes grasses, resulting in drastically altered hydrology and lower water tables, soil erosion, and the loss of the fine fuels that carry the fires that would maintain these grasslands and savannahs.

In 1935, Bee Flat on the San Carlos Apache Reservation was a blue grama grassland. By 2001 the same area had completely converted to a juniper woodland (Figure 1). Part of the area was treated mechanically by chaining. Another small part was treated with non-recurring ARRA (American Recovery and Reinvestment Act) funds, and awaits funding for prescribed burning and a burn window for further, necessary treatment.

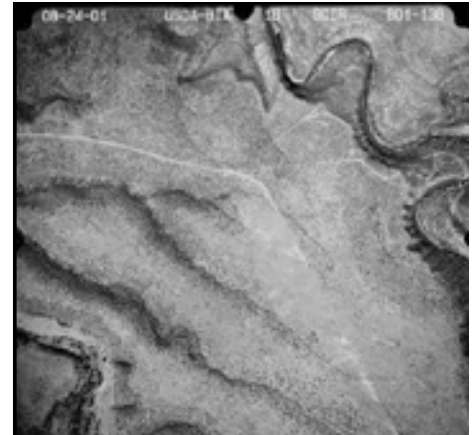


Figure 1. 1935, 2001, 2010 (post chaining), and 2013 (post thinning) Aerial photos and Google Earth imagery of Bee Flat grassland converting to juniper woodland.

Ecologically-sustainable woodlands and grasslands are dependent upon historic fire regimes, but dense woodlands will burn at high intensity and severity if not preceded by initial mechanical treatments and follow-up burning. The timing of treatments is critical in controlling costs and restoring the landscape. Treatments must follow a regimen of livestock removal, mechanical treatment, reseeding if necessary, burning, and possibly repeating some or all of these activities as the situation demands. Initial mechanical treatment is expensive (~\$600/acre). Material must dry and then be burned (~\$150/acre). The area must be rested from grazing to allow grass regeneration, if soil erosion from the lack of grass cover isn't too severe, sometimes presenting an initial loss to cattle growers. Without following mechanical treatment with

fire, trees will sprout from the stumps and future (more expensive) mechanical treatments will be necessary.

Current Federal fire policy is based on the role of wildland fire as an essential ecological process, with the overarching goal of establishing landscapes that are resilient to fire disturbances. Such resiliency characterizes ecosystems that experience fire at the historical, natural range of frequency and intensity. Examining the Historic Fire Return Interval (the time between two successive fire events at a given site or area of a specified size) gives an idea of the area necessary to treat with natural or prescribed fire for ecosystems on the San Carlos Indian Reservation (Table 1).

Without addressing the ecological needs of woodlands, expensive and harmful high-intensity wildfires in commercial timber forests will continue, while the

Table 1 Fire Management Unit	Acres	Historic Fire Return Interval (years)	Required Annual Acreage
Ponderosa Pine	247,694	4 -11	22,518 - 61,924
Madrean Evergreen Woodlands	150,832	15-30	5,028 - 10,055
Juniper Woodlands	282,149	3-30	9,405 - 94,050
Interior Chaparral	219,028	50-100	2,190 - 4,381
Plains/Great Basin Grasslands	184,365	10-20	9,218 - 18,437
Semi-desert Grassland	273,108	10-20	13,655 - 27,311

Table 1. Annual burned acreage required to return historic fire return intervals on the San Carlos Indian Reservation.

inexpensive and necessary low-intensity fires will remain absent or ineffective.

Juniper, pinyon, and encinal oak woodland areas are often adjacent to commercial timber areas. Failure to treat these woodlands places commercial timber at greater risk of catastrophic wild-fire. Investing in restoring the historic fire return interval will allow wildfires to burn with reduced management costs in the future, while providing tremendous resource benefit.

Attempts to find ways to make treating woodlands profitable have challenges. Juniper woodlands without fire to prune them are mostly multi-stemmed trees, which have low economic value. Low program funding for woodlands reflects this. This funding perspective dates to the nineteenth century by non-Tribal economic interests, and to this day informs funding allocations skewed in favor of extractive industries, while constraining managers from ecologically-based treatments. This perspective penalizes attempts to pay for treating woodlands, and to invest in woodland management. Poor road conditions and long hauling distances compound the problem for tribal members deriving income from woodland products such as fence posts and firewood. Options for restoration decrease the longer problems are ignored. Without a dedicated investment to woodland restoration, they will continue ecological compromise, costs of restoration will increase, and threats to adjacent commercial timber will increase.

Woodland management on tribal lands presents a particular challenge. Since program funding is determined largely by national policy, little funding is available for woodlands. This would not be the case if funding were driven by tribal goals. Most traditional Native American natural resource management is driven by a deep respect for the natural world, and an obligated commitment to



Figure 2. Bee Flat grassland filled in with Alligator junipers, before and after treatment.



Figure 3. Area of juniper woodland treated to restore historic density.



Figure 4. Grassland converting to woodland.

overall ecological health and integrity. In fact, most traditional elders see a direct connection between the spiritual and physical health of their communities and the integrity and health of the natural world.

Woodlands have tremendous value for Native cultures. Most traditional Native economies are based on sustainability: taking only what they need, and actively managing the natural world to be as healthy and natural as possible. In traditional Native economies, woodlands are perhaps the most valuable landscapes for traditional resources including food, medicinal plants, and ceremonial resources. In pre-white settlement times, many Native communities consciously invested tremendous resources into maintaining the ecological integrity of woodlands. Non-Native newcomers saw woodlands only as a short-term and expendable source for firewood, grazing, and agriculture – to be appropriated or used up and abandoned, focusing on bottomlands and commercial forests – while Natives saw the systematic destruction of one of their most important resources, and the resultant, rippling impacts on the entire landscape.

Basing natural resource funding priorities along sustainable tribal perspectives will allow management to be driven by large-scale ecological health and integrity. There will be greater long-term economic benefit and greater resilience in the face of climate change. These perspectives are generally reinforced by the latest and most responsible ecological research. Continuing to fund only short-term extractive commercial priorities will continue to see the fatal decline of ecosystems that could accelerate rapidly with climate change.

Many tribes can serve as a model for sustainable management, both on reservations and on their traditional territories often now on Federal or state lands. Many tribes have incorporated traditional ecological knowledge into natural resource management plans, policies, and activities. Since tribes have seen funding cuts disproportionate to Federal natural resource management agencies, tribes have maximized thin resources, and have often lowered overall management costs. But these cuts have come at the price of decreasing treated acreage. Using tribal natural resource management innovation as a model will increase success by bringing management objectives, activities, and funding in line with the best available Native and non-Native science.

Investing in the Next Generation of Indian Foresters

By Serra Hoagland and Breanna Gervais

Indian self-determination and sovereignty can be achieved when tribes have complete autonomy over their natural resources. Fortunately, more Indian students are entering natural resource programs though Indian student graduation rates are still low and there are challenges that must be acknowledged in order to foster the next generation of Indian foresters.

Today, more than ever, Indian forests need a diverse, talented, dedicated workforce to address the unique challenges that are impacting native communities. Fortunately the number of Indians enrolled in natural resource programs is increasing and the number of current Indian natural resource professionals is at a high¹ and continues to rise.

Don Motanic, Intertribal Timber Council (ITC) Technical Specialist, has represented ITC and Bureau of Indian Affairs Forestry for more than 20 years at the American Indian Science & Engineering Society (AISES) National Conferences, which is the largest gathering of Indian students in science, technology, engineering, and mathematics (STEM) disciplines.

“I meet an overwhelming number of Indian students that are studying wildlife, forestry, biology and the environmental sciences,” Motanic says. “This trend wasn’t there historically. It’s apparent that more students are pursuing these degrees and they now carry a stronger commitment to go back to their tribal communities to address various environmental issues.”

Others see the same trend as well. Orvie Danzuka, ITC Education Committee Chair, oversees the Truman Picard Scholarship. He reports there are more students applying for the scholarships, and that the students who are applying are more competitive.

“Every year it seems more and more difficult to select top applicants from a pool of already outstanding students” says Danzuka. “These trends are encouraging at a time when many tribal natural resource professionals are close to retirement.”

Federal, State, non-profit and private

natural resource management employees often lack enduring personal connection to the lands they serve¹. However, many Indian students are deeply connected to the land through various traditional practices and ceremonies. What’s more important is approximately 22% of Native Americans² live in rural areas and depend on the health and productivity of the natural resources for subsistence and economic benefit. Increasing numbers of Native American resource professionals, educated in 21st century science and acquainted with traditional approaches to landscape stewardship, can bring valuable perspectives and capabilities to management programs on tribal and non-tribal lands.

Survey results of tribal and BIA foresters

University/College ⁷	Attendees
Northern Arizona University	21
University of Washington	17
Washington State University	15
Humboldt State University	12
University of Montana	12
Oregon State University	10
Colorado State University	9
University of WI, Stevens Pt.	8
Salish Kootenai College	7
Haskell Indian Nations Univ.	7
Oklahoma State University	6
New Mexico State University	5

Table 1: The number of attendees from various institutions from a survey of tribal and BIA foresters.

Many universities and tribal colleges actively engage in recruitment and retention programs that focus on Indian students in natural resource related fields. We pooled data from several databases^{3,4,5,6,7} to identify where Indian students were enrolled in natural resource programs at public, private and tribal colleges. Our investigation led us to believe that there is a wide range of opportunities for Native students.

Northern Arizona University at Flagstaff and the University of Oregon at Eugene administer regional Tribal Climate Change Programs, which host a variety of STEM research opportunities for Indian students. The University of Washington (UW), Seattle, with the second most tribal and BIA forestry graduates (Table 1), has an agreement with the ITC to waive tuition when students receive the Truman Picard scholarship. This partnership leverages funding support and is also available at Salish Kootenai College (SKC) at Pablo, Montana, and the nearby University of Montana at Missoula provides numerous opportunities, including its Native American Natural Resource Program, Sloan fellowships, waived tuition and several internship programs⁸.

In California, Humboldt State University at Eureka has a Wildland Multicultural Scholars program as well as an Indian Natural Resources, Science and Engineering Program⁹. Stanford University at Palo Alto covers tuition and provides a dormitory for Indian students, offers numerous Indian student organizations, and has a 90 percent graduation rate [the highest in the nation] among its Indian students.¹⁰ Cal Poly at San Luis Obispo, California is initiating a new interdisciplinary minor entitled Indigenous Studies in Natural Resources and the Environment that incorporates Indigenous viewpoints and perspectives as well as traditional knowledge and sovereignty-related topics in required coursework with the intent to, foster improved communication and collaboration among disciplines and enhance the understanding of diversity¹¹. Tribal colleges, including Salish Kootenai College, Southwestern Indian Polytechnic Institute at Albuquerque, New Mexico, Haskell Indian Nations University at Lawrence, Kansas, the College of Menominee Nation at Keshena and Oneida, Wisconsin, Northwest Indian College in Bellingham, Washington and Navajo Technical College at Crown Point, New Mexico provide opportunities for Indian students in natural resources. For more information on tribal colleges see the following article. Several of the aforementioned colleges were among the top twelve commonly listed universities attended by tribal and BIA foresters (Table 1).

Tribes also provide opportunities for Indian youth to get involved in natural resources. The Mescalero Apache Tribe in New Mexico offers a Youth Conservation Corps that introduces students to a wide realm of natural resource issues such as managing the tribal fish hatchery and providing wood for tribal members. The Eastern Band of Cherokee forestry department in North Carolina partners with local schools to incorporate a native plant program where tribal youth can learn about culturally significant plants. Furthermore, Menominee foresters in Wisconsin work closely with the Sustainable Development Institute at the College of Menominee Nation to host over a dozen tribal student interns per year to work on various research projects related to sustainable forest management¹².

As Indian students attempting to complete a post-secondary education we've created the following recommendations that may foster the next generation of Indian foresters:

Integrated coursework: Many natural resource curriculums within mainstream colleges do not include mention of Native American traditional knowledge and cultural influences upon the landscape. When discussion is included there is a tendency to talk about Native Americans in past tense overlooking the many accomplishments of contemporary tribal resource programs. Curricula should include topics like Indigenous science and Native perspectives in natural resource courses. Culturally congruent coursework that integrates tribal perspectives with western science and partnering students with tribal elders has proven to be highly successful and rewarding¹³.

Funding for schools and the students they serve: The success of recruitment and retention programs at various schools was highly correlated to the historical and continued funding and commitment from upper level administration to support such programs. Programmatic funding to establish and maintain programs for Native students is greatly needed¹⁴. Lack of adequate financial resources is one of the top reasons why students drop out of school. The average student debt has risen to \$35,000¹⁵. With rising tuition, the continually widening gap between the haves and have-nots, shrinking job markets and disproportionately high poverty rates, Native students are often at a severe disadvantage^{16,17}. Providing scholarship opportunities such as the UW/SKC ITC tuition-waiver or work programs conveniently located on campus could help al-



Young tribal foresters practice with the tools of the trade during a training exercise at the Yukon Flats Center at the University of Alaska Fairbanks Interior Aleutians Campus. IFMAT III team member, Adrian Leighton took this picture

leviate the financial burden on students.¹⁸

Family: Many Native American students have family obligations and responsibilities that do not allow for travel or relocation to higher education institutions. Student family housing and relocation planning assistance could mitigate the stress of relocating the family unit. For example, the Educational Opportunity Program at Washington State University is a great example that gives members priority-housing placement.

Mentorship and Internships: Non-conventional, first generation, Native natural resource students typically struggle with access to the national higher education system. Larger universities can help by establishing partnerships with tribal colleges to ease the challenges of student transfer. Tribal natural resource departments can connect Native students to internship opportunities within Tribal, Federal, State, and other agencies. Lastly, mentorship and support groups are critical to Native student retention and success. Student organizations such as AISES, SACNAS and others help students develop relationships and leadership skills while creating a sense of belonging and community among the members.

