The NIFRMA Tasks – We elaborate within the rest of the report our analysis, findings, and recommendations for the eight tasks, stipulated by NIFRMA. Within each section, findings and recommendations are shown in bold type. References, that helped to inform this work, follow the Task presentations.

Western larch managed forest – Colville. Photo by Mark Rasmussen

NIFRMA Task A - An in-depth analysis of management practices on, and the level of funding for, specific Indian forest land compared with federal and private forest lands.

Overview

A comparison of management practices on Indian forest land to similar federal, state, and private forest lands identifies that, for *commercial forest land* stewardship and wildfire management, the USFS is the appropriate cost comparator. For *noncommercial forest land* stewardship and wildfire management, the BLM is the appropriate cost comparator. For the goal of *timber production*, the state forests and private industrial forests with similar management systems are the appropriate comparators for Indian forests. We find the level of forest investment on Indian lands to be much lower than the comparator organizations. To determine the funding level for Indian forestry, we propose a model that recognizes the cost of stewardship and incremental cost of timber production. As background to developing the stewardship /production cost model we compare levels of investment for forestry and wildfire management, by BIA region, to federal, state, and private organizations.

We also compare the results of the stewardship/production model with the 2011 BIA FPA needs assessment. Both the stewardship/production model and FPA needs assessment indicate a funding gap compared to other organizations.

Our primary conclusion is that the current (2011) federal funding for forestry and wildfire management of $154 million is about $100 million (39%) below the $254 million that we estimate necessary for a level of forest stewardship and timber production consistent with Indian goals and comparator organizations.

We conclude with Summary of Findings and Recommendations.

Introduction

Indian forestry is funded in three components: BIA Forestry, BIA Fire, and Tribal Contributions. Support to forestry is provided by the BIA Division of Transportation (formerly Branch of Roads) which maintains roads on the BIA road system (BIARS) and is funded by the Federal Highway Administration (FHWA). Other federal agencies contributing forest health and protection services and grant funds are the USDA Forest Service for insect and disease monitoring and control and NRCS through the Environmental Quality Incentives Program (EQIP) and other conservation programs. GIS support often is provided through tribal natural resource staffs.

BIA contributions to Forestry have fluctuated over the last 20 years (Table A.1). In terms of 5-year measurement points, BIA Forestry and Fire funding peaked in 2001 in both nominal and inflation adjusted bases ($2011). Forestry funding, in real terms, has declined 23% over the last 20 years and even more steeply in the last 10 years. During this 20-year period Indian forest trust lands have increased from 15.8 million acres to 18.4 million acres. Some tribes have had no budget increases in 20 years; others have had budgets or services reduced. On at least one major timber producing forest, tribal contributions are paying for BIA personnel. Tribal contributions across Indian Country have declined due to reductions in FMD associated from market conditions over the last several years, as well as declining harvests from land use changes. For many tribes, FMD Accounts are exhausted). Planting and thinning backlogs are evidence that forest investments have been inadequate (see discussion under Question B.)

Tribes are increasingly reliant upon NRCS funding for conservation projects– White Earth. Photo by Mike Smith

Decreased BIA funding has increased reliance on outside non-recurring grants (soft money), such as from NRCS. Grant writing, administration, and reporting is costly in terms of staff time

with some staff managers claiming more than half of their time is spent in grant writing, administration and reporting. The 2011 BIA Funding and Position Analysis report (BIA 2012a) suggests $3.3 million were received as grants, endowments, and other outside contribution sources. Data on outside forestry grants and contracts are probably incomplete.
Fire preparedness and hazard fuel reduction budgets that rose significantly in response to the National Fire Plan (2000) have decreased 16% in real terms over the last 10 years and are projected to decline further in response to reductions in federal appropriations in the coming years.

Tribal contributions to the forestry program remained fairly constant from 1991 to 2001 in real terms, but have declined almost 40% in real terms since 2001. A significant part of this is due to declining timber receipts that fund FMDs.

Table A.1. Sources of Forest Revenue, Allowable Annual Cut (AAC), Harvest Volumes, and Trust Land from 1991 to 2011. Previous period budgets are adjusted using CPI (Wilson, 2012), except 2001 and 2011 fire budgets are from NIFC (Mason 2013a). Fire includes preparedness and hazard fuel reduction, but not suppression.

		1991	**2001**	**2011**
Actual		**Million $**	**Million $**	**Million $**
Forestry	BIA	40.8	58.7	52.0
Fire	BIA	21.9	95.6	102.0
Tribal	Contributions	18.5	23.5	18.6
All Sources	**Total**	**81.1**	**177.8**	**172.6**
Inflation Adjusted		**Million 2011$**	**Million 2011$**	**Million 2011$**
Forestry	BIA	67.4	74.6	52.0
Fire	BIA	36.1	121.4	102.0
Tribal	Contributions	30.5	29.8	18.6
All Sources	**Total**	**134.0**	**225.8**	**172.6**
Forest & Harvest		**1991**	**2001**	**2011**
AAC	All Regions	930 MMBF	779 MMBF	564 MMBF
Harvest	All Regions	730 MMBF	606 MMBF	360 MMBF
Forest Trust Land	All Regions	15.6 million ac	17.6 million ac	18.4 million ac

Indian forest trust lands include about 18.4 million acres of forest land with 6.0 million acres classified as commercial timber land and 3.9 million acres of commercial woodland. BIA Funding differs by region (Table A.2). One of the main differences between regions is forest type. Regions with low proportions of commercial forest (Great Plains, Southern Plains, Southwest) have higher per acre forest costs although administrative unit size is also important in all regions. We return to this later in the Discussion section.

Table A.2. BIA forestry funding and land base by Region for 2011. Note: ** indicates small amount of commercial forest land (Mason 2013b).

	Forest acres	Comm. acres	Comm. acres	$/acre	$/acre	$/acre
BIA Regions		**Timber**	**Woodland**	**All Forest land**	**Comm. Tim**	**Comm. Tim + Woodland**
Alaska	461,350	175,329	173,992	$2.56	$6.73	$3.38
Eastern	363,984	311,039	11,033	$6.42	$7.51	$7.26
Eastern OK	123,787	57,281	42,488	$1.19	$2.57	$1.48
Great Plains	377,910	139,950	221,986	$4.44	$11.99	$4.64
Midwest	1,047,614	890,104	0	$7.33	$8.63	$8.63
Navajo	5,415,532	388,626	1,139,109	$0.32	$4.45	$1.13
Northwest	2,815,251	2,010,179	73,056	$6.26	$8.77	$8.46
Pacific	199,921	116,164	46,564	$14.23	$24.49	$17.49
Rocky Mtn	804,622	540,932	115,044	$3.98	$5.92	$4.88
Southern Plains	99,230	4,038	94,615	$1.40	**	$1.41
Southwest	2,675,995	602,200	792,627	$2.65	$11.79	$5.09
Western	4,051,310	727,125	1,201,288	$1.57	$8.75	$3.30
Total	**18,436,506**	**5,962,969**	**3,911,812**	**$2.82**	**$8.72**	**$5.27**

Aspen and conifer vista – Fort Apache. Photo by Vincent Corrao

Comparison to adjacent forest lands

We compiled adjacent forest land management costs to compare the level of forest investment and cost per output. As in previous IFMAT reports we used the USFS as our comparator as well as the forest industry and states in the Northwest. In this assessment, we include the BLM O&C Grant lands (Oregon and California Railroad Revested Lands) and broaden the number of

states queried as well as industry and provide additional regional focus (Table A.3, Table A.4, Table A.5).

Table A.3. Comparators used for Indian forestry management costs.

BIA Region	Forest Service	BLM	State	Industry
Alaska	Region 10		-	-
Eastern	Region 9		Maine	Northeast, Appalachia
Eastern OK	-		-	-
Great Plains	-			-
Midwest	Region 9		MN,WI	North Central
Navajo	Region 3		-	-
Northwest	Region 6	O&C lands	OR, WA, ID, MT	OR, WA
Pacific	Region 5		-	-
Rocky Mtn	Region 1,2		-	-
Southern Plains	-		-	-
Southwest	Region3		-	-
Western	Region 3		-	-

Boundary marker for tribal forest – Nez Perce. Photo by Larry Mason.

State and private forests

The total 2011 BIA allocation for forest management of Indian forest lands is $2.82 per acre if the budget is divided by total forest land (18.4 million acres). This compares to a range of $3.83/acre to $7.63 per acre for selected state forests in the Lake States and East and $11.28 per acre to $32.67 per acre in the West. A similar pattern in management costs is shown for

private forest owners. Forest management costs in the East average about $4.50 per acre except Appalachia (Table A.5) which is lower than other areas of the East. The private owners represent a broad group as indicated by the range in management costs (Table A.5).

Table A.4. Comparison of federal forest management allocation to tribes to selected states ($/acre). Costs do not include fire management. Land base for tribes is all forest land including woodlands. Derived from Decker (2012), Morrison (2012 a,b), WIDNR (2012), Larson (2012), Helmer (2012), Idaho (2012), Dent (2012), and Brodie (2012).

BIA Allocation to Tribes	**$2.82/acre**
States East	**$/acre**
Wisconsin State Lands	$3.83
Minnesota State Lands	$5.50
Maine State Forests	$7.63
States West	**$/acre**
Montana Trust Lands	$11.28
Idaho Department of Lands	$17.91
Washington Trust Lands	$19.98
Oregon Trust Lands	$32.67

Table A.5. Forest management costs in selected areas of the eastern and western United States provided by two major forestry consulting companies. Costs do not include fire management.

	Average	**Minimum**	**Maximum**
Private East	**$/acre**	**$/acre**	**$/acre**
Southeast - Natural Pine/Hardwood/Planted Pine	$4.85	$1.33	$16.77
Northeast - Spruce/Fir and Natural Hardwoods	$4.55	$3.73	$6.58
North Central - Natural Hardwoods	$4.43	$3.41	$6.51
Appalachia - Natural Hardwoods	$2.70	$1.58	$4.82
Private West	**$/acre**	**$/acre**	**$/acre**
W. Washington/W. Oregon DF/Hemlock	$19.00	$8.00	$62.00
E. Washington/ E. Oregon - Pine/Fir	$7.25	$2.00	$12.00

National Forest System

The USFS manages for multiple uses including dispersed and developed recreation, mineral development, and Wilderness. The 2011 National Forest total budget for multiple use management without recreation, mineral development, facilities management other than roads, and Wilderness was $8.57 (Table A.6). Law enforcement was about $0.58 per acre. Fire management (preparedness and hazard reduction was an additional $5.16 per acre. Fire management will be discussed separately. Not included in Table A.6 is a significant additional investment in the National Forests that takes place through stewardship contracts where stumpage is traded for project work such as forest restoration.

Table A.6. National Forest System costs for 2011 excluding recreation and mineral budgets. Budgets include all road investments including federal highway funding, but does not include $200 million from the FHWA Forest Highway Development Fund for road access to and through the National Forests. Law enforcement and wildfire costs are separated. Derived from Danelle (2012) and Anderson (2012).