- 1 IFMAT III Report
- 2 2010 Census
- 3 ITC Truman Picard Scholarship database 2012
- 4 Cox, Mathews, and Associates, Inc. 2010. Accessed on July 26, 2013. <http://diverseeducation.com/top100/Bachelors Degree Producers 2010.php>
- 5 Food and Agricultural Education Information System
- 6 AISES College Guide Issues 2010-2011; 2011-2012 and 2012-2013
- 7 IFMAT Workforce Survey summary
- 8 Rachel Smith and Dr. James Burchfield, pers. communication on July 23, 2013
- 9 See <http://www.humboldt.edu/wms/>
- 10 Dr. Matthew Snipp, pers. communication on July 18, 2013
- 11 Dr. Kate Martin, pers. communication on July 22, 2013
- 12 Sustainable Development Institute, College of Menominee Nation webpage. Accessed on July 28, 2013.
- 13 Dr. Adrian Leighton, pers. communication on Feb 26, 2013.
- 14 See IFMAT recommendations CE1-3 and CE5
- 15 CNN Money article. Accessed on July 31, 2013. Available online: <http://money.cnn.com/2013/05/17/pf/college/student-debt/index.html>
- 16 Waters, M.C. and Karl Eschbach. 1995. Immigration and ethnic and racial inequality in the United States. Annual Review of Sociology 21: 419-446. Available online: http://dash.harvard.edu/bitstream/handle/1/3203265/Waters_ImmigrationEthnic.pdf?sequence=1
- 17 Chun, E. Triple Jeopardy: Rising college Costs, Educational Debt, and a Shrinking Labor Market. Accessed on July 31, 2013. Available online at: <http://www.insightintodiversity.com/education/triple-jeopardy-rising-college-costs-educational-debt-and-a-shrinking-labor-market-by-dr-edna-chun>
- 18 See IFMAT recommendations CE4

Tribal Colleges and Universities: A Critical Link in Indian Education and Workforce Development

By Breanna Gervais, Serra Hoagland and Adrian Leighton, Chair, Natural Resources Department,
Salish Kootenai College, Pablo, Montana

Tribal Colleges and Universities (TCU) can act as mechanisms of cultural preservation by promoting higher education among Indian people and improving economic conditions of tribal communities. By integrating tribal culture and traditions with western science education, 37 TCUs¹ provide a variety of bachelors, associates degrees and certificates in the natural resource fields uniquely customized to reflect Native perspective. On average, 400 students (Native and non-Native) each year are enrolled in natural resources degrees at 23 TCUs.² Many TCUs, located in rural areas, serve communities that suffer from high rates of poverty and unemployment³ by providing a conduit for advanced education and jobs. Many native students enrolled at TCUs

have pursued non-traditional educational pathways. For example, the median age of a TCU student is approximately 30, predominately female, first generation, low income, with dependents.⁴

TCU natural resource programs are helping to provide tribes with a skilled workforce, knowledgeable in the unique obstacles, opportunities and successes of natural resource management on tribal lands. However, the ability of TCUs to create programs to educate the future workforce of foresters is being compromised by funding shortfalls. For example, Title III-A program funding for TCUs was cut by 11% in 2011 and 16% in 2012.⁵ Many TCUs accommodate the special needs of their student populations by providing childcare services, flexible tutoring schedules, small and flexible classes, peer and faculty mentoring and scholarship opportunities.⁶

Fortunately, the critical link that TCUs provide in developing a strong tribal workforce may be gaining recognition and political support. In December of 2011 President Obama signed Executive Order 13592, which stated, "Federal agencies must help improve educational opportunities provided to all AI/AN students...attending postsecondary institutions including TCUs." In 2011 the Bureau of Indian Education and DOI, the agencies charged with oversight of operations at Haskell Indian Nation University and Southwestern Indian Polytechnic Institute, entered into a Memorandum Of Understanding to (1) advance the capability of TCUs to attain educational excellence, so that TCU students can fully participate in the U.S. workforce, including in natural resource field and (2) promote enriching outdoor experiences, natural resources and technology career pathways among students attending TCUs. However, neither of the above schools currently have accredited forestry programs. Salish Kootenai College (SKC) operates the only baccalaureate program in forestry at an Indian college. SKC has developed culturally in-



Leech Lake Tribal College at Cass Lake, Minnesota offers several associates degrees including forestry, natural science, law enforcement and business management. College photo



Sitting Bull College at Fort Yates, North Dakota offers a wide variety of undergraduate and graduate degree programs. College photo

formed curriculum including a class that focuses entirely on tribal forest management. Currently there are approximately 100 Native students from over 20 tribes enrolled in natural resource degrees at the college. SKC has formed partnerships with the BIA Division of Forestry and Wildland Fire Management, the USFS Office of Tribal Relations, University of Washington and Montana State University, among others, to give the students a variety of experiences in research and land management.

TCUs that offer Associate degrees in natural resources are also working with agencies and universities to broaden the student experience. Stone Child College partnered with the Globe Program to give students field and lab research experience in climate change and soil science fields.⁷ The National Center for Earth-surface Dynamics, Fond du Lac Resource tribal community college, Fond du Lac Resource Management and University of Minnesota Natural Resources Research Institute collaborated to identify best management practices to restore wild rice on regional lakes.⁸ Little Big Horn College, with help from a USDA Tribal Colleges Education Equity Grant, the Oglala Lakota College and the National Science Foundation, has been able to provide students with ecological field and research experience related to cottonwood woodlands management.⁹ More

TCUs focus on advancing self confidence, self-awareness, interpersonal sensitivity, and intellectual development, essential to the success of many non-conventional students.⁶



Cheyenne Arapaho Tribal College is housed at Southwest Oklahoma State University in Weatherford, Oklahoma. College photo

recently in 2013, North Dakota State Legislature authorized workforce development grants to the state's five TCUs.¹⁰ With these partnerships and others, TCUs have created an educational environment where intertribal forestry and other natural resource issues can be examined with numerous benefits to students, tribes and surrounding communities.

- 1 AIEHC, American Indian Higher Education Consortium. 2013 <http://www.aihec.org/> Accessed July 2013
- 2 IFMAT-III, An Assessment of Indian Forest and Forest Management in the United States, Vol. 2 Pg 134-136 2013
- 3 WHAIANE, Executive Order 13952. White House Initiative On American Indian and Alaska Native Education January 2011
- 4 His Horse is Thunder, D. 2012 Breaking through Tribal Colleges and Universities.
- 5 AIEHC American Indian Higher Education Consortium. Statement of the American Indian Higher Education Consortium Submitted to the US House of Representatives- Committee on Appropriations. 2013.
- 6 Guardia, J. and Evans, N. 2008 Student Development in Tribal Colleges and Universities NASPA Journal Vol 45, No.2
- 7 The Globe Program, 2011 <http://globe.gov/news/globe-stars/starsdetail/10157/2010-stone-child-triba> Accessed July 2013
- 8 National Center for Earth-Surface Dynamics 2013 <http://www.nced.umn.edu/content/research-experience-undergraduates> , Accessed July 2013
- 9 Kim, J and Crasco, L. Weaving Native Knowledge into STEM Teaching and Learning at Tribal Colleges and Universities 2008
- 10 Senate Bill 2218. AN ACT to provide workforce development grants to tribally controlled community colleges through the North Dakota department of commerce; and to provide an appropriation. 2013

Transformation

Indians and Forests: Mileposts in History

By Larry Mason, University of Washington School of Forest Resources; Ret. Forestry Consultant, Alternate Dimensions, Inc.

An abbreviated historic review reflects a remarkable transformation for tribes and forests. The development of forests on Indian reservations has historically reflected the evolving social attitudes and pressures for land and resources of non-Indians. However, in recent decades, unintended consequences such as fragmentation of forest landscapes, endangered species, and mounting wildfire hazards have called into question past policies of the dominant society. Indian forestry programs, increasingly guided by tribal leadership, are becoming recognized as models for sustainable forestry.

Timeline	Tribal		Euro	
	Land Tenure	Forestry	Land Tenure	Forestry
Pre-contact - Before 1500	Communal Land as spiritual domain	Sustained, multiple use. Wood abundantly available for fuel, housing needs and other useful products. With fire and other means, landscapes are manipulated to cultivate crops, tend to wild foods, promote abundance of game, medicines, fuel, clothing, shelter, transportation, and artistic expression. Spiritual beliefs within the land.	Feudal Land as capital wealth	Forests depleted from harvest, conversion to agriculture, grazing by domestic animals, and destruction from wars. Lands owned by monarchies and church leased under strict controls for commodity production. Wood products for fuel, building materials, transportation, and artistic expression are scarce and valuable. Spiritual beliefs apart from the land.
Contact and colonization 1500-1800	Tenuous/transient: Villages abandoned as populations decline. Intertribal conflicts as tribes are pushed west by Europeans and compete for hunting grounds and trapping routes.	Diminished traditional Native influences on forest landscapes from introduction of European diseases and exotic plants and animals. Pandemic declines in Native populations. As human populations declined, villages and agricultural fields were abandoned. Patterns of Indian burning and hunting slowed. Significant landscape changes began to appear.	Doctrine of Discovery: By Papal decree, European nations can take the land and resources of non-Christian indigenous peoples. Land taken by conquest for plunder, trade, or settlement.	Forests cleared for cultivation with forest products consumed for domestic needs or exported to European markets. Hunting pressures bring declines in fur-bearing animals. By 1776, 100 mile-wide swath from Maine to Georgia had been settled and one-half to three-quarters of the land cleared for agriculture.
Removal & reservation- 1800-1875	Reservations: Indian tribes forcefully removed to western reservations to make way for non-Indian settlement; successional treaties were signed, violated, and abrogated. Indian tribes defined by the Supreme Court as "Domestic Dependent Nations" with title held in "trust" by the U.S. government.	Indian treaties bestowed only the right of occupancy. U.S. retained title to timber and minerals. Commercial management of forests not allowed by or for Indians. Theft of timber from Indian lands was widespread. Tribal attempts to continue traditional practices were met with opposition by settlers. Pandemic declines in Indian population continue as a result of exposure to European diseases.	Private property/public domain: "Manifest Destiny" was the term coined for pre-ordained displacement of Indians and expansion of the U.S. territory to the Pacific. Public Land Survey System establishes grid-based land boundaries. Homesteads, mining claims, and land grants redistribute forests to settlement, cultivation, and private enterprise.	Jefferson envisioned a nation of yeoman farmers. Forests are converted to agriculture. "The plow followed the ax" therefore little attempt at reforestation. Widespread illegal timber harvesting ("cut and run") occurred on public lands and Indian reservations. Railroads bisect landscapes. Precipitous declines in forests and wildlife.

Timeline	Tribal		Euro	
	Land Tenure	Forestry	Land Tenure	Forestry
Assimilation and allotment 1875 -1935	Trust and fee lands. 1878 -The General Allotment Act (Dawes Severalty Act), directed the BIA to transfer parcels of tribal land of sufficient acreage for farming to individual tribal members (each Indian family head was given 160 acres with each single person over 18 years of age received 80 acres). The rhetorical objective: assimilate Indians into white culture. The functional objective: Congressional confiscation of Indian lands. Between 1878 and 1934 Indian landholdings decreased from 138 million acres in 1887 to 48 million acres in 1934 – a total loss of 90 million acres.	In western states the amount of Indian land suitable for agricultural use was very limited and consequently the Indian Service found it necessary to allot millions of acres of forest lands much of which were totally unfit for agriculture even when cleared of forest growth. Parcelization and fragmentation created formidable jurisdictional and forestry challenges. Small parcel sizes reduced the value of timber and increased the costs of management and harvest. Equitable land distributions were impossible.	Private property/public domain: Considerable allotted lands lost from Indian ownership through sales, foreclosures, illegal takings, and fraud. Millions of acres of “surplus” Indian forest lands were transferred to the federal estate and either opened for homesteads or designated as national forests. In contrast to the allotment policy objective of eliminating communal land ownership, the retention of large forest landscapes in the public domain represented a departure from long-standing U.S. policies of land disposal for private development.	As expanses of cut-over and abandoned forest lands increased in acreage and visibility, public concerns and complaints over the misuse and depletion of forests were mounting. In 1897, the Forest Management Act (also known as the Organic Act) created the U.S. Forest Service for the purposes of protecting forests, securing favorable conditions of water flow and providing continuous supply of timber to the Nation. Federal engagement extended beyond the federal ownership of forests to establishment of infrastructure to exclude wildfire from the landscape.
Indian forestry 1910	Trust and fee lands: In 1910, the General Indian Timber Act authorized harvest and sale of green mature timber on Indian lands and established the “Indian Forest Service” (later to become the BIA Branch of Forestry) to oversee protection of Indian forests from fire and trespass and the management and sale of Indian timber.	Establishment of an Indian forestry program marked Government recognition of the value of tribal forests to provide income and employment to meet the needs of tribal communities. From the beginning attempts were made to integrate forestry with other land uses such as agriculture and grazing. In 1911, 30 small Tribal sawmills were operating to produce building materials for government construction projects, Indian housing, or commercial sale.	Private property/public domain: The BIA, as the federal trustee, was designated as the trustee representative and charged with the administration of the Indian forestry program. Several unsuccessful proposals were made by the Forest Service to include Indian forests under their authority but the BIA successfully argued that Indian forestry belonged with administration of other trust responsibilities within the Department of Interior.	Commercial harvest and regeneration of Indian forests based upon scientific management principles was begun. The first Chief Forester of BIA forestry, J.P. Kinney, recommended an end to forest allotment but the Secretary of Interior overruled and allotment forests continued. Allotments are now considered as the single most destructive policy impact on Indian forests and land-use.

Timeline	Tribal		Euro	
	Land Tenure	Forestry	Land Tenure	Forestry
Fire Suppression	When the Forest Service was established in 1905, its primary task was to suppress all fires on forest reserves. The same quickly became true for other federal and state agencies. By 1935, the government fire policy stipulated that all fires must be extinguished by 10 a.m. Traditional Indian use of fire, with a long history of light burning to achieve landscape objectives, was denigrated as "Paiute Forestry" and made illegal in most parts of the U.S.	An end to under-burning resulted in changes to forest landscapes including growth of dense under-stories and accumulation of fuel loads. Changes in forest conditions brought declines in availability of foods, medicines and crafts materials traditionally important to Indians.	By the twentieth century, federal, state, and private forest managers agreed that fire was unacceptably destructive and, to the degree possible, must be eliminated from the landscape. In more recent years as forest fires have become increasingly expensive and destructive policies are shifting to support hazardous fuels reductions and reintroduction of under-burning onto the landscape.	On federal lands suppression of wildfire and lack of commercial management created unprecedented forest fuel loads that when ignited result in uncharacteristically hot "mega-fires" that are difficult to control and threaten adjacent land ownerships such as Indian reservations. Congress acknowledged the seriousness of this hazard with passage of the Tribal Forest Protection in 2004.
Reorganization 1935 - 1950	Trust and fee lands: The Indian Reorganization Act of 1934 (IRA, otherwise known as the Wheeler-Howard Act), legislatively introduced tribal self-governance, acknowledged that Indian cultures had value that should not be lost to assimilation. IRA ended allotments, extended trust responsibility indefinitely, and established Indian hiring preference. IRA is considered by many to be one of the most important pieces of Indian legislation in U.S. history.	IRA marked a turning point for Indian people and forests: the Native population reached the lowest in history as did the acreage of Indian forests. It restored tribal ownership of lands declared surplus but not yet dispersed and established a federal commitment to reacquire lost tribal lands, however, little reacquisition occurred. The act authorized the Secretary of the Interior to make rules and regulations for the operation and management of Indian forests on a sustained yield basis. This was the first formal adoption by a federal agency of sustainability as a management imperative.	Private property/public domain: Other than Alaska, most redistribution of western lands from Indian tribes to public domain to private ownership had been completed.	Forestry on federal, state, and private lands was dominated by demands for timber created by the war and by demands for fire suppression created by government policies. Industrial tree farms were established to support vertically integrated timber companies. Concerns, however, surfaced over the economic stability of forest-dependent communities in the West.
Termination 1950 - 1970	Trust and fee lands: In less than 20 years since passage of IRA, policy-makers returned to strategies for assimilation and land takings. From 1953 to 1968 109 tribes and rancherias were "terminated," federal trust responsibilities were ended and 2.5 million acres of land were disposed through supervised sale. Twelve thousand Indians were deprived of tribal affiliation. A few forest tribes such as the Menominee, Klamath, and Coquille were able to regain federal recognition following long court battles.	Tribes with significant forest resources were particularly targeted. Some tribes like Menominee were able to keep control over most of their forestlands. Others such as the Klamath were not so fortunate: 700,000 acres of Klamath timberlands were taken to create the Winema National Forest in Oregon. Changes in tribal status and land bases in the short decades from allotments (assimilation), to IRA (self-governance), and then termination (assimilation) were challenges to long-term management of tribal forests.	Private property/public domain: Growth of urban industries and rapid establishment of suburbs to accommodate housing needs of post-war population growth, contribute to shifting public expectations about wild lands and forests. State and federal environmental and forestry regulations expand in scope.	Problems emerge from imposition of property boundaries onto natural landscapes that include fragmentation, disruptions to wildlife habitats and increased costs of management. Rate of timber harvest on federal and state lands accelerates as first harvest on private lands nears completion. Tree planting following timber harvest becomes the accepted regeneration practice. Extensive investment in fire exclusion/suppression results in the incidence of wildfires dropping to historic lows.