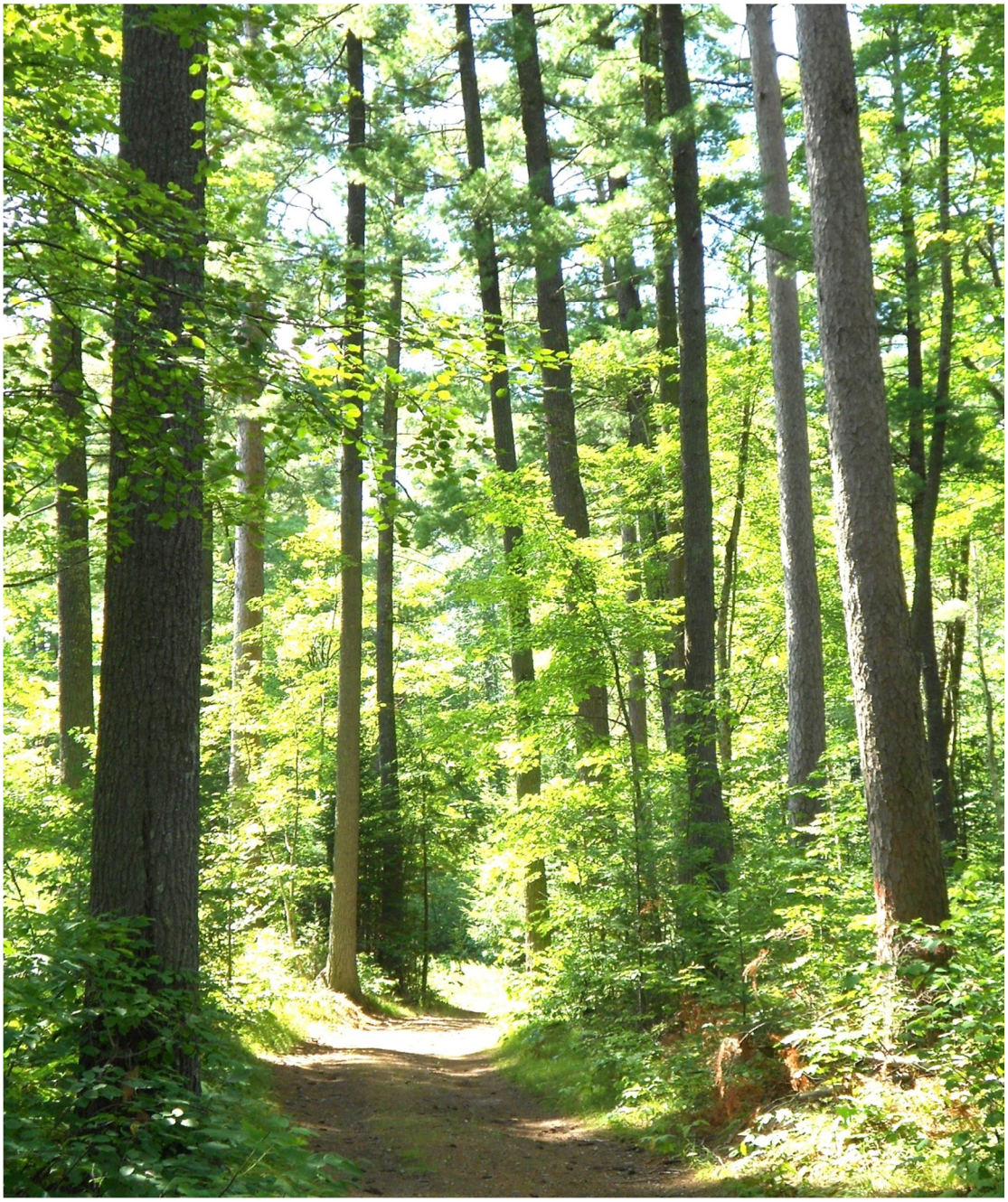
Bureau of Land Management, Oregon O&C Grant Lands 2008	**Total ($1000)**	**$/acre**
All Land and Resource Management	$154,075	$59.72
Wildfire Management	$18,504	$7.17
Total	**$172,579**	**$66.89**

BLM western Oregon

The BLM manages about 248 million acres of land, including 2.58 million acres of primarily forest land in western Oregon. The total 2011 Oregon BLM budget is $266 million, including $51 million for wildfire management. The majority of the Oregon BLM budget is for management of the O&C lands, but the breakout was not available. As a proxy, we used data from 2008 that was compiled for during the EIS preparation for the Western Oregon Plan (Table A.7). The proportion that is directly related to timber production is not available.

Table A.7. Bureau of Land Management costs for 2008 for the western Oregon O&C Grant lands including the State BLM Office share. Derived from Thauland (2012).

National Forest System Surface Land Management 2011	**Total ($1000)**	**$/acre**
Collaborative Forest Landscape Restoration	$14,970	$0.09
Land Management Planning	$45,033	$0.29
Inventory and Monitoring	$167,219	$1.06
Wildlife & Fisheries Habitat Management	$140,260	$0.89
Grazing Management	$49,738	$0.32
Forest Products	$336,049	$2.13
Vegetation & Watershed Management	$184,341	$1.17
Landownership Management	$91,765	$0.58
Roads (All roads – direct appropriations)	$240,105	$1.52
Roads (FHWA road maintenance funding)	$82,500	$0.52
Total excluding law enforcement and fire	$1,351,980	**$8.57**
Law Enforcement	$91,765	**$0.58**
Fire Preparedness	$585,654	**$3.71**
Hazard Reduction	$228,344	**$1.45**



Mature forest – Lac du Flambeau. Photo by Vincent Corrao.

BIA funding per unit of timber harvest

Indian forests harvested about 360 MMBF equivalent in 2011 including pulpwood and excluding firewood. Harvest has declined from about 730 MMBF/year in 1991 (IFMAT 1) for a variety of reasons (See discussion under Question F) including changes in management objectives, changes in forest condition, reduction in markets, and lack of funding. Expressed in terms of timber

harvested, the BIA allocation, adjusted for inflation, was $92 /MBF in 1991, $123/MBF in 2001, and $145/MBF in 2011 (Table A.9). BIA 2011 allocations per unit of timber production are lowest in the Northwest ($77-79/MBF). Market conditions have accentuated imbalances between timber offered and timber harvested in many BIA regions which make interpretation difficult as the forestry program funds both timber sale preparation and timber sale administration. Several of the regions have primarily forest stewardship programs, which exaggerate costs of timber harvest. We discuss the cost of forest stewardship later.

On average, BIA timber allocations per unit of timber production are higher than state lands (Table A.9) and, on average, approximately the same level of the direct costs of timber production on National Forests (Table A.10). In the Northwest, BIA 2011 allocations per unit of output are on the upper end of what states budget and are much lower than the National Forests. State lands in the West with the exception of Montana are in the range of $65-75/MBF. Minnesota has the lowest timber production costs at $53/MBF equivalent and Maine has a timber production cost of $86/MBF equivalent.

Table A.8. Costs of Indian timber production (2011) in terms of timber offered and timber harvested. Budgets are 2011 BIA allocations by region with central office operations prorated to the regions in proportion to the regional allocations. *** Indicates too small a volume to provide meaningful comparison. Derived from Wilson (BIA 2012a).

BIA Regions	Budget ($1000)	Offered (MMBF)	$/MBF	Harvested (MMBF)	$/MBF
Alaska	$1,179	-	-	-	-
Eastern	$2,337	9.3	$250	$25.0	$94
Eastern OK	$147	-	-	-	-
Great Plains	$1,678	0.2	***	$0.2	***
Midwest	$7,677	35.1	$219	$87.9	$87
Navajo	$1,728	0.4	***	$0.5	***
Northwest	$17,634	228.2	$77	$223.7	$79
Pacific	$2,845	10.9	$260	$11.4	$250
RockyMtn	$3,202	10.4	***	$2.9	***
Southern Plains	$139	0.2	***	$0.2	***
Southwest	$7,098	-	-	$5.4	***
Western	$6,361	65.5	$97	$2.5	***
Overall	**$52,026**	**360.3**	**$144**	**$359.7**	**$145**

Table A.9. BIA, National Forest, and selected state forest expenditures (2011).Timber production volumes for Oregon and Washington have been adjusted reflect BIA scaling rules. Idaho and Montana volumes have not been adjusted and may underestimate BIA scale by up to 5%. Cost per MBF here is calculated by dividing total budgets by total volume with the exception of the National Forest System where only costs directly supporting timber production have been included. Forest expenditures include stewardship costs so the $/MBF are not direct timber production costs, except for the National Forests. Stewardship costs are discussed later. Derived from Decker (2012), Morrison (2012 a,b), WIDNR (2012), Larson (2012), Helmer (2012), Idaho (2012), Dent (2012), Brodie (2012), and Danelle (2012).

	2011 Expenditures ($1000)	Harvest Vol. (MMBF)	$/MBF
BIA	$52,026	360	$145
National Forest System	$380,711	2,533	$150
Oregon Trust Lands	$22,000	312	$71
Washington Trust Lands	$44,000	669	$66
Idaho Department of Lands	$17,500	248	$71
Montana Department of Lands	$5,939	47	$126
Minnesota DNR	$21,000	400	$53
Maine State Forests	$4,577	53	$86

The USFS has estimated National Forest timber sale management related costs including other resource support of timber sales (Table A.10). Costs in 2011 per forest acre (net of Wilderness) are lowest in the Southwest (Region 3, Region 4), and highest in Region 6 (Oregon, Washington) and Region 9 (Eastern US). The average unit cost per net forest acre is $2.41/acre/year. In 2011, the Forest Service harvested about 2.5 BBF at an average cost of $150/MBF. In the contiguous states, costs ranged from $90/MBF in Region 8 (Southeast US) to $220/MBF in Region 1 (Montana, northern Idaho).

Table A.10. Direct timber management costs for the National Forests in 2011 (Danelle 2012).

Forest Service	$/ Net Forest acre	MMBF	$/MBF
Region: 01	$2.57	210.6	$220
Region: 02	$2.00	204.7	$164
Region: 03	$0.79	131.9	$111
Region: 04	$0.61	118.7	$155
Region: 05	$3.62	311.4	$174
Region: 06	$4.27	547.6	$156
Region: 08	$3.97	542.4	$90
Region: 09	$5.48	421.4	$136
Region: 10	$1.34	44.2	$496
Overall	**$2.41**	**2,532.9**	**$150**

Roads

Roads are an important part of Indian forestry providing access for forest protection, commercial and noncommercial forest uses. IFMAT I and II identified underinvestment as the primary factor in the generally poor state of Indian forest roads as compared to the National Forests. Roads in Indian Country are divided into two categories: (1) roads on the Indian Reservation Road System (IRR[22]), and (2) roads that are not on the IRR.

The IRR includes approximately 29,000 miles of public roads on Indian reservations, owned by the BIA and designated on the BIARS plus State and local public roads that provide access to and within reservations plus designated tribal owned-roads. Roads that are not on the IRR system must be financed through resource extraction or tribal contributions.

In 1928, Congress gave authority to fund what was later to become the IRR system when it enacted what is now 25 U.S.C. 318a. That statute reads: "Appropriations are hereby authorized out of any money in the Treasury… for…improvement, construction, and maintenance of Indian reservation roads not eligible to (sic) Government aid under the Federal Highway Act…" (Leonard, 2012). In 1982, as part of the Surface Transportation Act, Congress put the IRR system under the Federal Lands Highways program making explicit that only reservation public roads would be eligible as these funds came from the Highway Trust Fund. Indian roads restricted from public travel are not eligible for FHWA funds. This has caused friction between tribes and the federal government for tribes who choose to restrict travel for cultural, trespass, or other reasons.

Overall, road infrastructure in-forest and out-of-forest is poor in Indian Country, with reportedly only 16% of the IRR functioning at acceptable or better levels (Gishi 2012a). IFMAT I estimated that more than $200 million would be needed to bring forest roads up to a standard that would provide a stable transportation system and protect watershed condition. From estimates provided by Gishi, $200 million is less than 1% of the total cost needed to bring the IRR up to standard. This pales against overall Indian transportation needs. Funds for the

[22] Roads on the IRR are public and located within or provide access to an Indian reservation or Indian trust land, or restricted Indian land. The BIA Road System is a subset of the IRR system, consisting of roads that are owned and maintained by the BIA and tribal governments, including those existing and proposed IRR for the BIA has or plans to obtain legal right-of-way. The BIA has the primary responsibility to improve and maintain the roads on the BIA Road System. The IRR also includes Federal, State and local public roads that provide access to American Indian reservations and Alaska Native villages or, in some instances, are located within reservations or American Indian lands. Over 55 percent of the IRR system is unimproved, earth, and/or gravel.

IRR are provided by the FHWA under a relative needs and priority system. The 2011 BIA FPA identified additional road funding needs (road design, construction, and maintenance) as only $1.0 million (Table A.25). In addition to federal funding, a number of states share state fuel taxes with tribes through agreements and compacts (Zelio 2005).

Construction

Federal funding for the IRR between 2005 and 2009 averaged about $400 million per year (BIA 2012f). Additional funding of about $14 million is for provided for bridge maintenance and replacement. Funding for 2011 (Gishi 2012b) was $364.3 million (Table A.11). Funding is allocated by a priority system in consultation with tribes (FHLP 2012). Under current regulations, up to 25% of this funding can be used for road maintenance for any roads on the IRR once regular road maintenance funds are expended. Most new forest development roads are not eligible for this funding unless they are proposed as public roads and put on the BIARS.

Table A.11. Construction Funding for the Indian Reservation Road Program (2011). Potentially up to 25% can be allocated to road maintenance (Gishi 2012a,b).

BIA Regions	Million $
Alaska	$50.8
Eastern	$11.7
Eastern OK	$44.8
Great Plains	$26.1
Midwest	$40.0
Navajo	$54.3
Northwest	$27.0
Pacific	$30.7
Rocky Mtn.	$18.7
So. Plains	$21.6
Southwest	$13.3
Western	$25.5
TOTAL	**$364.3**

Bridge replacement funded with NRCS cost-share – Quinault. Photo by Larry Mason.

Maintenance

The DOI funds the maintenance of the BIARS, which has an annual authorization of about $25.5 million, about $900/mile/year. Funding is restricted to BIARS. BIARS includes many of the major forest development roads, but usually not collectors and spur roads. A large proportion of natural resource roads are not on the BIARS. Maintenance of natural resource

roads that are not on the BIARS must be provided from charges to natural resources or tribal contributions.