Timeline	Tribal		Euro	
	Land Tenure	Forestry	Land Tenure	Forestry
Self-determination and Self-governance 1970-1990	Trust and fee lands: Nixon to Congress in 1970, "The time has come to break decisively with the past and to create the conditions for a new era in which the Indian future is determined by Indian acts and Indian decisions." Indian Self-Determination and Education Assistance Act (PL93-638) authorized Secretaries of Interior, Health, Education and Welfare to enter service delivery contracts with federally recognized Indian tribes.	Self-Determination policies increased ability of tribes to reassert their influence on Indian lands. Through self-determination, tribes assumed greater leadership with the BIA role shifting more to technical support. A necessarily adaptive blend of tribal values, traditional knowledge, and forest science has been the result.	Private property/public domain: Federal authorities acknowledge that decisions affecting tribal lands are best made by tribal people. As treaty rights are upheld (for example fisheries in the PNW) tribes are assuming expanded leadership in cross-jurisdictional stewardship (for example riparian management). Issues concerning multi-ownership management such as TFPA, stewardship contracting, and rural stability are attracting collaborative attention.	Problems created by 100 years of fire exclusion in disregard of Indian recommendations grow in magnitude. Overstocked conditions and climate change lead to declines in forest health. Fundamentally flawed policy imperatives such as single species management confound science and traditional beliefs creating seemingly unsolvable environmental dilemmas. Environmental laws and administrative processes create litigation paralysis on federal lands that creates hazards for state, private, and tribal forests as well as rural communities.
Transformation 1990 to present	Trust and fee lands: The National Indian Forest Resource Management Act of 1990 was passed by Congress to address forest management, funding, staffing, timber trespass, forestry education, and other aspects of forestry trust responsibility. Indian Self-Governance, Indian Land Consolidation Act, Tribal Forest Protection Act, and the Cobell settlement helped define federal trust responsibility and self-governance. In 2010, BIA Branch of Forestry marked 100 years.	Indian forestry programs, increasingly guided by tribal leadership (compacts and contracts) are becoming recognized as models for sustainable forestry. Indian tribes are uniquely positioned to share traditional knowledge of forested environments and to facilitate regional multi-ownership strategies for resource management. Long subordinated, Indian tribes are now emerging as environmental leaders.	Recognition that contemporary environmental challenges (forest health, habitat protections, water, climate change, etc.) do not conform to established political boundaries. Multi-ownership collaborations are needed. Collaborative Forest Landscape Restoration Program as an example.	Private property/public domain: With dismantling of vertically integrated timber companies, industrial forestland ownership shifts to short-tenure. Public forests are increasingly challenged by political conflicts. Forest management paradigms and science assumptions of the twentieth century have produced unintended consequences that now require new approaches. Cumulative challenges such as forest health and climate change warrant special attention and significant investment.



Poorly done clearcuts like this one formed the basis for the landmark 1983 Supreme Court ruling in *United States v Mitchell*. The court ruled that the federal government had violated its fiduciary responsibility in the mismanagement of Quinault Nation tribal timberlands. Photo provided by Gary Morishima, Quinault Technical Advisor

Federal Trust Responsibility: No Simple Matter

By Eric Eberhard, Distinguished Indian Law Practitioner in Residence
Seattle University, Seattle, Washington

The federal trust responsibility rises from the treaties, Acts of Congress, decisions by U.S. federal courts and the long history of dealings between the United States and federally recognized Indian tribes. It not only encompasses federal responsibility to protect Indian lands and natural resources, but also includes the responsibility to protect and foster the inherent right of tribes to be self-governing.

The National Indian Forest Resources Management Act [NIFRMA] expressly recognized the federal government's trust responsibility for the tribal forests and natural resources and the inherent authority of the tribes to manage and administer those resources for multiple uses that include but are not limited to sustained yield.

Tribal Forest Management Plans are intended to be the expression of this balance of federal trust responsibility and the sovereign authority of the tribal and federal governments. The plans provide the tribes with the opportunity to determine the uses to which their forest resources are put consistent with the culture and goals of each tribe. The plans provide the Secretary of the Interior with an effective mechanism for ensuring that the trust responsibility is effectively discharged both for the forest resources and for the sound exercise of inherent tribal authority to manage and administer those resources.

NIFRMA built on the Supreme Court's recognition of the federal trust responsibility in *Mitchell II* in 1983 and the conception of the trust responsibility as embodied in the policy of self-determination that was the subject of President Nixon's Special Message to Congress on Indian Affairs in 1970. The Congress embraced that policy in the Indian Self-Determination and Education Assistance Act in 1975.

During the consideration of NIFRMA, Congress noted that the tribes were using the Self-Determination Act to enter into contracts, grants, cooperative agreements and self-governance com-

pacts in the area of forest management and that the resulting tribal work "has yielded improved forest management activities."¹

In *Mitchell II*, the Court determined that:

Our construction of these statutes and regulations is reinforced by the undisputed existence of a general trust relationship between the United States and the Indian people. This Court has previously emphasized "the distinctive obligation of trust incumbent upon the Government in its dealings with these dependent and sometimes exploited people."

*Because the statutes and regulations in this case clearly establish fiduciary obligations of the Government in the management and operation of Indian lands and resources, they can fairly be interpreted as mandating compensation by the Federal Government for damages sustained. Given the existence of a trust relationship, it naturally follows that the Government should be liable in damages for the breach of its fiduciary duties. It is well established that a trustee is accountable in damages for breaches of trust.*²

Both the House and the Senate were cognizant of the Court's holding in *Mitchell II* during the consideration of S. 1289, the bill which became NIFRMA, and both embraced this same language from the Court's opinion in *Mitchell II*.³ There can be no doubt that the Congress intended to accept the Court's holding in *Mitchell II* and to incorporate the Supreme Court's understanding of the trust responsibility into NIFRMA.⁴

The legislative history for NIFRMA demonstrates that Congress intended to address many of the same issues that have been identified as problems in IFMAT I, II and III. The historic and consistent lack of adequate funding for the management of tribal forests throughout the 20th century was well documented, as was the continuous breach of what was characterized as a "sacred trust."⁵ The lack of adequate funding has persisted despite the enactment of NIFRMA. To the extent that

NIFRMA has succeeded, it is because it recognized the inherent right of the tribes to be self-governing and created an opportunity for the exercise of tribal authority.

In addition to the lack of adequate funding, the implementation of NIFRMA has been hampered by the inherent conflict of interest that has affected the administration of the federal trust responsibility in general. The BIA Division of Forestry is called on to be both "pitcher and catcher" as it wrestles with competing interests and duties created by federal laws and regulations and the disparate interests that are affected by decisions and actions taken by the Department of the Interior.

The federal courts have long recognized the conflicting nature of the duties and interests imposed on the Department in the mandates from the Congress. The courts have generally held that when acting as the trustee the Department has the duty of a fiduciary. However, in recent years the courts have also shown a willingness to define the trust responsibility narrowly to relieve the Department of its fiduciary duties, particularly where there is not a clear statutory basis for the trust responsibility or there is no evidence of self-dealing by federal officials.⁶

1 S. Rpt. 101-402 at 9 (101st Cong., 2d Sess. 1990).

2 *Mitchell II*, 463 U.S. at 225-226 (citations omitted)

3 S. Rpt. 101-402 at 5 (101st Cong., 2d Sess. 1990) and H. Rpt. 101-835 at 13 (101st Cong., 2d Sess. 1990).

4 Because of concerns over liability for breach of trust and unique jurisdictional and political complexities of Indian Country resulting from over two hundred years of history replete with vagaries of policy, legislation, and court decisions, an extensive set of rules, regulations, and procedures is contained in manuals and handbooks for trust administration of Indian forests.

5 S. Rpt. 101-402 at 2-3; H. Rpt. 101-835 at 11-12.

6 See, *United States v. Jicarilla Apache Nation*, 131 S.Ct. 2313 (2011) and *United States v. White Mountain Apache Tribe*, 537 U.S. 465 (2003).



The North Fork of the Quinault River in February of 2011, just upriver from the North Fork Ranger Station. Larry Workman photo

A View From 20 Years Out

Tribal Vision Unchanged; Management Approval Increasing

By Adrian Leighton, Chair, Natural Resources Department, Salish Kootenai College, Pablo, Montana; Joyce Berry, Dean, Warner College of Natural Resources, Colorado State University, and John Gordon, PhD, Co-chairman, IFMAT III, Chairman, IFMAT I and II

One of the most powerful indicators of quality forest management is the degree to which management meets the goals and objectives of the people that the forest is being managed for. This is particularly true of tribal forests, where the “stakeholders” have a deep, long term and place-based relationship with the land.

Beginning with the first IFMAT report, which was completed in 1993, team members have used survey and focus group results to gauge Indian peoples’ visions for their forests. While the team always recognized that each tribe has its own unique culture, traditions and history, it became clear from the outset that there was a remarkably consistent set of values and a vision for forest management that transcended individual tribal differences.

Over the last 20 years, the movement toward self-determination and in the number of Native American professionals has had a quite positive impact on tribal forest management. In tandem, management level understanding of what their tribal members want from their lands has converged on a more or less common vision. Not surprisingly, tribal member perception of the quality of forest management has improved dramatically.

The Tribal Vision: The findings from each of the three IFMAT reports have been remarkably consistent in terms of what tribal members want from their forests. Overall, tribes value forest resource protection above all else. But survey and focus group results reveal that “protection” means something different in Indian country than it does elsewhere. Indians want their forests to be managed for multiple values: cultural, subsistence, economic and ecological, while in the wider world, “forest protection” signifies a less balanced, more restricted, hands-off approach with minimal human benefit.

The convergence of understanding: IFMAT I found that although there was a remarkably consistent vision from tribal members, this vision was not

shared by native and non-native forest managers. Non-native BIA staff tended to put economic values to the forefront, while native BIA foresters tended to stress subsistence, recreation and spiritual values. Neither group put anywhere near the same importance value on forest resource protection that the membership did. By the time IFMAT III repeated this vision process, a remarkable convergence of values has occurred (see Figure 1). All groups polled overwhelmingly selected forest resource protection as the most valued use/benefit provided by forests and forest management. Foresters working for tribes and the BIA, tribal and non-tribal alike, are recognizing the wishes of membership in ways that are markedly different from twenty years ago.

Opinions of forest management have improved: The tribal public had a very poor perception of the quality of forest management in 1992 when IFMAT I was conducted. Less than 25% of those surveyed gave a “good” or “excellent” rating to various facets of forest management, including grazing, recreation, water quality and quantity, non-timber forest

products, employment of tribal members, creation of new enterprises, food gathering, spiritual values, visual quality, protection from pollution and waste, poaching, trespass, and overall management.

Although there was some improvement by IFMAT II, the majority of these categories still received less than a 25% approval rating. But the IFMAT III team found a very different perception. In 2012, only three categories received less than 25% approval: grazing, new enterprise creation and trespass. Wildlife management, fisheries management, water quality, cultural site protection and forest resource protection received over 50% “good” or “excellent” ratings, a definite improvement from previous IFMAT reports.

With three IFMAT reports spanning 20 years now behind us, noticeable and encouraging trends present themselves: the tribal vision of forest management first articulated in IFMAT I is robust and consistent, forest managers are increasingly aware of and adapting to this vision and as a consequence, tribal public perception of forest management is steadily improving.

Figure 1

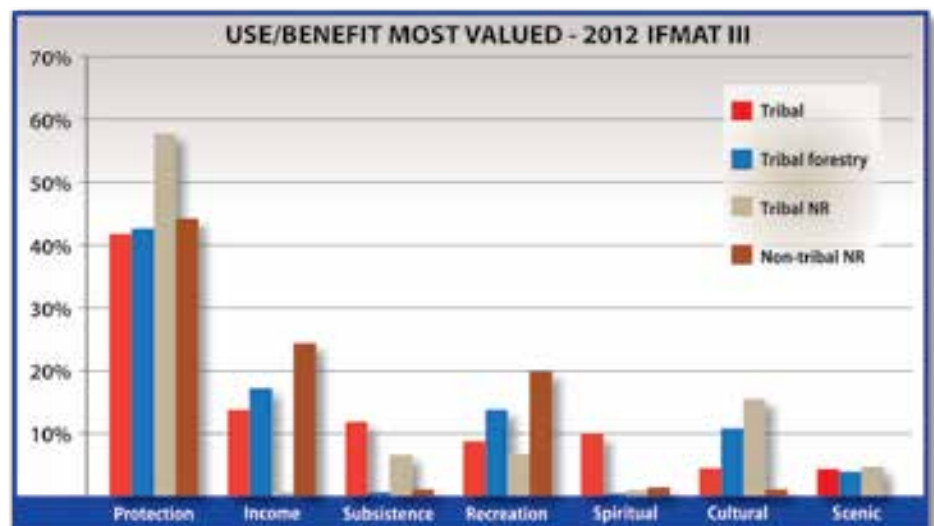


Figure 2

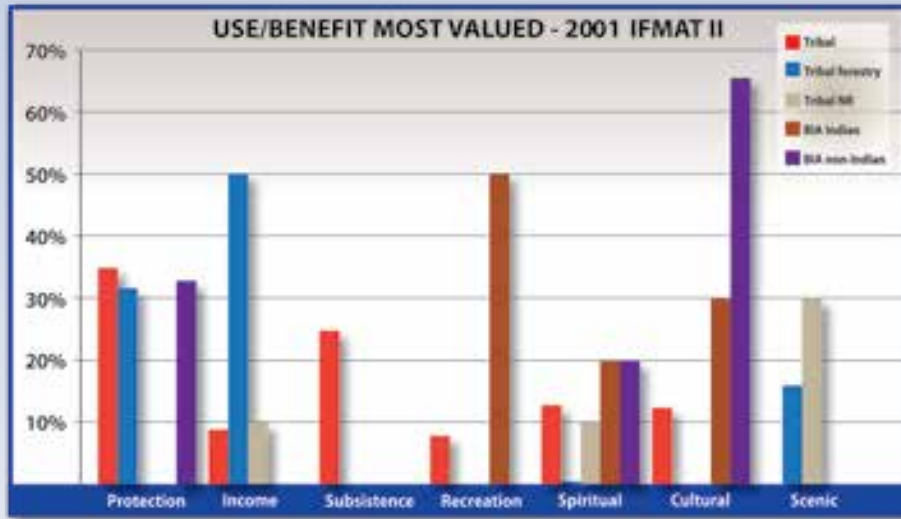


Figure 3

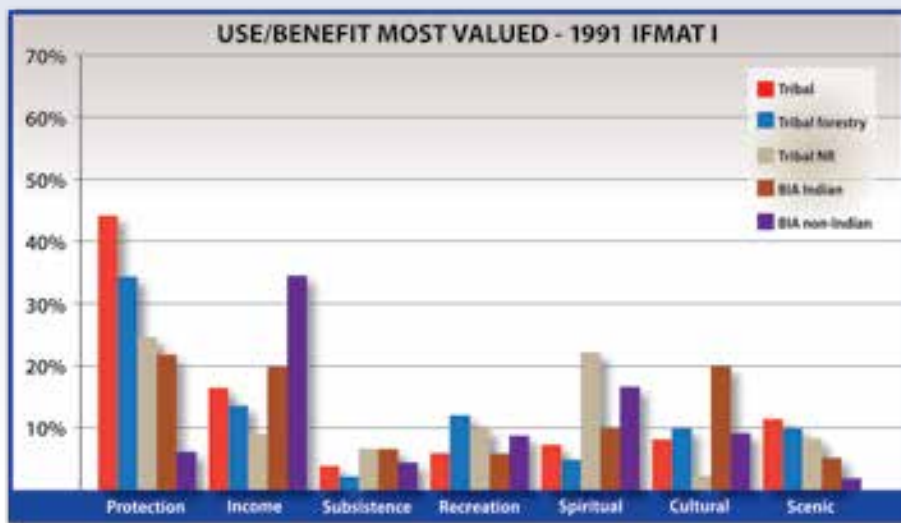
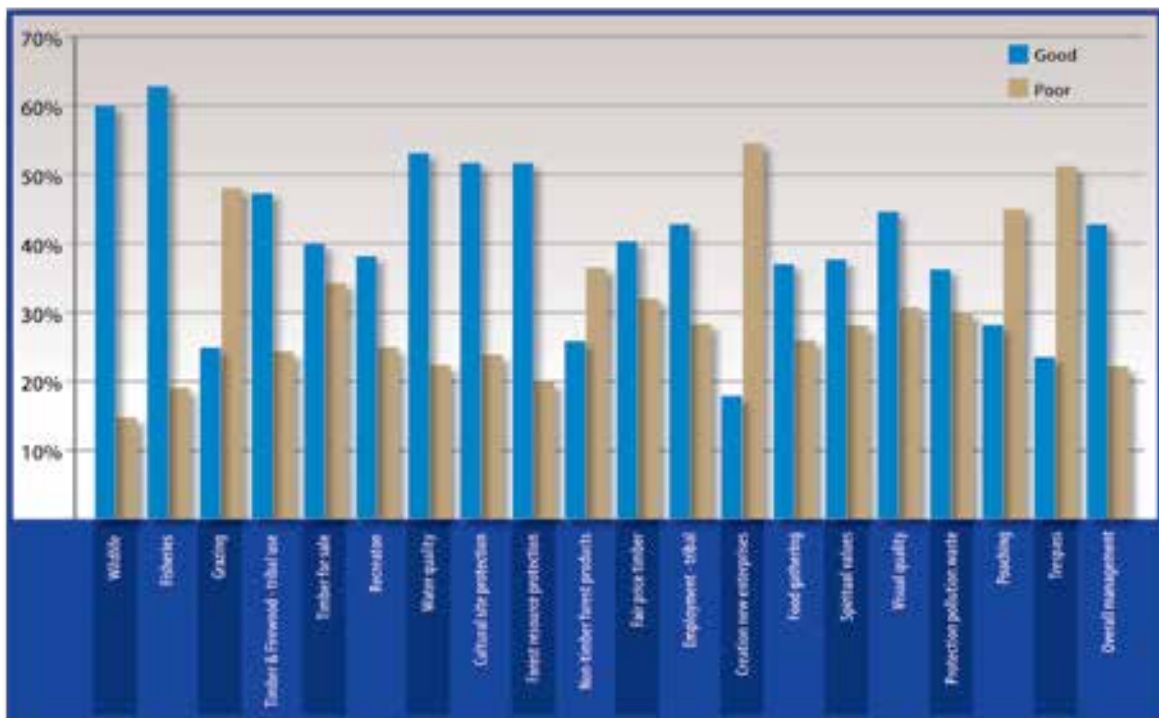