A major difference between tribal funding of resource roads and other land owners is that road users are expected to pay their road use share on Forest Service, BLM, state, and many private lands. On most reservations, commercial users on tribal roads do not pay user fees outside of the immediate sale area. Inside the sale area, the timber purchaser pays for road construction and road maintenance. The rationale is that road maintenance funding through reductions in stumpage payments simply moves money from one hand of the tribe to another. However, this contributes to lack of stable road funding with potential impacts on other resources.

Expressed on a per acre basis, the $25.5 million DOI funding to the BIA equates to about 23% of the road maintenance funding that the USFS receives and about 20% more than the BLM on average, although BLM road maintenance budgets in Oregon area are similar to USFS maintenance budgets. The $25.5 million does not include discretionary road maintenance reallocation choices by the tribes from the FHWA road construction fund of which up to 25% can be diverted to road maintenance projects. Of course, neither the BLM nor USFS has responsibilities to provide community road services.

Finding a good comparator for road maintenance funding is challenging. The road infrastructure on federal lands in the western United States is widely recognized as deteriorating, primarily from the reduction in commodity extraction that funded road maintenance programs through road user fees. The agencies simply have too many roads for the user costs to support at current harvest levels. The National Forest and BLM reaction has been to decommission roads and/or reduce service levels.

Recycled gravel from road reclamation project – Coquille. Photo by Larry Mason.

Road maintenance needs for forest stewardship vary by topography and climate, but are probably in the range of $0.50-$2.00 per acre per year (Table A.12).

Table A.12. Comparison of road maintenance funding (2011) between organizations expressed on a per acre basis. BIA road maintenance funding does not include road maintenance contributions from the construction fund. National forest land base does not include Wilderness. National Forests and BLM funding allocations do not include road user maintenance charges or FHWA Forest Highway Development funding. Omitted from the table is a small amount of FHWA funding to BLM.

Organization	$/acre
BIA	$0.46
National Forests (overall)	$2.04
BLM (overall)	$0.30
BLM (w/o Alaska)	$0.38
BLM (Oregon)	$1.54

Wildfire management program

The wildfire management program for the BIA includes both forest protection and non-forest protection from wildfire on reservations as well as some non-reservation lands. The wildfire program within the federal agencies is divided into preparedness, suppression, and hazardous fuel reduction. The three components are budgeted, but suppression funding depends upon actual conditions. Prior to 2009 supplemental appropriations were made when budgeted suppression funds have been exhausted. Currently, however, the FLAME Act of 2009 (**F**ederal **L**and **A**ssistance, **M**anagement and **E**nhancement) Wildfire Suppression Reserve Fund is being used to avoid supplemental appropriations, but ultimately, suppression deficit funding depends upon Congress. In this section we compare Indian funding for preparedness and hazardous fuel reduction and do not discuss suppression costs.

As part of the National Fire Plan, combined BIA fire preparedness and hazard reduction budgets more than tripled in real (inflation adjusted) terms during the 1990's to peak around 2001; then have since declined to 2.8 times the 1990's levels (inflation adjusted) in 2011 (Table A.1). The recent decline has caused, and continues to cause, stress in BIA and tribal fire organizations as they expanded in response to increased budgets and then have contracted under reduced budgets. Because of concerns about internal data and programming issues, the Fire Program Analysis interagency priority budgeting tool, used in 2010 and 2011 was not used to develop the 2012 budget (DOI Budget Justification, FY 2012, Wildland Fire Management). In 2007, the federal agencies adopted the Hazardous Fuels Prioritization and Allocation System (HFPAS) that uses the modeling tool Ecosystem Management Decision Support (EMDS). The DOI is making significant changes to HFPAS to address concerns about outputs (DOI Budget Justification, FY 2012, Wildland Fire Management).

Although we draw comparisons between agencies for preparedness and hazardous fuel reduction, the percentages of forest land, commercial forest, and non-forest differ between BIA

areas as well as between forest owners (Table A.13). The USFS has, by far, the greatest proportion of forest land, commercial and non-commercial, and the BLM has the lowest. In terms of proportions, the USFS has approximately three times the percentage of commercial land and non-commercial forest land as the BIA. This has implications for preparedness, hazardous fuel reduction, and suppression costs.

Table A.13. Approximate vegetation characteristics by owner.

Owner	% Com. Forest land	% Non-Com. Forest/Woodland	% Range/Other
BIA	< 16	< 16	> 68
BLM	< 2	< 10	> 88
Forest Service	< 50	< 50	> 15

To permit comparisons to other organizations, the Central Office fire preparedness and hazard reduction budgets have been prorated to regions in proportion to regional budgets (Table A.14). Per acre budgets are expressed as a function of protection acres and reservation acres (Table A.15). Indian forest protection includes areas outside of reservation boundaries where tribes have wildfire management responsibilities. For the purpose of this analysis, forest protection acres are used as the land base for comparison of preparedness. For the purpose of hazardous fuel reduction, reservation acres are used.

Fire Preparedness

It is challenging to compare fire preparedness budgets for private and state forest lands to Indian forest lands because in many states fire preparedness budgets come from general funds and are not easily isolated. The State of Oregon is one state where it is possible to identify the costs. Oregon provides fire protection services to 16 million acres of forest land. Private landowners are assessed a per acre rate based on forest type and location at about one-half the expected cost of forest protection and the remainder comes from the general fund. Non-private entities such as the BLM, several tribes, and the Oregon Department of Forestry can, and do, contract for fire protection services at the full rate.

Table A.14. BIA Preparedness and Hazardous Fuels Reduction budget (2011). Adjusted preparedness and hazard reduction budgets have Central Office/NIFC budgets prorated to regions in proportion to BIA regional budgets. Derived from Mason (2013a).

BIA Regions	Preparedness ($1,000)	Hazardous Fuel Reduction ($1,000)	Adjusted Preparedness ($1,000)	Adjusted Hazardous Fuel Reduction ($1,000)
Alaska	$286.4	$1,296.2	$454.9	$1,345.3
Eastern	$771.9	$471.5	$1,226.4	$489.4
Eastern OK	$669.6	$481.6	$1,063.8	$499.9
Great Plains	$3,758.4	$2,489.5	$5,971.1	$2,583.9
Midwest	$2,029	$2,779.3	$3,223.5	$2,884.7
Navajo	$1,726.2	$1,186.7	$2,742.5	$1,231.7
Northwest	$9,144.9	$10,725.2	$14,528.7	$11,131.9
Pacific	$2,401.6	$3,273.2	$3,815.4	$3,397.4
Rocky Mtn	$4,576.2	$1,511.1	$7,270.3	$1,568.4
So. Plains	$691.3	$426.2	$1,098.3	$442.3
Southwest	$4,617.0	$8,796.1	$7,335.1	$9,129.6
Western	$8,128.8	$5,422.8	$12,914.3	$5,628.4
CO/NIFC	$22,843.0	$1,473.5	-	-
Total	**$61,644.3**	**$40,332.9**	**$61,644.3**	**$40,332.9**

The full rate forest protection rates vary from about $1.40 to $4.00/acre/year depending upon forest type and geographic location. This covers cost of preparedness *and* suppression. Protection for range lands in Oregon is voluntary and is done through 17 Range Protection Associations in a "Neighbors Helping Neighbors" program that covers 3.3 million acres of private lands and about 0.5 million acres of state land (Foster 2012). Direct state payments to fire protection on range lands in Oregon are lower than $.05 per acre per year. These protection associations compete for outside grants and are eligible for the Federal Excess Property Program (FEPP) through which they, and state fire protection programs, such as the State of Washington, obtain much of their fire-fighting equipment, such as trucks and engines, at little or no charge.

Table A.15. BIA Preparedness budget by protection acre and Hazardous Fuel Reduction budget by reservation acre (2011). Preparedness and hazard reduction budgets have BIA CO/NIFC allocation prorated to regions in proportion to BIA area budgets. Derived from Mason (2013a).

BIA Regions	Protection Acres	Reservation Acres	Preparedness $/ac	Hazardous Fuel $/ac
Alaska	1,190,191	1,184,040	$0.38	$1.14
Eastern	562,170	647,070	$2.18	$0.76
Eastern OK	635,456	641,145	$1.67	$0.78
Great Plains	11,241,503	5,883,850	$0.53	$0.44
Midwest	1,345,414	1,503,991	$2.40	$1.92
Navajo	17,170,109	17,170,109	$0.16	$0.07
Northwest	5,360,088	4,990,868	$2.71	$2.23
Pacific	462,340	386,695	$8.25	$8.79
Rocky Mtn	9,334,226	6,360,787	$0.79	$0.25
Southern Plains	452,482	454,206	$2.43	$0.97
Southwest	4,961,629	4,675,421	$1.48	$1.95
Western	12,597,009	12,573,036	$1.03	$0.45
Overall	**65,312,617**	**56,471,218**	**$0.94**	**$0.71**

Forest protection services provided by Idaho and Montana to private owners are reportedly about $0.60/acre/year and the fire preparedness budget for Minnesota is about $0.50/acre/year.

USFS fire preparedness for 2011 averages $3.78 per acre (Table A.16). Budgets are highest in the Pacific NW (Region 6) and California (Region 5) and, outside of Alaska, lowest in the Southwest (Regions 3 and 4). Fire preparedness allocations between the USDA and DOI are difficult to compare due to differences in accounting practices between the two agencies. Preparedness personnel for the USDA can be reimbursed for their normal weekly work time on suppression, while DOI personnel cannot. However, BLM budgets (Table A.17) are similarly highest in northern Rockies, Oregon and California. The average cost of preparedness is $0.85/acre excluding Alaska.

Using comparator regions between the BIA, USFS, and BLM (Table A.18) the USFS per acre budgets are higher than BIA budgets, consistent with the USFS having a much greater percentage of forest acres (Table A.13). In the East, though, where percentage of forest acres is most similar, the USFS budgets still typically exceed BIA budgets. All of the federal agencies significantly exceed Minnesota's fire budget ($0.50/acre). The Navajo Region receives considerably less than USFS and BLM comparators. The Southwest and Western BIA regions receive much less than USFS, as does the BLM. The USFS Region 5 (primarily California) receives the largest preparedness funding of any USFS region (42% of the total USFS preparedness budget) and the Pacific Region (California) receives the highest per acre funding in the BIA.

Table A.16. National Forest System Preparedness and Hazardous Fuel Reduction Budgets (2011) with Washington Office costs prorated to regions in proportion to regional budgets. The land base is National Forest land per region net of Wilderness. Derived from Danelle (2012).

Forest Service	Prorated Preparedness	Prorated Hazardous Fuels
Region	**$/acre**	**$/acre**
Region: 01	$3.17	$1.13
Region: 02	$1.81	$1.44
Region: 03	$2.99	$1.96
Region: 04	$1.89	$0.75
Region: 05	$16.65	$3.29
Region: 06	$3.86	$1.41
Region: 08	$2.86	$2.95
Region: 09	$2.05	$0.94
Region: 10	$0.16	$0.07
Average	**$3.71**	**$1.45**
Average w/o Alaska	**$3.78**	**$1.49**

Table A.17. BLM Preparedness and Hazardous Fuel Reduction Budgets (2011) with Washington Office, Fire Aviation, National Training Center, and National Operations Center support prorated to states in proportion to state budgets. Derived from Thauland (2012).

State	Prorated Preparedness $/acre	Prorated Hazardous Fuels $/acre
Alaska	$0.47	$0.02
Arizona	$0.63	$0.35
California	$1.31	$0.44
Colorado	$1.24	$0.72
Idaho	$1.81	$1.27
Montana	$1.77	$0.69
Nevada	$0.50	$0.14
New Mexico	$0.45	$0.44
Oregon	$1.31	$1.30
Utah	$0.71	$0.47
Wyoming	$0.34	$0.20
Average BLM	**$0.73**	**$0.35**
Average BLM w/o Alaska	**$0.85**	**$0.49**

Hazardous fuel reduction

Hazardous fuel reduction is an important safety and resource conservation activity in dry forest ecosystems. Allocating hazardous fuel reduction treatments nationally within, and between, agencies has been part of a larger activity within the DOI and USDA for the past 10 years to rationalize preparedness and hazardous fuel reduction plans for development of budgets. For

the last several years the BIA has received about 22% of the DOI hazardous fuel reduction budget (Mark Jackson, ITC Board Meeting, December 11, 2012). Tribal land is equal to about 18% of the lands under DOI responsibility, outside of Alaska. The combination of national budget priorities and known deficiencies in the databases supporting the Fire Program Analysis has created considerable concern within the BIA and tribal fire organizations. The DOI is making changes to HFPAS system (DOI, 2012 Budget Justification, page 39) to reflect these concerns.

In 2011, on a cost per administrative acre basis, excluding Alaska, the BIA hazardous fuel reduction allocation to tribes averaged about $0.69/acre of reservation land (Table A.19) as compared to $1.49/acre of National Forest land outside of Wilderness, and $0.49/acre for the BLM. BIA allocations to the Western and Navajo Regions were much lower than comparator regions of the USFS and BLM. BIA allocations were comparable in the East and higher than comparator regions in the Northwest, Pacific, and Midwest regions. (Table A.19).