Figure 4



Anchor Forests: The Key to Ending Gridlock in Federal Forests

By Vincent Corrao, President, Northwest Management, Inc., Forestry Consultants
IFMAT III Team Member

Forest across the nation face threats from climate change, fragmentation, development, wildland fire, and induced mortality from insect and disease infestations all of which have no regard for land ownership or boundary lines. Public and private forest managers have long struggled with attempts to integrate stewardship of ecological processes with maximizing returns on investment.

Because of these threats, management, harvesting, transportation and wood processing infrastructures are shrinking rapidly, seriously undermining future options for managing forests using strategies that are ecologically sound and publicly acceptable.

Climate change, which holds the potential to alter the distribution of forest cover types, species, and natural disturbance patterns across entire landscapes, may present the greatest long term challenge to maintaining healthy and

resilient forests. But in the near term, the increasing size and frequency of wildfires is forcing landscape-scale changes in forest cover and critical wildlife habitat. Wildfire ecologists are now observing ecological impacts that are unprecedented in modern history. .


A landmark 2009 National Association of State Foresters report correctly notes that the forest crisis we now face is too large and complex to be successfully addressed at a local level or by a single forest ownership.

There are federally supported collaborations, including the Wildland Fire Leadership Conference, the Collaborative Forest Landscape Restoration Program (CFLRP), and Tribal Forest Protection Act (TFPA) that seek multi-ownership conservation strategies at landscape scales. It is becoming more and more apparent to policymakers and land managers that there is a need for cooper-

ation between the forest industry sectors, public agencies, and Indian tribes. Tribes have managed their forest land for centuries and Indian people share a common responsibility to manage the environment on behalf of present and future generations.

The Intertribal Timber Council [ITC], which represents the interests of Indian tribes that own and manage timberland in the United States, is currently advancing a concept that speaks to the pressing need for a more integrated approach to varying forestry operations conducted on a very large scale by multiple owners.

So-called "Anchor Forests" address an obvious lack of cross jurisdictional and multi-ownership conservation strategies. As envisioned, the owners of these large continuous areas would work collaboratively to implement politically and publicly endorsed management plans that sustain timber and biomass production



Thinning writ large: the thinned forest on the left belongs to the Mescalero Apache Tribe. The un-thinned forest on the right is in New Mexico's Lincoln National Forests. If the Lincoln was an Anchor Forest, the tribe could thin it, reducing the risk of insects, diseases and wildfire. Bernie Ryan photo

while also sustaining ecological functions.

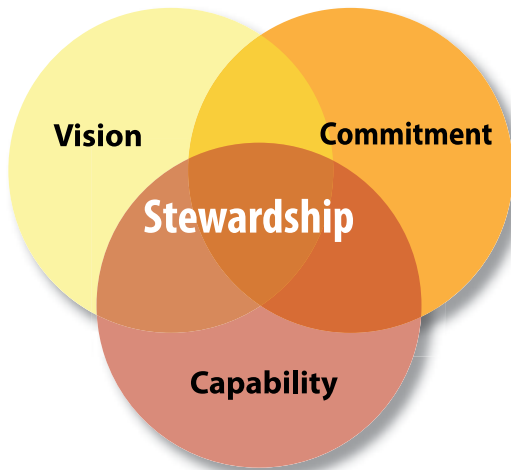
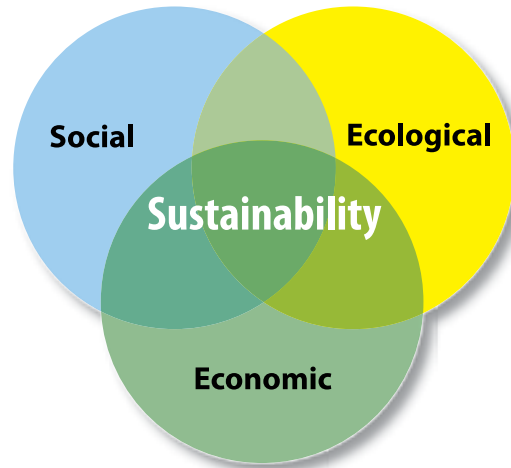
ITC has already undertaken its first Anchor Forest pilot project using multi-year funding provided by the U.S. Forest Service's Pacific Northwest Region. The study, which is focused in eastern Washington, will explore the potential for using Anchor Forests to better balance economic and ecological imperatives associated with forest health and resiliency. The belief among ITC members is that a more collaborative approach involving tribes, the Forest Service, the Bureau of Indian Affairs and other federal, state and local government agencies, plus private industry, non-governmental organizations and universities, will produce the desired result. The Yakama Nation is leading this pilot project, which seeks to complement the Forest Service's Collaborative Forest Landscape Restoration Project and the Tapash Collaborative.

Of this project's goals, none seems more important than its evaluation of the potential for using Anchor Forests as a means of retaining working forest landscapes in south central, north central and northeastern regions of eastern Washington. And if it is possible to use Anchor Forests as models for restoring and maintaining healthy landscapes in eastern Washington, might not the same model work in other regions of the country?

Anchor Forests embrace a simple and sensible premise: sustainability implemented in such a way as to foster desirable cultural, ecological, and economic forest objectives. As such, they provide a foundation for development of common visions through collaboration and cooperation across ownership boundaries and among varying interests, thereby earning much sought after political and public endorsements.

Anchor Forest management would be defined by collaborative agreements across ownerships based upon four major objectives:

1. A reasonable expectation for sustainable wood commodity production as a major management objective



2. Production levels sufficient to support economically viable manufacturing, processing, and work force infrastructure within accessible transportation
3. Long-term management plans, supported by inventory systems, professional staff, and geographic information systems
4. Institutional and operational capacity for implementation.

Objectives 1 and 2 [above] will explore relationships between commercial activities and the ability to care for the forest. Anchor Forests must be capable of sustaining production levels at a scale necessary to maintain a minimum level of competition within a viable transportation distance from the woods to the processing facilities.

Objectives 3 and 4 [above] will quantify the institutional capacities [wood processing infrastructure, staff, facilities, and organizational com-

ponents] necessary to sustain Anchor Forests through time. These components are essential to a coordinated management effort across large landscapes. Such landscape scale analyses are required to plan for and reduce the risk and loss due to wildfire, insects, and disease, and to maintain ecosystem functions which are subject to a variety of disturbance and stresses from climate change, fragmentation, and impacts from insects and disease.

For many years, sustainability has been characterized by the overlapping area of three interlocking circles reflecting a balanced intersection of ecological, social, and economic factors. The image is simple however the challenge and barriers to its implementation are huge.

The three study areas include lands managed by the Yakama, Colville, Spokane, and Coeur d'Alene tribes. All of these tribes have lands adjacent to federal ownership which are in need of forest health and wildfire hazard reduction treatments. Without treatments these lands put tribal resources at risk from the impacts of wildfire, disease and insect infestations.

The Yakama and Colville tribes have some manufacturing capacities that could utilize materials from thinning and fuel treatments, but in many parts of central and eastern Washington there is insufficient processing and milling infrastructure to meet well documented forest restoration needs.

The two tribes also have reserved rights to access and use resources on adjacent national forests that are suffering from deteriorating conditions and increasing threats of loss due to large landscape wildfire, insect damage and disease.

The recently completed IFMAT III assessment found that tensions surrounding chronic underfunding, retention of key staff at all levels and uncertain federal commitment to trust responsibility as noted in prior IFMAT reports have not been rectified. In its evaluation of these issues, the IFMAT team offered a new approach, which it named "FIT." FIT is an acronym for Fire, Investment and Transformation, a three-legged process for encouraging

developments in Indian Country.

The Anchor Forest concept “fits” very nicely under the FIT umbrella because it encourages participating land owners to [1] actively manage the land to proactively reduce prospective threats from Fire, insects, disease and climate change, [2] Invest in infrastructure to help defray management costs and provide economic benefits to forest land-owners and, [3] Transformation, which drives the need for change necessary to foster movement toward ecologic and economic sustainability.

The concept of sustainability itself is undergoing a transformation, moving inexorably in the direction of stewardship as defined by the intersection of new interlocking circles representing Capability, Commitment, and Vision. The success of collaborative landscape management and Anchor Forest will be determined by the collective ability to work toward these stewardship attributes. These attributes include maintaining healthy and diverse ecosystems that are able to sustain plants, animal habitat, water, air quality, and forest products integral to life.

Capability means sufficient, dedicated and competent interdisciplinary staff with access to technical expertise as well as the research communities. Harvest and processing infrastructure to support the sales of forest products and creation of employment must be available. Adequate financial resources for investment in support of both short and long-term economic, ecological, and cultural objectives will be required both from the public and private resources.

“The threats facing our forest do not recognize property boundaries; we must operate at a landscape scale by taking in “all lands approach”. [Western Governors Association, Agriculture Secretary Tom Vilsak 2009]



A hardwood forest owned and managed by the Lac du Flambeau Band of Lake Superior Chippewa in Wisconsin. IFMAT III team member, Larry Mason, took this picture

Commitment means enduring ties by local people to the land and in the community. Collaboration as envisioned for Anchor Forest is a process of social learning and durable relationship building reliant upon the establishment and maintenance of trust. Significant forest lands must be dedicated, harvested, and cared for; not sold, converted, or abandoned.

“Indian tribes are here to stay. We will not sell our land or sheer down our forests during wavering economic times and relocate our operations elsewhere. Our ancestors-our culture-are committed to the land upon which we live.” [Former ITC President Jaime Pinkham 1995 testimony National Indian Forest Resources Management Act Oversight Hearing]

Vision is the ability to see the past in the context of the potential and future opportunity. Vision evolves

when critical thinking and observations form the guiding principles and understandings of the interconnected world. Indian tribes, as keepers of Traditional Ecological Knowledge, with permanent ties to land and place, are uniquely qualified to contribute to the vision. They bring long term perspectives and place-based responses to changing conditions. Who better to help those of us who are less experienced learn how to manage change over succeeding generations?

“Start with the rising Sun, and work toward the setting sun, take only the mature trees, the sick trees, and the trees that have fallen. When you reach the end of the reservation, turn and cut from the setting sun to the rising Sun in the trees will last forever.” [Menominee Chief Oshkosh 1854].

Anchor Forests are the modern-day version of tribal land management principles that have been passing from one generation to the

next for thousands of years.

IFMAT III noted that tribal forests are much healthier than federal forests. We should not be surprised that tribal forests have sustained Indian communities through good times and bad times for time immemorial.

We should, however, wonder what we can borrow from Indian forestry that can help us do a better job of managing and protecting our rapidly declining federal forests. In my professional opinion, Anchor Forests are the answer. They provide the most promising approach capable of stabilizing at-risk ecosystems while providing a politically and publicly acceptable economic base that can, in turn, sustain Anchor Forests across very large landscapes that join Indian Country with other federal, state and privately owned forests. We need to get started now.

Tribes as Managers of Federal Natural Resources: A “What If” Question Whose Time Has Come

By Brett Kenney, Tribal Attorney, Coquille Indian Tribe, North Bend, Oregon

Editor’s Note: A version of this article was published in “Natural Resources and the Environment,” Volume 27, Number 1, Summer, 2012 © American Bar Association; reprinted with gratefully acknowledge permission of the journal.

Say you were touring in southwest Oregon and you make the impromptu decision to take a little woods tour. You navigate your way 2.5 miles up twisty Bureau of Land Management [BLM] forest road 29-10-9.0 in a remote part of rural Coos County and are immediately confronted by the visible results of three radically different forest management regimes: a clear-cut mono-culture belonging to an industrial timberland owner, an unthinned and little managed mono-culture in BLM care and, finally, the Coquille Indian Tribe’s forest, independently certified by the Forest Stewardship Council [FSC] - the only forest that meets the social, economic and environmental goals of the 1994 Northwest Forest Plan, where water quality is constantly monitored and native trees live long lives and create new habitat for a variety of native species.

The Coquille Forest symbolizes the efficacy and balance of tribal management. It is actively managed for multiple

purposes. It protects listed species, creates old growth, and creates jobs. It advances tribal cultural restoration and encourages public recreation. Considering all relevant factors, the Coquille Indian Tribe’s forest is the best managed in the region, which makes many wonder why tribal management should not extend to nearby and adjacent federal lands. The opportunity for that to happen is drawing near.

This article examines how the federal government encourages tribal management of federal natural resources and provides some clues about future roles that tribes may play in federal lands management.

The Coquille Indian Tribe has no treaty or large reservation, and lives in an isolated part of rural Oregon. Perhaps the Coquille Indians’ greatest assets are their concern for their place in the world and their interdependent relationships with their surrounding communities. The relative success of the Coquille Forest can be traced back, in part, to a Coquille world-view, which balances environmental protection with economic security. On one hand, the Coquille Tribe recognizes that natural resources are not a mere commodity, but part of a complex interrelated ecosystem to be managed for long term benefits. On the other hand, the tribe believes that active management of forests provides a basis for subsistence.

The historical record indicates that the Coquille Tribe never let nature simply take its course. They have, since time immemorial, actively managed their ancestral forests through controlled burns, tree girding, and encouragement of desirable native species. The Coquilles live and work near their forests. They directly experience the consequences of their management choices. As they do so, they gain firsthand knowledge of their place in the world and how to live there.

There is a growing recognition of the importance of including indigenous world-views in federal land management. This recognition draws on the fact that Indian tribes are sovereign nations [governments] with the ability to manage land and resources within their jurisdictions, and to co-manage resources off-reservation as part of their right to exercise treaty or other reserved rights to use and access resources on federal lands. Many positive social, environmental and scientific consequences can flow from this recognition.