Table A.18. BIA, National Forest System, and BLM Comparators by BIA region for fire preparedness. The land base for BIA is total protected acres. The land base for USFS is net of Wilderness. The land base for the BLM is state administrative acres.

BIA Regions	Preparedness $/ac	Forest Service	Preparedness $/ac	BLM State Office	Preparedness $/ac
Alaska	$0.38	Region 10	$0.16	Alaska	$0.47
Eastern	$2.18	Region 9	$2.05	--	--
Eastern OK	$1.67	-	-	Colorado	$1.24
Great Plains	$0.53	-	-	Colorado	$1.24
Midwest	$2.40	Region 9	$2.05	Colorado	$1.24
Navajo	$0.16	Region 4	$1.89	Arizona, NM	$0.63/0.45
Northwest	$2.71	Region 6, 1	$3.86/1.13	Oregon, ID, MT	$1.13/1.81/1.77
Pacific	$8.25	Region 5	$16.65	California	$1.31
Rocky Mtn.	$0.79	-	-	Wyoming	$0.34
So. Plains	$2.43	-	-	Colorado	$1.24
Southwest	$1.48	Region 3	$2.99	Arizona, NM	$0.63/0.45
Western	$1.03	Region 3	$2.99	Nevada, Utah	$0.50/0.71
All w/o AK	$0.95	All w/o AK	$3.78	All w/o AK	$0.85
All	$0.94	All	$3.71	All	$0.73

BIA hazardous fuels removal treatment. Photo provided by Robyn Broyles.

Table A.19. BIA and National Forest System and BLM Comparators by BIA region for hazardous fuel reduction budgets for BIA regions. The land base for USFS is net of Wilderness. The land base for the BLM is state administrative acres.

BIA Regions	Hazardous Fuel Reduction $/Ac	Forest Service	Hazardous Fuel Reduction $/Ac	BLM State Office	Hazardous Fuel Reduction $/Ac
Alaska	$1.14	Region 10	$0.07	Alaska	$0.02
Eastern	$0.76	Region 9	$0.94	--	--
Eastern OK	$0.78	-	-	Colorado	$0.72
Great Plains	$0.44	-	-	Colorado	$0.72
Midwest	$1.92	Region 9	$0.94	Colorado	$0.72
Navajo	$0.07	Region 4	$0.75	Arizona, NM	$0.35/0.44
Northwest	$2.23	Region 6, 1	$1.41/1.13	Oregon, ID, MT	$1.30/1.27/0.69
Pacific	$8.79	Region 5	$3.29	California	$0.44
Rocky Mtn.	$0.25	-	-	Wyoming	$0.20
So. Plains	$0.97	-	-	Colorado	$0.72
Southwest	$1.95	Region 3	$1.96	Arizona, NM	$0.35/0.44
Western	$0.45	Region 3	$1.96	Nevada, Utah	$0.14/0.47
All w/o AK	$0.69	All w/o AK	$1.49	All w/o AK	$0.49
All	$0.71	All	$1.45	All	$0.35

Discussion

Prior IFMAT reports have shown that federal funding for forestry on Indian forest land significantly lags federal, private, and state lands, particularly in the West. The gap between federal funding for Indian forest land and other federal land appeared to be narrowing between IFMAT I and IFMAT II, primarily due to reduced funding for the National Forests and the creation of the National Fire Plan (2000).

IFMAT III finds that federal forestry funding for Indian forest lands still lags forest land investments on the federal forests (National Forests and BLM), state forests and private lands, particularly in the West. Forest investments can be divided between forest stewardship and forest production. The USFS (commercial forestland) and BLM (noncommercial forestland) are the best comparators for forest stewardship, including wildfire management (hazardous fuel reduction and fire preparedness). The states and industry are the best comparators for production costs that use management systems similar to those practiced on Indian lands.

Forest stewardship investment

Investments for providing minimum forest management services (stewardship) on the National Forests, states, and larger private land owners are in the range of $5-$6/acre/year, including roads. National Forests funding is $8.57/acre (Table A.6) without recreation, wilderness, mineral, and law enforcement. Subtracting the direct costs of timber management ($2.41/acre) and grazing ($0.32/acre), the cost of stewardship management is in the range of $5.60-6.00 per acre per year. Similar costs can be demonstrated on state lands and larger private lands owners. National forest investments in hazardous fuel reduction and fire preparedness are approximately $1.50 and $3.75/acre respectively (Table A.20).

Minimum management services on noncommercial timberland and noncommercial woodland appear to be about $1.40/acre/year using the 2011 BLM budget considering soil, water, air, riparian, cultural resources, wild horse management, facilities and transportation. A previous study by the BIA Midwest Region has suggested that the management of woodlands be considered about one-quarter of that of commercial timberland. This is consistent with ratio between BLM and National Forest stewardship costs (1.40/5.60 = 25%). BLM investments in hazardous fuel reduction and fire preparedness are approximately $0.50 and $0.85/acre outside of Alaska respectively (Table A.17). We use these estimates in Table A.20 as being representative of most Indian lands.

Table A.20. Estimated stewardship costs for commercial forest land and other Indian Lands, $/ac/year using estimates based on National Forests for commercial forest and commercial woodland and BLM for noncommercial forest and noncommercial woodland.

	Stewardship (w/o wildfire mgt.)	**Hazardous Fuel Reduction**	**Preparedness**
Commercial Forest Land	$5.60 (National Forest)	$1.50 (National Forest)	$3.75 (National Forest)
Non-Commercial/Range	$1.40 (BLM)	$0.50 (BLM)	$0.85 (BLM)

A management study of private forest land management in the Pacific Northwest (Figure A.1) showed that management costs for smaller properties were more costly to manage than larger properties.