First, tribes possess, to varying degrees, ‘traditional ecological knowledge’ [TEK] based on generations of place-based experience. Think of traditional ecological knowledge as a large and cumulative body of knowledge – both a practice and a belief – that evolves through simple adaptation and is handed from one generation to the next. At its



The Pony Bridge in the Quinault Canyon on the East Fork of the Quinault River, 2.5 miles from Graves Creek, where the road ends and the trail begins. Larry Workman photo

core, TEK describes the many relationships between living beings – including humans – and their environment.

TEK is anecdotal, dynamic and shared among a native community. It has the capacity to add to scientific knowledge in some very surprising ways. For example, the development of aspirin, which is derived from willow bark; digitoxin, a congestive heart treatment drug derived from foxglove; and quinine, a malaria treatment derived from chichona. Each of these can be traced to traditional ecological knowledge. It is arguably in the national interest to assure that each region's native population perpetuates its practices for gathering and adapting TEK. [1]

Second, tribal management leverages financial resources in addition to those normally available from federal and state governments. Many tribes are willing and able to use their tribal resources or to seek grant or foundation funding opportunities to manage federal lands.

Third, tribal management is relatively uninfluenced by the ebb and flow of national or state policies, which have dramatically impacted natural resources management on federal lands, not always yielding positive or science-based outcomes.

Finally, tribes have an inherent interest in both the health of their aboriginal lands and their local economies, a native cultural ethos balances a need to conserve resources for future generations with a need to provide a current livelihood [2]

Today, the federal government is be-

ginning to work with tribes to “co-manage” natural resources. Co-management builds on the foundation of the special relationship between tribes and the federal government.

Co-management embodies the concept and practice of two [or more] sovereigns working together to address and solve matters of critical concern to each. It should be viewed as collaborative or cooperative management, a call for an end to federal unilateralism in decision making affecting tribal rights and resources, not a demand for a tribal veto power over federal management actions. Co-management is a process that incorporates, in a constructive manner, the policy and technical expertise of each sovereign in a mutual, participatory framework. [3]

Two broad federal policies, the Federal Trust Responsibility and Tribal Self-Determination, have influenced the expansion of tribal management. Many Indian lands are held in trust by the Bureau of Indian Affairs [BIA] for the benefit of Indian people or tribes. This federal trusteeship historically imposed traditional fiduciary trust responsibilities on the federal government. [4] Today, however, many consider the federal trust responsibility to be at risk of significant change. In 2003, the U.S. Supreme Court opined that the BIA's responsibility over trust lands depends, in many instances, on the degree to which it manages day-to-day activity there. [5]

Despite any flux in the scope of this

trust responsibility, Tribes and the federal government retain a ‘special relationship.’ This unique relationship is referenced in virtually every piece of modern Indian legislation. One consequence of this relationship is that federal agencies more frequently consult with tribes on a variety of topics. Presidents Clinton and Obama both have directed federal agencies to consult tribes when their proposed policies could affect tribal interests. Today, tribes and federal agencies frequently meet to discuss items of mutual interest. These conversations inevitably include natural resource topics and create opportunities to discuss partnerships between tribes and federal agencies.

The broad federal policy of Tribal Self-Determination is currently the dominant federal approach to Indian affairs. It is

based on the recognition the federal government should work to strengthen tribal government capacity to operate programs for the benefit of their own communities. This policy has led Congress to adopt laws transferring federal functions to tribes, including co-management functions.

Before the modern Self-Determination Era, federal policies centralized decision making for Indian lands, timber and other resources in the BIA. Exclusive handling of virtually all decisions pertaining to Indian lands and federal programs for Indians by the BIA perpetuated dependence on federal services and reduced opportunities for employment and economic development to benefit tribal and local communities. The BIA undertook management actions with little or no communication or cooperation with Indian landowners, and gave little consideration to traditional management knowledge, values or skills.

Enactment of the Indian Self-Determination and Education Assistance Act of 1975, and the Tribal Self-Governance Act [TSGA], provided tribes with the opportunity to tailor and operate all BIA programs serving tribes and Indian lands to the needs of their own communities, with the exception of inherently federal functions. Funding is provided through contracts or compacts negotiated on a government-to-government basis each year.

In 1975, only 1.5 percent of BIA programs were administered by Indian tribes

and organizations. Today, more than half of these programs are tribally operated. These programs have also allowed tribes to develop and focus their expertise in natural resources and other fields, often in ways that complement the capacities of federal resources agencies.

Self-determination signaled a change in federal Indian affairs policy. In a few decades, hundreds of tribal governments assumed operation of their own federally-funded programs, increasing service delivery and reducing federal bureaucracy.

Between 1990 and 2010, Congress passed several laws expanding the authority of tribes to exercise delegated federal Environmental Protection Agency [EPA] authority in Indian country. These laws offered tribes the opportunity to obtain “treatment as a state” [TAS] status under several federal environmental laws, including the Clean Air Act, Clean Water Act, Toxic Substance Control Act, and the federal Insecticide, Fungicide and Rodenticide Act.

Although the Clean Water Act authorizes tribes to enforce water quality standards within reservation borders, this power alone would do little to ensure that waters entering those reservations meet tribal water quality standards. Consequently, federal courts and the EPA have recognized the authority of TAS participant tribes to regulate upstream off-reservation discharges. TAS statutes advanced the federal policy of Tribal Self-Determination and expanded tribal off-reservation management authority.

A key provision of the TSGA authorizes the transfer of management over Department of the Interior [DOI] off-reservation programs that have special geographic, historical or cultural significance to a tribe. This little-utilized provision breaks ground in two ways. First, it expressly authorizes tribal management of a wide range of off-reservation programs. Second, it makes Interior programs [such as those performed by the Bureau of Reclamation, National Park Service and BLM] and their associated funding potentially available for transfer to tribes.

Each DOI agency retains discretion over whether to transfer requested programs to tribes. Perhaps for this reason,



Fall descends on the Idaho-Montana border near Lookout Pass, an area overrun by the Great 1910 Fire, thought to be the largest in U.S. history. This is the forest that grew back after the fire. Were this tribal forestland, it would have been thinned long ago. The western sweep of the same photo appears on Page 57. Jim Petersen photo

only 10 or 564 federally recognized tribes entered self-governance funding agreements with non-BIA bureaus in 2008 and 2009.

The 2004 Tribal Forest Protection Act authorizes the secretaries of Interior and Agriculture to contract with tribes to reduce potentials for fire, disease or other threats to a tribal community or Indian forestland or rangeland, and that the land to be managed ‘presents or involves a feature or circumstance unique to that Indian tribe [including treaty rights or biological, archaeological, historical or cultural circumstances].’

These efforts have grown out of the policy of Tribal Self-Determination, the federal trust responsibility, and the rights that tribes have under various treaties, statutes, executive orders, and at common law.

In other cases, executive agencies have pursued tribal co-management under the authority of organic agency laws, such as the Federal Land Policy and Management Act of 1976 [FLPMA], the Fish and Wildlife Act of 1956, and the Multiple Use and Sustained Yield Act of 1960.

One good example of this approach is in Idaho, where the US Fish & Wildlife Service [USFWS] and the Nez Perce Tribe

have implemented a tribally crafted wolf recovery plan with great success. This plan called for management actions both on and off the Nez Perce reservations and on and off Nez Perce treaty ceded lands.

Nez Perce-USFWS-State of Idaho co-management is founded on a cooperative agreement entered under the broad authority of the Endangered Species Act [ESA] and two broad organic acts. This approach is advantageous because it allows the contracting parties to craft a government-to-government agreement that is tailored to the needs of the resource.

A similar approach was used in the dry climate of central Oregon, where federal lands managers have successfully prevented and suppressed fires on thousands of acres of Forest Service and BLM lands. This success has bred its own challenge, however, as these agencies have more acres requiring fuels treatment than they can manage. Nearby, the Confederated Tribes of the

Warm Springs Reservation (CTWS) own and operate Warm Springs Forest Products, a long-standing and well-respected forestry and forest-product operation. The CTWS power their Warm Springs Forest Products mill by biomass co-generation. In 2006, under the authority of the Multiple Use and Sustained Yield Act and FLPMA, the Forest Service and the BLM entered a Memorandum of Understanding for the Purpose of Providing a Framework for Planning and Implementing Forest and Rangeland Restoration and Fuels reduction Projects [the CTWE MOU]. Under the CTWS MOU, the Forest Service and BLM agreed to offer the CTWS 8,000 acres of forestland per year for forest restoration and fuels reduction projects in exchange for CTWS forestry, planning, and administrative resources within identified Federal lands. The CTWS also agreed to pursue an upgrade of their biomass facility’s net generation capacity.

In 2006, under the authority of the Multiple Use and Sustained Yield Act and FLPMA, the Forest Service and the BLM entered a Memorandum of Understanding for the Purpose of Providing a Framework for Planning and Implement-

ing Forest and Rangeland Restoration and Fuels reduction Projects [the CTWS MOU].

The Nez Perce and CTWS MOUs represent an evolution in tribal co-management of federal lands because, in addition to recognizing the special relationship between the federal government and Indian tribes, these agreements [a] expressly acknowledge the value of tribal natural resources knowledge, capacities and expertise; [b] result from and recite a long-term positive working relationship; [c] do not impose treaty or aboriginal use boundaries on the lands where tribal management expertise may be used; and [d] reflect an exchange of resources between tribes and the federal government.

This approach – negotiating a memorandum of agreement on a government-to-government basis – allows for great flexibility available through direct government-to-government contracting under the authority of organic federal natural resources management laws. There are, however, concerns to be addressed in any proposal to delegate federal power to an Indian tribe.

First, parties must be cognizant of the federal non-delegation doctrine, derived from the U.S. Constitution, which limits

Congress' authority to pass laws delegating executive power to non-federal officials. [6]

To some degree, this risk is minimized in delegations to tribes. The TSGA itself prohibits the delegation of "inherently federal functions." These functions have been interpreted to include powers that federal courts determine to fall under the non-delegation doctrine, and discretionary functions that are vested solely in federal officials. Provided that there were no constitutional issues, Congress could vest tribes with some of these functions as well, on a case by case basis.

Second, tribal sovereign immunity, which acts as a general bar of adjudicative subject-matter jurisdiction, may raise concerns about delegations of executive power to tribes if they have no means to enforce applicable laws or agreements. Congress could authorize federal agencies to delegate powers and retain the authority to revoke delegations under appropriate circumstances to retain the involvement of the federal agency and ultimate liability for management actions.

Tribal involvement in federal land management may raise concerns from anti-tribal sovereignty, business or con-

servation advocacy groups. Some Indian law scholars caution tribes that states partnering with tribes under co-management agreements may use such agreements [or courts may interpret such agreements] in such a way as to undermine tribal sovereignty. [7] Despite legal and political challenges, tribal management of federal natural resources continues to create new and collaborative approaches to care for land.

Meantime, back in the forested hills of southwestern Oregon, the Coquille Indian Tribe's FSC-certified forest lies amid a checkerboard of BLM-managed forestlands known as the "Coos Bay Wagon Road" [CBWR] lands. At least 51,000 acres of these CBWR lands lie within the tribe's adjudicated aboriginal homeland in Coos County, Oregon.

Although federal law prescribes that revenue from these lands will be provided to counties, the BLM manages these lands on a forest thinning regime that provides very little funding. Due to the threat of protests and lawsuits, the BLM has not approved any regeneration harvest in this

area for years. The BLM has not met the economic targets of the Northwest Forest Plan and the condition of these forests continues to deteriorate.

For several years, the tribe and Coos County have worked to develop a plan for the tribe to manage these federal lands and share revenues with the county. Under this plan, the BLM would transfer broad management authority to the tribe, but the tribe would continue to manage the lands in compliance with the Endangered Species Act and other applicable federal laws. This approach would give the Coquille the opportunity to expand their successful forest management across their aboriginal lands, facilitate recovery of ESA-listed species, improve fish habitat, and assist a financially-strapped rural county's ability to provide basic services. If Congress acts on this proposal, a small Oregon tribe could demonstrate the next evolution of tribal Self-Determination and tribal co-management.

Footnotes:

[1] Fikret Berkes, *Sacred Ecology – Traditional Eco-logical Knowledge and Resource Management* (1999)

[2] Mary Christina Wood, *Nature's Trust: Reclaiming an Environmental Discourse*, Va. *Envtl. L.J.* 243, 265 (2007)


[3] Ed Clay Goodman, *Protecting Habitat forff-Reservation Hunting and Fishing Rights: Tribal Co-Management as a Reserved Right*, 30 *Envtl. L.* 279, 284-85 (2000)

[4] *United States v. Mitchell*, 463 U.S. 207 1983

[5] *United States v. White Mountain Apache*, 537 U.S. 465 (2003)

[6] Generally, the U.S. Supreme Court allows Congress to make delegations outside the federal government if the delegation includes specific limits on the delegate's powers and discretion. *American Power & Light Co. v. SEC*, 329 U.S. 90, 105 (1946). See Harold J. Krent, *Fragmenting the Unitary Executive: Congressional Delegations of Administrative Authority Outside the Federal Government*, 85 *Nw. U.L. Rev.* 62, 111 (1990)

[7] Shelly stokes, *Ecosystem Management Plans: A Sound Approach or a Threat to Tribal Rights?* 27 *Vt. L. Rev.* 421, 441 (2003)



A very muscular Menominee Indian logger faces a mature oak in June of 2013. The Menominee's manage and harvest some very impressive stands of old growth hardwood and softwood on their lands in Wisconsin. Jim Petersen photo

Climate Change Brings Risks and Opportunities To Tribes and Their Forests

By David Cleaves, Climate Change Advisor to the Chief, U.S. Forest Service and
Adrian Leighton, Chair, Natural Resources Department, Salish Kootenai College, Pablo, Montana

The rapidly changing climate has introduced new risks and opportunities for tribal forests and forestry. These changes are affecting the ability of tribes to realize their visions for well-being and sustainable development. The range and scale of impacts is large. The changing climate is imposing new threats for important species of plants (including trees), wildlife, and cultural resources and sacred sites. At the same time, it is influencing global, national, and local markets for timber and non-timber products and may create business prospects for products from tribal forests and woodlands, including carbon sequestration, and renewable energy.

Tribes are adapting to the changing climate as they have for centuries, but in this era of new and perhaps unprecedented climatic fluctuation, tribal forests and forestry programs can play an important adaptive role, but forestry programs that are underfunded, understaffed, or poorly connected to information sources will not be able to fully serve in this capacity.

IFMAT III explored climate change as an emerging driver for Indian forests and forestry. Although the entire series of IMFAT studies cover a period of the most rapid climate change in centuries, the impacts of these changes are only now becoming evident. As Indian forestry is shaped increasingly by climatic changes and variability, it becomes more important to deal with these influences in sharpening forest practices and plans to meet tribal visions.

The National Oceanic and Atmospheric Administration [NOAA] has shown that the average temperature in the lower 48 states has increased 1.3 degrees F over the last 100 years; the top ten warmest years have been since 1990.

Growing seasons have lengthened by 2 weeks since 1900, mostly over the last 30 years, more rapidly in the West than the East. Plant hardiness zones have shifted northward and many changes are being observed in wildlife wintering ranges, pollination, hibernation times, and other phenomena.

Precipitation has increased 6% in the last 100 years and has shifted more from snow to rain, especially in heavy downpours. Snow pack has decreased by



Salish Kootenai tribal timberland near Ronan, Montana. Jim Petersen photo

as much as 75% in some areas and snow coverage has been reduced by 7% since 1970. The odds for extreme events – heat waves, downpours, and droughts are increasing, in different parts of the country. The western drought is one of the worst on record and has been combined with record temperatures.

These changes are impacting forests. Some tree species (in dry forests) will be growing more slowly, while others (in high-elevation and Eastern forests) may grow faster. Less snow will lead to drier conditions, decreasing tree vigor and increasing susceptibility to insects and pathogens. Older forests, especially those already under serious soil moisture stress, will suffer.

Tree growth and regeneration may be more affected by extreme weather events than gradual changes in temperature and precipitation. Disturbances such as wildfire, bark beetles, flooding, and invasive species will have the big effects on forest ecosystems. Wildfire, alone, is expected to at least double by the mid-21st century. Along with these changes, species habitats will shift, in general moving up in elevation and northward. For a more complete summary of research findings and trends,

check out the recent synthesis (Vose et al. 2012) that guided the forest sector section of the forthcoming National Climate Assessment.

IFMAT III findings reveal that climate change is already influencing the costs (e.g. fire management), practices (e.g. reforestation and forest health), operations (winter logging), forest values (wildlife populations and culturally important plants), and policy (federal mandates for adaptation planning).

Tribal forest managers are observing multiple impacts of a changing climate. Their observations are often validated by traditional tribal level knowledge and the memories of tribal elders. Among the impacts: more serious wildfires and insect and disease activity, more downpours, more severe droughts, changes in the timing of plant and animal activity, and the presence of invasive species. These impacts vary widely by region and tribe. Climate change impacts will also exacerbate the social vulnerabilities and inequities felt by tribes. These changes will likely increase the costs of managing forests, harm community infrastructure with extreme events, and encourage the creation of more unfunded policy mandates to respond to climate change effects.

Many managers and tribal leadership already recognize the implications of the rapidly changing climate for their prosperity and culture. They are trying to adapt to these changes using a suite of general forestry tools and methods. Some tribes are building adaptation to climate into their forestry programs and practices. Limited funding and access to current science and research are major obstacles.

Adaptation of tribal forest resources to climate change cannot be successful without an effective, well-funded and staffed forest management program to create and maintain resiliency to all that climate change brings. The full set of IFMAT III recommendations are designed to restore adaptive capacity and improve the success of future attempts to manage vulnerability to ecological, social, economic, and cultural values of tribal forests.

Tribes need improved access to science-based information about the impacts

of the changing climate and management options for local forests and woodlands. Also, there is little information about the carbon sequestration value of tribal forests and woodlands and how these lands might benefit from programs and policies to price carbon dioxide emissions offsets. Regular assessments of climate change effects are conducted by the federal government, but are usually not detailed enough to inform tribal forestry decisions. One promising trend is that intertribal organizations are developing more tools and resources for tribal forest managers as are numerous coalitions and networks of university, tribal college, and federal agencies.

Tribes can be key players in landscape scale climate mitigation partnerships, including the Anchor Forests concept that is being advanced by the Intertribal Timber Council. Only large scale partnerships – like the Anchor Forests concept – can hope to effectively mitigate or soften the many changes that accompany climatic and economic fluctuations that, in turn, influence forest resiliency and associated management options.

Tribes bring a great deal to their conservation partnerships: traditional knowledge, holistic approaches, and the proclivity for active, adaptive management. Their long histories of active management and resilience in the face of limited resources hold many lessons that will be useful in managing larger landscapes.

Overall, tribes have not had ready access to funds or technical services related to climate change planning, adaptation and response. At the time of the IFMAT III study, new federal arrangements for promoting landscape-level collaboration and science delivery had not yet reached tribes. Nor had tribes or the BIA been successful in gaining access to new federal funding for climate change response developed during the period 2009-2012. However, this is changing. Both the Department of Interior's Landscape Conservation Cooperatives (LCC's) and US Geological Service's Climate Science Centers are now engaging tribes, and the President's FY 2014 budget request for BIA includes additional funding for tribal climate response.

IFMAT III recommended that all regional and national assessments of climate impacts on the forest resource include Indian forest lands. It was also recommended that federal agencies evaluate the allocation of federal agency funds for climate change and take measures to assure a more equitable distribution of funding to tribes.

More should be done to encourage the exchange of traditional ecological knowl-

edge and Western scientific knowledge, recognizing the strengths that each brings to the challenges of adaptation. Federal agencies should develop better ways to coordinate delivery of science findings and technical and financial services to tribes and to help tribes sort through climate-driven vulnerabilities and fold this information into plans and management practices.

IFMAT III also recommended that tribes incorporate climate change adaptation planning into their integrated resource and forest management plans using tools such as the template developed by the Institute of Tribal Environmental Professionals (ITEP). They urged greater support for agency, tribal colleges, and intertribal organizations in helping tribes speed up climate adaptation assessment and planning.

In addition to the specific climate change recommendations, most of IFMAT III's main recommendations would enhance the resiliency of tribes, reducing exposure to climate change impacts and strengthening the adaptive capacity of tribal forestry programs and organizations, and relationships with federal agencies. Climate change only intensifies the need for the improvements recommended in the IFMAT III report.

Although tribes have dealt with climate fluctuations for centuries, the speed and volatility of the current climate shift has come at a time when the capacities of some tribes have never been more strained, further undermining their ability to practice more active and effective forestry that is necessary to increase forest resilience to climate disturbances and capture opportunities that emerge as the climate changes.

In addressing the barriers to realizing the full potential of Indian forestry institutions, including funding inequities, reduced technical expertise, and a lack of forest management on neighboring ownerships, IFMAT III's recommendations set the stage for stronger conservation partnerships leading to significant advancements in the practice of forestry in tribal forests and on adjacent ownerships.

Increasingly, "state of the art" forestry is becoming "climate-smart" forestry that must adapt to a changing array of impacts to meet the tribal vision for the forest resource. This is not a magic climate change "pill", a replacement or a competitor for active forest management. It comes from building climate change knowledge into forest management and practice.

Climate-smart forestry decisions involve analyzing the climate-sensitivity of forestry choices; thinking through a range of future

scenarios and outcomes; building actions and priorities to address the relative vulnerability to different climate and non-climate impacts; building adaptive responses, flexibility, and future options into forest plans; challenging existing guidelines that were based on assumptions of static climate; being open and explicit about what is known and not known; and considering how management actions will affect the forest carbon sequestration and greenhouse gas emissions. IFMAT III's recommendations can help make tribal forests models of climate-smart forest management.

Just as the IFMAT III's analysis took on a set of questions to assess the Indian forests and forestry, the team recommended that tribes, federal agencies, and their partners wrestle with the following questions as they design and implement programs and policies in a future increasingly shaped by a changing climate.

How will the conditions of tribal forests and woodlands and the benefits they provide be affected by changes and variability in the global and regional climate?

What role will forests play in the overall adaptation by tribes to the changing climate? Is adaptation a part of a tribe's vision for itself and its forests? How is this vision of resilience being built into the forest management and integrated resource plans?

What investments should tribes make now for (climate-induced) impacts that will be more acute in the coming decades?

What new skills and capacities should tribes develop to prepare them for impacts, risks, and opportunities being presented by the changing climate?

How do we (tribes, federal agencies, and landscape partners) improve the processes for creating, delivering, and adopting knowledge to improve climate-resilience?

What are the most important gaps in scientific knowledge and application that should be addressed to improve the resiliency of tribal forests?

How might we have to modify organizational, operational, planning, and other processes in tribal forests to improve resiliency?

How will relationships with the government be affected as different federal policies – wild land fire management, disaster response, species management, sustainable development, air quality, water, and others – be revised to respond to the increasing influence of climate change?

What new partnerships can we develop to involve tribes and better capture the scale and other advantages of landscape scale conservation in responding to climate change?

Planning for Climate Change: The Tribal Challenge

Sean Hart, Climate Change Coordinator, Bureau of Indian Affairs

Dealing with rapid climate change is the defining issue of our time. The scientific debate is all but over. Research is now shifting to understanding processes and modeling future ecological conditions and impacts on life. The Federal government has been actively engaged within its mission areas, and now has the President's Climate Action Plan of June 2013 as official unifying Federal policy. Agencies now have clear direction to "adapt" their management policies to address the negative impacts of climate change. Mainstreaming adaptation into the disparate scope of Federal agencies will take time resources ["time resources" or "time and resources"?] for Federal land managers. But, what about the Federally recognized tribes? What does climate change adaption policy mean for them as they face the impacts of rapid climate change?

Climate change is expected to disproportionately impact tribes because of their traditional and cultural ties to land and place. The potential impacts of climate change span the entire range of tribal programs, resources, and cultures in unique ways. In some ways, the most dependent users are the first to see change on the ground. Local observers are already highlighting changes in availability, timing, and access to traditional and subsistence plants, animals, medicines, and other cultural use resources.

There are over 56 million acres of tribal trust (surface) acres spread over at least 326 separate land parcels across the United States. While a changing climate will create impacts on all of those acres, the ability to implement climate adaptation management on trust lands is shared under a combination of tribal self-determination and Federal Indian trust management responsibility. Yet all practical natural resource and infrastructure management decisions are made at ground level by technical specialists under tribal leadership.

The challenge for tribes isn't just complexity, it's also capacity. Federal managers will be challenged to identify, implement, and evaluate appropriate climate adaptation management for large-scale ecosystems with popular animals and economically valuable plants. But, tribal managers need additional detailed research and management recommendations for a wide variety of traditional flora and fauna that are culturally valuable but are not studied or known by researchers. Tribal leaders depend on recommendations from their land and natural resource managers to set priorities and make prudent investments, and tribes don't have the capacity to develop that information on their own.

For years, land managers have been trained under the assumption that an ecosystem is essentially in a steady [static?] state. Working with decades of available research, as well as detailed inventories and intimate local knowledge, managers, who could implement treatments, were comfortable with expected outcomes. Today, they are confronted with unprecedented rapid change and deep uncertainty that the conditions which existed when the foundational research for their fields was performed might not exist in the future.

Tribes need resources to enable them to cope with climate-related challenges that lie ahead, such as program-specific training to provide state-of-the-art techniques and to ensure that they have quicker access to new research as it becomes available. The old model of periodic release of long-term research no longer serves the need for managing the environment in this age of rapid climate change.

Professional societies and standards boards also need to adjust to quickly changing climate conditions. Professional standards, management guidelines, and even zoning codes give managers guidance to address common challenges. One hundred-year floodplain maps may be out

of date for current conditions, but, with the exception of sea level rise maps, very few locations have access to flood maps for 50-100 years ahead. Floodplain maps are one tool that can enable any manager to address common issues in similar ways. However, without a way to continually update these standards and guides, another tool – design standards for floodplains – which managers use to deal with uncertainty is, in the era of rapid climate change, rendered invalid and potentially counterproductive. Standards like the floodplain maps also inform government leaders, who look to technical experts for recommendations when adjusting those tools, therefore highlighting the need for even more training for managers.

Tribes also need basic information on resources and threats. Most natural resource-based programs have inventory information, but all program managers will need to develop vulnerability assessments in order to overlay the potential impacts of climate change onto resource inventories. While tribes have the technical capacity to perform high-level vulnerability assessments for their programs, detailed program-level analysis is a technical specialty which normally requires assistance from outside specialists. Vulnerability assessments also enable natural resource managers to consider the toughest question of all: how and where to plan for ecosystem functions to sustain culturally and environmentally traditional plants and animals. Without such technical information, it's hard to identify threats and suppress invasive species, plan for refuges, or manage relocation [of what?] to off-reservation habitats.

Furthermore, limited tribal capacity doesn't just affect climate adaptation management on reservations. Participation in cooperative efforts for mutual benefit is also critical for adapting to climate change. But adaptation solutions, like natural resources, don't recognize

artificial boundaries. Large-scale landscape design was identified as necessary to maintaining ecosystem integrity before climate change became a consideration.

The Federal government has been working to effectively implement inter-agency landscape-scale management, including encouraging interagency cooperation on addressing climate change. Tribal participation in cross-boundary projects would bolster landscape-scale project effectiveness, but there is a lack of capacity to allow tribal staff to attend coordination meetings and forums. Tribal staff and land base [size? ecology?] will be critical to the success of some adaptation strategies.

In some areas, one tribe or a group of tribes will be the single biggest partner for a large-scale ecosystem management project. The Intertribal Timber Council's Anchor Forests concept is one tribally led effort for large-scale multi-partner landscape planning. There are also nascent plans for tribal conservation areas which will need cooperators to achieve the scale needed to generate positive impacts for climate change adaptation.

Tribal capacity is what's needed to enable tribes to prepare for, adapt to, and undertake projects to address the impact of rapid climate change. On the technical side, tribal management staffs need access to program-specific training to introduce them to the new paradigm of management in an uncertain, fast-changing environment and to identify how to access the new stream of technical information. Additional staff time also is required for full participation in coordinated planning and implementation, both internally and at the interagency landscape level.

To address these challenges, tribes need support in:

- **Information Sharing:** Tribes need conduits to quickly access relevant information and to share traditional ecological knowledge (TEK). It can't always fall on the manager to search the Internet or a multitude of research journals to find pertinent and timely information. Tribes also need assurances that TEK will be

considered a relevant science with sensitive aspects protected from unauthorized disclosure.

- **Decision Support Tools:** The applied research community and Federal agencies need to accelerate the design and building of decision support tools which can centralize common information needs (climate projection, moisture regime change over time, sea level rise, etc.) so that local managers can focus their energies on the integration of management recommendations with local conditions. There are now web-based tools that can be periodically updated to maintain basic regional information that managers need. Greater communication with tribal managers about their needs also would help embed elements that are important to tribes in these tools.

- **Operational Science:** All managers, including tribes, need direction and support on how to adjust their inventory standards and with monitoring frequency to identify timely climate trend data. They also need to institute a cycle of recurring vulnerability assessments and perform gap analyses to identify unaddressed vulnerabilities.

Staff Participation: Tribes need the staffing to be able to attend cooperative adaptation organizations and forums, including large landscape scale conservation design and pilot treatments, and to be able to promote cooperative efforts like the Anchor Forests concept.

Fortunately, some of these areas of support are already in place and available to both tribes and the larger adaption management community. For basic science, there are interagency science delivery structures and forums. The Interior Department's Climate Science Centers (CSCs) and the Commerce Department's NOAA Regional Integrated Science and Assessment teams (RISAs) deliver high level data, and tribes have a seat on the CSC steering committee to ensure that their issues are considered. In addition, DOI Landscape Conservation Cooperatives identify and address operational science and cooperative project opportunities at the broad ecosystem scale through 21 different cooperative groups.

Tribes already participate in a majority of the LCCs and will hold three seats on the National Council [when?].

Within DOI, the Bureau of Indian Affairs (BIA) was identified in the President's Climate Action Plan as the prime mechanism to deliver support to the tribes. In addition to a coordination function to highlight resources available from other Federal partners, the BIA has a competitive grant program to help tribes build capacity for adaptation planning. The President's FY 2014 budget request calls for \$10 million to address climate change [for BIA for tribes?], up from \$1 million in FY 2013.

Climate change has far-reaching implications for the health and safety of tribal communities, affecting homes, businesses, water resources, food supplies, medicines, soils, and transportation systems. Differences in tribal governmental structures, populations, land bases, ecosystems, traditions, cultures, and resources preclude a single solution or protocol for addressing climate adaptation on all tribal lands. Enhancing tribal government capacity, including technical knowledge, decision support tools, and personnel, is the only way to ensure that climate adaptation on both tribal and adjacent non-tribal lands is effectively addressed. Local managers, both tribal and trust land [BIA?] managers, are able to translate complex science and recommendations into action on the ground to mitigate climate change's impact on their areas.

Tribes endured over thousands of years while adapting to slowly changing environments. Today, they are facing unprecedented challenges as they contend with accelerating rates of climate change, as well as dispersed and distant causal factors and limitations on adaptation actions they can undertake on their lands. In the final analysis, protecting existing tribal resources and life-ways through adaptation management will take a cooperative effort by well-informed tribal leadership and technical managers utilizing robust monitoring systems, while constantly adapting their management abilities in a time of rapid ecological change.

Building Partnerships with the Intertribal Timber Council, Tribes, Non-governmental Organizations and Public Agencies

By Don Motanic, Technical Specialist, Intertribal Timber Council

Partnership and leadership with the Intertribal Timber Council (ITC), tribes, non-government organizations (NGOs) and agencies have been developed in three stages over the years since 1976. Before ITC was established, there were no blueprints for building and maintaining partnerships and leadership, but the tribes and their partners understood the process was not linear and rigid, but needed to be flexible and repetitive with considerable overlap between one stage and another to develop partnership and leadership from formation to implementation, maintenance and achieving goals over the years.

*“Keep your friends close —
and your rivals even closer.”*
– Nelson Mandela

The ITC has utilized its findings and recommendations from 37 years of symposiums to help develop a series of strategic plans since its Vision 2000 original strategic plan in 1989, which has helped develop not only partnerships but also assisted with the National Indian Forest Resource Management Act and the periodic assessment of Indian forest lands and management that has been described in Evergreen Magazine articles.

Some of the factors associated with the effectiveness of each stage recur in other stages – others are stage specific and might even be counterproductive in other stages.

The personal and collective judgments by institutional leadership are crucial. It is important to note that, in the early stage, the factors will also depend on the “baseline” commitment and abilities of the stakeholders. Such a commitment has been reached by a recent partnership between the ITC and the National Association of State Foresters (NASF). The ITC and NASF have been participating at each other’s conferences over the past few years and have been submitting joint letters of



The Mescalero Tribal Youth Natural Resources Program that inspired the name, ONR. Don Motanic photo

concern to the U.S. Forest Service. The partners with ITC understand that the natural resource issues are a “we” issue.

“There’s not a word for me or I in our language because if you get in trouble when you break something, it’s we broke something.” – Bear and Ant Story by Johnny Moses (Tulalip/Spokane), Northwest Indian Storyteller, Wisdom of the Elders, Inc.

The stages format, suggestions and useful tools are intended both as a guide to awareness for those involved in partnership work, such as the ITC and NASF partnership and as a means of increasing partnership effectiveness.

Stage I - Preparing the field

This is the contemplative stage. It is characterized by the development and gathering of collective insights.

- Mutual need – Interdependence. We need each other to accomplish a task.
- Vision – What do we, as a partnership, wish to accomplish? Vision guides the partnership mission, protocols, and bylaws.
- Mission – How and in what ways are we going to accomplish our task?

- Value systems – Do we, as stake-holders, value similar things in the same way and to the same extent?
- Inclusion – What kind of stake-holders do we require as future partners?
- Wavelength – Are we all on the same “wavelength”?
- Simple language – Are we all “speaking the same language”?
- Cultures – What are the differences and similarities in the working and community cultures of our potential partners?
- What type of financial, funding or joint resource commitment is needed for partnership?

Useful Tools and Questions:

- Identify the stakeholders.
- Communicate with them.
- Set meetings and/or conference calls with recorded notes.
- Exchange Strategic Plans to review each other Vision/ Mission/Values
- Are all potential stakeholders represented?
- Do any of these tribes, agencies and NGOs have any previous experience of working together?
- Are there any historical or traditional barriers between the tribes, agencies and NGOs?
- Is any jargon or technical language used that could be a barrier?
- How do stakeholders feel about establishing a partnership?
- Are there any barriers to developing a common vision?

Stage II - Sowing the Seeds

In order to progress freely towards its aims, it is essential for the partnership to be able to rely fully on its partners. This phase occurs at the initiation of funding or a joint agreement by the partners for joint commitment of resources towards the partnership. Outreach meetings with possible training and development are also important at this stage:



Of this photo, its owner, Don Motanic, writes, "Partnerships with our family meant gathering knowledge, berries and generations – here in a Surprise Lake huckleberry field near Mount Adams in south-central Washington." The photo was taken in 1965.

Stage III – Harvest and Maintenance with An-Assessment, Implementation Plan, and Monitoring the Partnerships

Needs assessments can be undertaken in Stage III to determine the extent and nature of the concerns of the constituencies. The results of assessments are used in implementation after developing findings and recommendation.

- Frozen and latent periods – Is there a time difference between formation of the partnership and acquisition of funds or resource commitment for implementation?
- Strategy – Are we going to roll out the partnership's project goals one by one or will everything start at the same time?
- Time frames – Is it likely that the projects can be undertaken in the proposed time frames?

- Catalyst – Is a facilitating agency, university, or an organization like the National Congress of American Indians, required to bring the stake holders together as partners?
- Scope and view of the partnership – Are the objectives of the partnership many and overwhelming or few and manageable?
- Representation – Have we contacted as many tribes, agencies, constituencies, and organizations as we think necessary to solve the problem?
- Priorities – What are the priority issues and concerns that are common to all our agencies?
- Accountability – To whom are we accountable? Our organizations, the community and public or a donor?
- Rules, roles, responsibilities, and duties – All require clarity and may need to be written down.
- Communication – How are we going to have timely, consistent, useful, and comfortable communication that meets our needs?
- Democratic consensus and consultation – How democratic are we going to be? Democracy can sometimes be very time-consuming – how can we get a quick decision when necessary?

- Power – Is the distribution of power in the partnership a negative or positive factor?
- Socialization – The partners need this at an early stage in order to be comfortable with one another.
- Skills and expertise – Do we collectively, as a partnership, have the skills necessary to accomplish our aims?
- Funding cycles – Are we aware of the different financial calendars of the partners and how they affect the timing of the inputs?

Useful Tools:

- Establish communication channels.
- Ensure the free flow of information.
- Revisit representation.
- Define structure and management of the partnership.
- Provide by-laws, rules, and procedures.
- Check for the required skills and competencies.
- Plan for training and development.
- Monitor the formal and informal power-bases.
- Hold social events.
- Attempt to secure long-term financial commitments from partners.
- Harmonize program needs with donor funding cycles.

- Are the time frames realistic or too ambitious?
- Coordination – Is there good coordination between the implementing agencies? Is there any fragmentation or duplication?
- Compatibility – Are there any signs of incompatibility, tensions, competition, or conflict between organizations or individuals?
- Urgency – Are we aware that natural resource collaboration is urgently needed and that the partnership is for action rather than just talking.
- Direction – Are we overlooking anything important that might have been pushed aside in the rush?
- Evaluation and monitoring – What, how, where, who, why? Knowing the past is the basis for improving the future.
- Routine of partnership – Are the partnership operations now settled and embedded in the routines of the participating agencies?
- Maintain linkages – Preserve, nurture, and expand the relationships that have been forged.
- Interim/periodic reports – What "proof" and indicators of partnership success do the stakeholders and



The blue Pacific rolls on to a Makah Tribe beach near Neah Bay, Washington. Neighboring tribes gave the Makah's their name. In Salish, it means "people generous with food." The Makah's are legendary whalers, and have worked very hard to keep their language, culture and traditions alive in a modern world. Mark Rasmussen photo

donors require? How often is feedback provided and what is its quality?

- Continuity – Today's problems come from yesterday's solutions. Plan early for sustainability and anticipate the unexpected or worst-case scenarios.

Useful Tools:

- Draw up and communicate the strategy clearly.
- Finalize the "direction" of the projects.
- Capitalize on opportunities and enthusiasm.
- Coordinate actions and programs.
- Watch out for incompatibilities.
- Ensure that time frames are realistic and that deadlines are met.
- Plan and evaluate both partnership and intended change.
- Establish partnership working as the "usual way of doing business".
- Facilitate the institutionalization of programs.
- Build on connections and capital.
- Maintain the momentum and vigor of the partnership.
- Report to stakeholders, donors, seek further grants, and look for new

sponsors.

- Last and one of the most important tools, especially why tribes have survived and thrived through the years, a sense of humor.

"Hey, how about this," he said. "We're alive!" He clapped his hands and laughed. "They tried to make welders out of us and they tried to make barbers out of us, but the Indian people survived."

Billy Frank, Jr., Nisqually, On the River Banks with Billy Frank, Jr. NY Times, 1992. <http://www.nytimes.com/1992/11/26/style/on-the-river-bank-with-billy-frank-jr-indians-and-salmon-making-nature-whole.html>

"Know your enemy — and learn about his favorite sport." – Nelson Mandela

Our Natural Resources

The partnership process and stages has also been successful for the development of the collaboration between the national and regional inter-tribal natural resource organizations which is facilitated by the National Congress of American Indians call Our Natural Resources (ONR).

ONR recognized the critical impor-

tance of developing a cohesive, unifying strategy to address tribal natural resource issues and bring them to the forefront at the federal government level and in Indian Country. The Intertribal Timber Council has been a participant with developing the partnerships with ONR.

The goal of Our Natural Resources (ONR) is to advance a national tribal natural resource strategy for Indian Country that will bring a coordinated, unified, sustainable, and effective focus that will lead to positive change in policy and practice. ONR partners have worked to bring this effort to this stage and remain actively engaged in outreach, advocacy and policy development, research, communications, and education to create an overarching framework to guide advancement of the national strategy and facilitate collaboration and coordination. The ultimate beneficiaries of this work are the natural resources, tribal governments, and Native communities, from elders to youth.

"There can be no keener revelation of a society's soul than the way in which it treats its children." – Nelson Mandela

What Fate Awaits Leech Lake?

By Keith Karnes, Leech Lake Reservation Forester, Cass Lake, Minnesota

What will climate change do to the forests of the Leech Lake Reservation? This is a question that is being asked with increasing frequency, but the answer is elusive. Certainly climate fluctuations will bring major changes over time. We can no longer count on “normal” conditions that have been a part of life at Leech Lake for a long time.

Our winter seasons have varied over the past three years from record snowfall in 2011 to 80-degree days in March of 2012, to overnight temperatures touching below freezing in June 2013. On July 2, 2012, we had an immense straight-line wind event, the likes of which haven't occurred here for 80-plus years. In June 2013, central and southern Minnesota experienced another immense straight line

wind event that has become the costliest natural disaster in the state's history.

As you might imagine, planning work in our forests has become much more difficult than it once was - a result of the fact that we don't know when, where or what to plan.

Invasive species are an increasing problem on the Leech Lake Reservation. Some are associated with range shifts in climate while others are the result of species introductions, most notably the European gypsy moth and emerald ash borer.

Ash is a major component in Leech Lake hardwood forests, as it is in all northern Minnesota forests. Black ash, traditionally used by the Ojibwe people for basket making, is in the direct path of the emerald ash borer.

Our hardwood stands have been overrun by earthworms that are devouring the organic layer in our forest soils. As a result, we are seeing seedling regeneration problems. Invasive weeds are also increasingly taking over our roadsides, and our lakes are becoming infested with faucet snails, zebra mussels, Eurasian milfoil and other pests.

Our ability to manage these problems - the impacts of climate change - is severely constrained by a lack of funding. Trying to restore forest health and ecology that has been eaten away at for decades can be very costly. Available funding is declining despite our efforts to demonstrate a need for increases. When the Bureau of Indian Affairs is reminded of their responsibility to the forests of the Leech Lake Band of Ojibwe, they say



Summer silence envelops Leech Lake in the Chippewa National Forest not far from Cass Lake, Minnesota, home of the Leech Lake Band of the Ojibwe Tribe. Keith Karnes photo



Sunset on spectacular Leech Lake, near Cass Lake, Minnesota. Keith Karnes photo

they understand, but we see no action to address the situation. Our elders tell me this has been the case for a long time.

So, with questions of variability in weather patterns and an over-whelming list of invasive species concerns, coupled the lack of funding, I find myself asking, “What can I do?” The best answer I have come up with is to work collaboratively with others that share many of these same concerns. Enter the Chippewa National Forest [CNF].

The Leech Lake Reservation and the CNF share expansive boundaries and, thus, a concern for many of the same issues. Weather conditions in recent years have resulted in an increase of hazardous fuels within the wildland/urban interface. The Leech Lake Reservation has been awarded funding from the CNF four times in recent years. Funding has been used to complete some large scale fuels projects on Tribal lands.

These fuels projects have gone far

towards protecting Tribal housing from fire, while also providing employment for our wildland firefighting crew. Part of the crew was funded through an agreement with the CNF that utilized federal stimulus [American Restoration and Recovery Act] dollars to train wildland firefighters and get some fuels work done on adjacent CNF lands.

Collaboration between the CNF and Leech Lake Band has not been limited to fuels projects. Stewardship projects, numerous forestry project agreements and an annual wildland firefighting agreement have helped provide funding for employment of Leech Lake Tribal members at a time when BIA funding is decreasing.

Many of these projects are bringing much needed changes in our forests, returning fire to fire-dependent landscapes by removing hazardous fuels, thinning stands to promote growth and vigor and planting species that have become scarce within the stands. To be sure, we are

constantly collaborating with the CNF in order to improve the health and vitality of our forests. Ecologically healthy and diverse forests will help us fend off invasive species, creating forest conditions that are better able to withstand stresses brought on by climate change.

We are beginning to see a collaborative vision for the management of the CNF lands and adjacent lands occupied by the Leech Lake Band of Ojibwe – the melding of modern western science with traditional ecological knowledge in an ever-improving relationship that has exciting potential for the future.

As I look towards the future of forest management here, I can see some hope. While there are still many questions that don’t have answers, there are also some very promising possibilities. Through collaboration and cost-sharing, we can continue to work toward improving the forest health and ecology on the Leech Lake Reservation.

Stream Restoration Benefits Ecosystems, Economies and Cultures

By Kelly Crispin Coates, Fisheries Biologist, Cow Creek Umpqua Tribe, Canyonville, Oregon



After removing old tires and other garbage from southern Oregon's pastoral Jordan Creek, the Cow Creek Band of the Umpqua Tribe of Indians put old logs in the stream channel to provide habitat for spawning Coho salmon and steelhead. Kelly Crispin Coates photo

In 1998, the Cow Creek Band of Umpqua Tribe of Indians purchased land on Jordan Creek, a tributary to the South Umpqua River in southwest Oregon, and began removing old tires, barrels and garbage that had accumulated along and in the stream over many years.

In 2006, the tribe completed a watershed assessment of the entire Jordan and Alder Creek drainage. The goal of the assessment was to find habitat restoration opportunities that will help fish return to Jordan and Alder Creeks. Also

in 2006, the tribe began monitoring the creek for water quality metrics including pH, dissolved oxygen, temperature, and turbidity.

Before Interstate 5 was constructed in 1958, Jordan Creek hosted Coho salmon and winter steelhead. During construction, a set of twin box culverts, each approximately 360 feet long, was placed in Jordan Creek cutting off most of the drainage to migrating fish.

In the fall of 2006, the tribe worked with Oregon Department of Transportation to install fish weirs inside the

box culverts which allowed fish to pass underneath I-5 during higher flows. Fish returned to Jordan creek in January of 2007 and over the years, many adult spawning pairs of Coho salmon (a culturally important species to the tribe) have been spotted in Jordan creek.

In 2008, with funding from the State of Oregon and multiple partners, the tribe took out most of the remaining fish barriers in the Jordan and Alder creek drainage.

In the summer of 2006, the tribe implemented a stream restoration project

which included placing boulders and logs in Jordan creek. This type of restoration project increases oxygen in the water, slows down flows, allows gravel to accumulate for spawning habitat and creates habitat complexity. Logs for the in-stream work were donated by the locally owned Herbert Lumber Company.

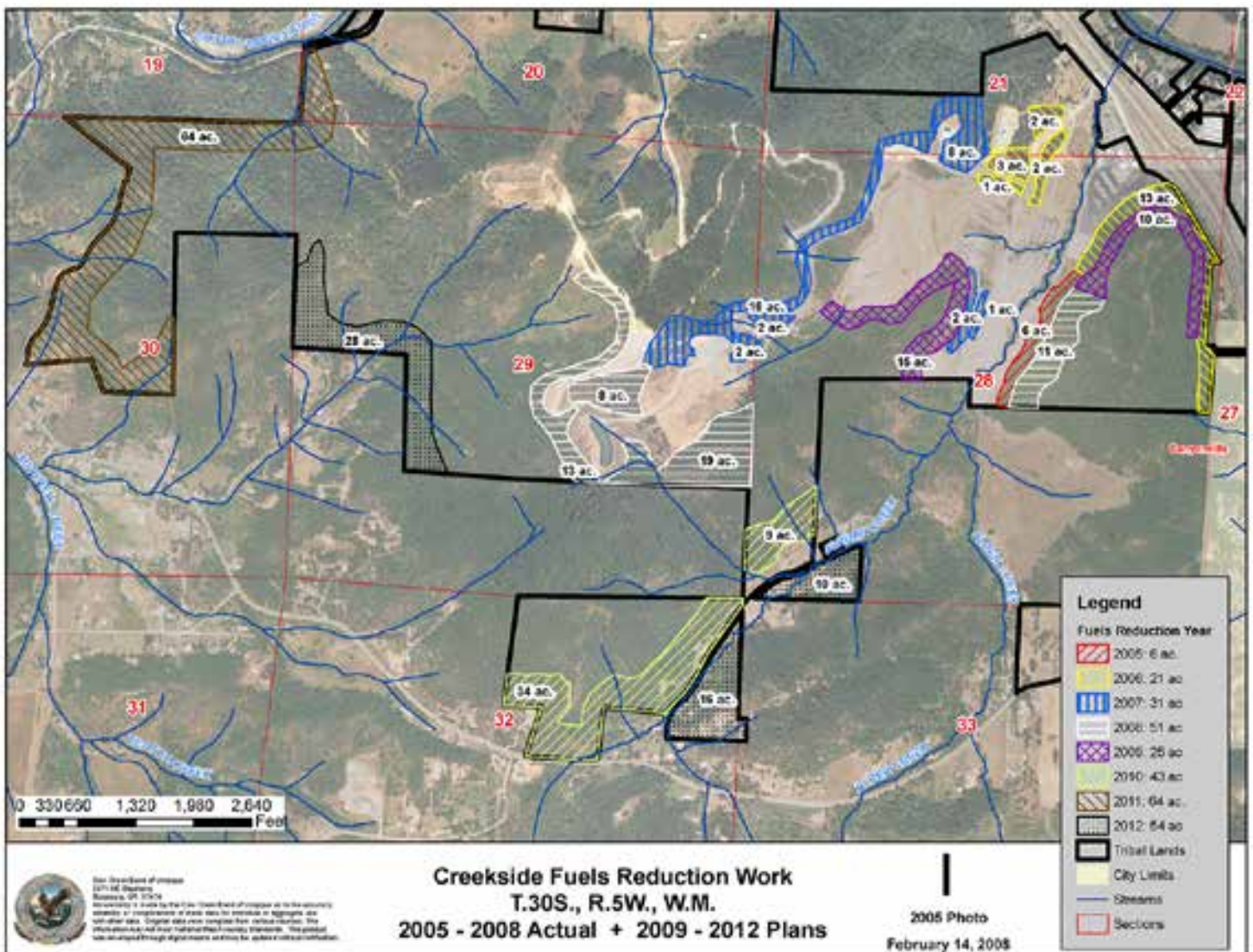
To increase stream complexity, the tribe in 2007 planted the riparian area with native trees, including incense cedar, ponderosa pine, Oregon white oak, and more. A second round of riparian planting, located upstream of the RV resort on Jordan Creek, took place in 2010. This project included sizable work to remove blackberries and other non-native vegetation prior to planting.

In addition, Wildland Urban Interface forestry work was completed around Jordan Creek to protect infrastructure from wildfire. [see map above]

The work that was done in Jordan Creek not only benefits the ecosystem and culturally important species, but it also benefits the economy. Jordan Creek is the centerpiece of the tribe's Seven Feathers RV Resort. During the Coho spawning season RV resort guests can be seen photographing the Coho salmon running up Jordan Creek, and reading about the tribe's connection to forests and fisheries as well as the restoration work in the watershed on educational kiosks.

The forestry and watershed resto-

ration work of the tribe is an ongoing process. The tribe is currently working with members of the Oregon delegation on a Tribal Land Conveyance Bill that was recently introduced in the U.S. Senate. The Canyon Mountain Land Conveyance Act of 2013 would restore reservation land to the tribe promised in an 1853 treaty with United States Government. If the approximately 17,500 acres of land is restored to the tribe it would provide future opportunities for watershed and species restoration and preservation, and sustainable forestry. The tribe looks forward to using our work in Jordan Creek as a model for future forestry and stream restoration work on tribal homelands.



Our Land and the Threat to Mother Nature's Power

By Carly Martin, Quinault Nation

My earliest memories involve the vastness of the Quinault forests and the Pacific Ocean growing up in my hometown of Taholah, WA. Almost every day of my childhood my father and I dwelled within them.

There are steeply logged hills in the rich forests and I was always on the lookout for wildlife. They grew thicker with each year, providing the forest with oxygen, food for animals, and a safe area for me to watch eagles prey and pick berries. The air was always fresh because many tree species flourish year round. I would climb trees, collect rocks, and watch insects scurry about. Never was I impatient or apt to leave because the forests soothed and sheltered me. My father, like many other Native fathers and our elders, made me feel secure and comfortable in my surroundings.

Along with the forests full of biodiversity, the Pacific Ocean is also of great importance to the Quinaults. With every visit I look forward to taking in the strong ocean aroma and listening to the soothing sounds of the waves. Quinaults are taught at a young age to not fear the ocean, but to treat it as an elder and respect everything it provides us, such as the boundless amount of water to support our bodies, fish, and wildlife.

As an adult, I realize that I am fortunate to have a deep withstanding relationship with nature. Each generation of Native people must embrace the ocean and forests to recognize our symbiotic relationship as our ancestors have always done. The forests capture moisture from the ocean to help them grow and provide water for salmon and other species. The salmon leave their base rivers to travel and grow in the ocean for several years. They return home, die after spawning, and bring important nutrients from the ocean to help feed the forests and provide food for the Quinault people. Our interdependence is ancient and it is our responsibility as stewards to take care our land.



Carly Martin amid tulips and kites on the Quinault Nation in western Washington

When I was in fifth grade the 6.8 magnitude Nisqually earthquake struck, as many Washingtonians remember it. I feared the salty Pacific would engulf my loved ones and abundant homeland. I realized that we are in the delicate hands of Mother Nature. We coastal dwellers were lucky that day, for it served as a reminder of the colossal forces of nature. With climate change comes earthquakes and volcanic eruptions, which can trigger tsunamis within minutes of initial release. Washington coast is prone to earthquakes of great proportions because it lies above two converging boundaries, "Currently, the Juan de Fuca and North American plates are converging approximately along the direction of N70 degrees at a rate of 3.5 to 4.5 cm/yr, about one-half to two-thirds the rate during the Pliocene [Epoch], reflecting a slowing trend which started about 4 million years ago." (1)

Tribes all across the nation are confronting dilemmas in the wake of climate change. We must take action now because tribes face imbalance due to our reliance

on environmental resources for economic and cultural values. One must consider that Washington and Oregon tribes thrived through a massive tsunami caused by the 1700 Cascadia Earthquake between magnitude 8.7 to 9.2 (2). Our unique traditional ecological knowledge passed along generations play a key role in survival, rebuilding, and restoring our land in the aftermath of Mother Nature's tremendous power. To prosper is absolutely achievable, especially since we dwell in an era of technology and innovative concepts.

From my discussions on climate with Quinault Indian Nation Natural Resources Manager Gary Morishima, coastal tribes are preparing for earthquakes and tsunamis. While a mega-thrust earthquake occurs in the Pacific Northwest on an average of 570-590 years (3), it is vital for the younger generations to educate themselves, prepare, and thrive following natural disasters. Many coastal tribes have been investing in moving tribal offices to higher ground, including the Quinaults.

Arranging a backpack for each family member and walking through your readiness plan are both smart decisions. In the age of information, educating and strategizing for emergency is a mere click away. We are not powerless and will adapt to change and uncertainty. As many of us experienced at the "Paddle to Quinault" at the beginning of August, Native Americans are a united people and will gather in time of necessity.

CITATIONS:

- 1) "The Nisqually, Washington, Earthquake of February 28, 2001" edited by Peter W. McDonough
- 2) USGS Scientist Shows Evidence for 300-Year-Old Tsunami to Participants in International Tsunami Training Institute
- 3) "Great Cascadia earthquakes and tsunamis of the past 6700 years, Coquille River estuary, southern coastal Oregon" by Robert C. Witter, Harvey M. Kelsey, and Eileen Hemphill-Haley.

Life and Opportunity in the Most Unexpected Places

By Faline Haven, Acting Chief Forester, Bureau of Indian Affairs

Opportunities and life bring you to the most unexpected places. On May 3, 2013, I became the Bureau of Indian Affairs (BIA) Acting Chief Forester working in Washington DC and as I cleaned off my predecessor's desk I wondered to myself "how did this happen"? We all receive support and encouragement throughout our careers and my path is probably no different than most growing up on Reservations or tribal land. My career has been shaped and molded by so many influences and supporters that I cannot remember a time that I have not been lifted up and encouraged by either family, the tribal community and leaders, or BIA staff.

Metlakatla, Alaska is a Tsimshian community whose primary industries are fishing and logging. It's a magical place and a place that is truly my home in every sense of the word. Until I left for college at the age of 18, it and its small island population of 1,400 residents was the only place I had ever known. My decision to study Forestry was probably most influenced by my father who ran a construction business on the island, building much of the community infrastructure. He built logging roads and I remember him hauling some single log loads to the Annette Island Sawmill as I was growing up. When tribal Mayor Casey Nelson, Sr. learned of my desire to study forestry, he helped by making a call to the BIA and who sponsored me as an forestry intern with the Northwest Regional Office with the goal of returning home to become the Tribal Forest Manager.

I attended the University Washington College of Forest Resources. It is interesting to see today that many of the students I attended college with now play key roles in the management of natural resources or are important tribal leaders. In the late 1980s and early 1990s, the national goal of increasing Native American professional foresters and natural resources



Dream catchers originated with the Ojibwe tribes in Wisconsin. They are made from willow hoops and sinew and adorned with feathers, beads and plants. Tribal lore says they change dreams. Only good dreams are allowed to pass through the hoop. Bad dreams are trapped in the net and disappear in the light of day. Evergreen collection

managers was a primary goal of the BIA and the Intertribal Timber Council and was codified through the National Indian Forest Resources Management Act. Financial support for our education was obtained through our Tribes, the BIA Intern or coop program, or through student loans and family support.

The Intern program was invaluable to me and many of my peers. During my internship I worked on several Northwest reservations applying my formal education in the field. While in the Intern Program, my mentors had me all packed up and heading off to a fire assignment to experience work on an organized hand crew. While en route to the incident I was called off the bus and told that I was being re-routed to Denver, CO to work at the BIA Division of Energy and Mineral Development office and attend the Native American Energy and Mineral Institute. This deviation was the result of my tribal leaders who were always tracking my progress and training. This turned out to be a fortuitous move that would later position me for an exciting position in renewable energy development for the BIA.

In 1993, I returned home with a

Bachelor of Forest Resources completed and ready to start my career. We had a very small staff at Metlakatla, so everyone from the Forest Manger to the administrative staff worked on timber sales, inventory and planning, forest development, log scaling, and marketing. The most exciting part of working on the marketing side of forest resources was that a majority of our timber resources were exported to Japan and China. This allowed me to travel and work in Japan and Korea marketing our forest resources. The tribal Forestry program also was responsible for all land resource development which included mineral

and mining exploration, engineering and extraction, a native seed nursery, and water resources development.

After 11 years working for the tribe in Forestry, and armed with experience gained through the Intern Program, I took a position with the BIA Division of Energy and Mineral Development to start a renewable energy program for tribes where we studied, analyzed and initiated biomass, wind, solar, hydropower and solid mineral projects throughout the country.

Now as I assume the role of Acting Chief Forester and Assistant Deputy Director for the BIA Office of Trust Services, I am encouraged to see the emphasis our leaders continue to place on guiding and encouraging Tribal youth in natural resource fields. I have been blessed by so many people and so many opportunities and it drives me to continue this legacy. Although the economic climate has changed and our markets for forest resources is challenging, the ambitious spirit of the current cohort of young foresters and natural resource managers makes me confident our future is as bright as ever.

The Evergreen Foundation

The Evergreen Foundation is a non-profit forestry research and educational organization dedicated to the advancement of science-based forestry and forest policy. Founded in 1986, our primary focus was to encourage broad-based citizen participation in the federal government's congressionally mandated forest planning process.

27 years and counting, The Evergreen Foundation has assumed a much wider role providing a public forum for scientists, ecologists, economists, historians, landowners, the forest industry labor force, Indian tribes, rural and urban communities, federal and state resource managers and leaders at every level of government across the nation.

Our flagship publication is Evergreen. We also publish "The Truth about America's Forests" a beautifully illustrated and footnoted handbook, designed specifically to serve those who need a quick, science-based reference guide that answers most of the frequently answered questions about U.S. forests and forestry. Now in its eighth printing, more than one million copies have been circulated.

In our research, writing, and publishing activities, we work closely with experts to ensure accuracy of information. Statistical information appearing in all The Evergreen Foundation publications are taken from publicly supported federal and state forest data bases. Industry information is also used when it can be independently verified.

Support for our educational mission comes from Foundation members and other public and private sector organizations that share our commit-

ment to science based forestry.

The Evergreen Foundation operates under Internal Revenue Service 501(c)(3) regulations that govern the conduct of tax-exempt organizations created for charitable, religious, educational or scientific purposes. We do not lobby or litigate. Forestry education is our only business. Contributions to the Foundation are tax deductible to the full extent the law allows.

To learn more about us, view and download back issues of Evergreen, or Donate Online go to our website: www.evergreenmagazine.com. All information on our website is available for use with the appropriate credit given.

To become a member of the Evergreen Foundation or order reprints of this issue contact us: membership@evergreenmagazine.com

Questions or comments? Contact Jim Petersen, Managing Director
editor@evergreenmagazine.com

Business address: 34 Paul Bunyan Lane, Libby, Montana 59923, Telephone: 406.837.0966

"What do you want from your forest?"

At the Evergreen Foundation, we define "Real Forestry" as the utilization of all forests, in all forms, by all individuals, for multiple uses. "Real forestry" is scientifically sound and non-discriminatory; it does not cater to special interest groups and is not selective in whom it serves.

"Real Forestry" recognizes that the evolution of the forest and forestry is an organic process that cannot be tethered to one single point in time. Forests and humankind have always been fundamentally connected in a mutually beneficial relationship - meeting the needs of all species - including humans - and contributing to the societal and cultural fabric that connects us all.

The practice of forestry reaches far beyond the forest. Everything in and related to forests - soil, water, trees, plants, fish and wildlife, food, medicines, for-

est products and byproducts, recreation, and all related employment - benefits everyone. Regardless of where we live - Metropolitan, Urban, or Rural - we are consumers of what the forest offers. "Real Forestry" acknowledges this resource consumption and thus endorses an informed and inclusive decision making process where science, fact, and history take precedence.

At Evergreen, we believe the best way to ensure a productive forest for everyone is through proactive, science-based forestry. Current policies and practices influencing the state of our forests must be addressed. We must heed the history of the forest and the lessons learned. Change is needed to ensure that our future generations inherit a legacy of resilient and productive forests.

Managing Director and Founder:

Jim Petersen

Development Director: Julia Petersen

Board of Directors:

Bruce Vincent: Founder, Provider Pals, Libby Montana

John Marker: Orchardist, Government Liaison Region 6, U.S. Forest Service, retired, Hood River, Oregon

Rob Freres: Vice President, Freres Lumber Company, Lyons, Oregon

Chris Brong: Skamania County Commissioner, Bureau of Land Management, retired, Stevenson, Washington

Mike Newton: Professor Emeritus, Forest Ecologist, Oregon State University, Philomath, Oregon

Steve Mealey: PhD Wildlife Biologist, Consultant, U.S. Forest Service, retired, Springfield, Oregon

Vincent Corrao: Co-Owner and Founder of Northwest Management, Moscow, Idaho