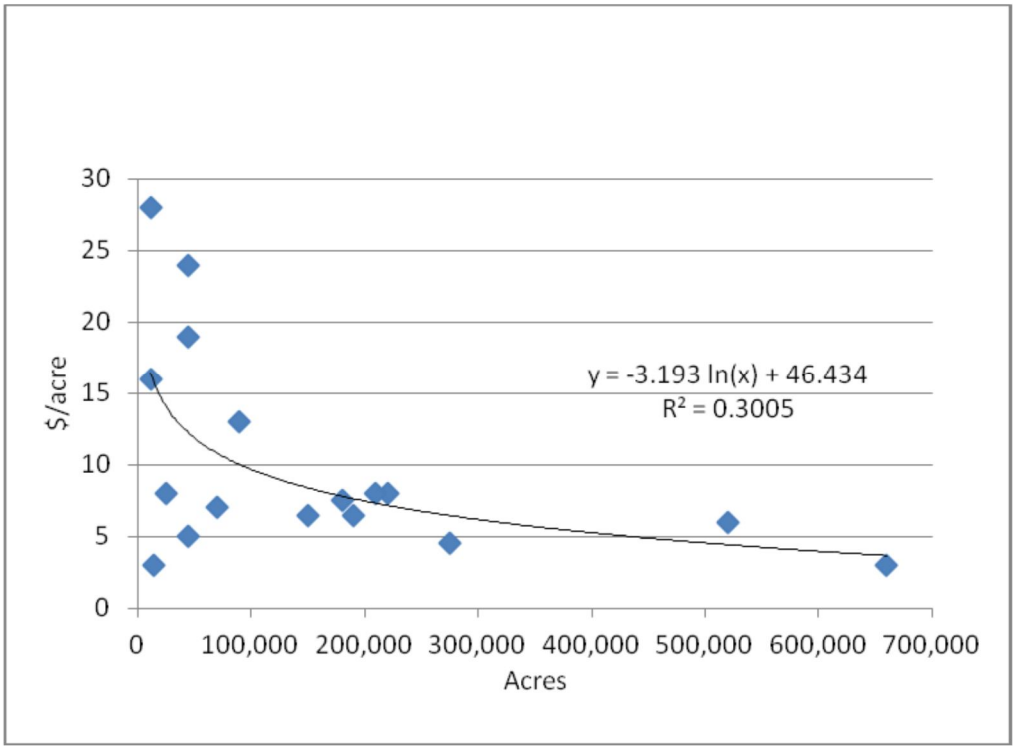


Figure A.1. Forest management costs ($/acre) as a function of size of ownership from a 1989 study of 17 private forest lands in the Pacific Northwest.

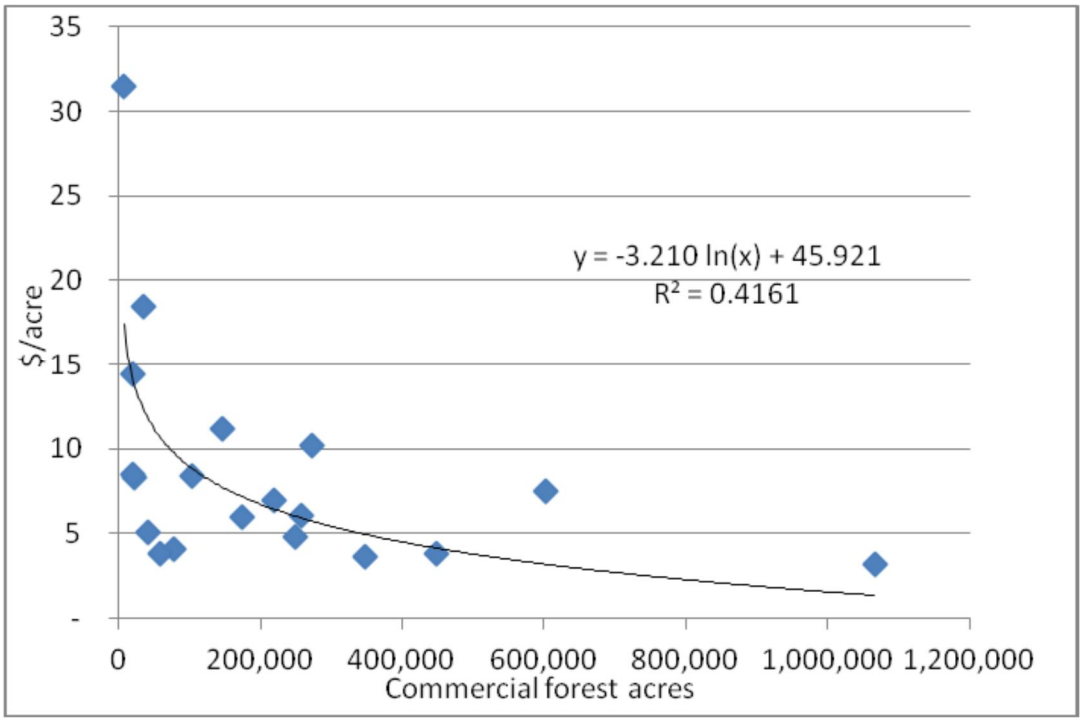


Figure A.2. BIA funding ($/acre) versus commercial forest acres from tribes that IFMAT visited during the IFMAT III assessment.

IFMAT III observed a similar trend with higher per acre BIA funding for reservations with fewer commercial forest acres. (Figure A.2). Category 1 and Category 2 tribes account for about 90 percent of the commercial forest land including nearly all of the commercial timberland. Using 500,000 acres or larger of commercial forest land as the base, the management cost multipliers for smaller management units range from 1.2 to 3.5 with a weighted average of 1.54 considering the distribution of commercial forest land over 100 reservations (Table A.21).

Table A.21. Commercial forest acres by size class and BIA category and management cost multipliers developed using the regression equation from Figure A.1.

Size Class (1000 ac)	No. of Cat 1 Tribes	Cat 1 Com Forest Acres (1000)	No. of Cat 2 Tribes	Cat 2 Com Forest Acres (1000)	Cat1 + 2 Com Acres (1000)	Percent	Cost Multiplier
1000 +	2	2594	0	0	2594	29	1
500-1000	1	603	0	0	603	7	1
250-500	6	2018	0	0	2018	23	1.2
100-250	11	1726	1	166	1892	21	1.7
50-100	5	388	5	499	887	10	2.3
25-50	7	250	7	253	503	6	2.8
<25	15	218	40	201	419	5	3.5
Total/Ave	**47**	**7797**	**53**	**1119**	**8916**	**100**	**1.54**

To recognize the cost of managing the smaller units in tribal forestry as compared with larger federal and state agencies we recommend increasing the cost of managing the tribal commercial forest land by a factor of 0.54 to reflect the smaller management units in tribal forestry as compared to the larger federal and state agencies. This increases the $5.60 /acre for commercial forest land to $8.62/acre (Table A.22). We do not have data to provide a similar adjustment factor for noncommercial forest land or wildfire management.

Table A.22. Estimated stewardship costs for commercial forest land and other Indian Lands, $/ac/year using estimates based on National Forests for commercial forest and commercial woodland and BLM for noncommercial forest and noncommercial woodland with an adjustment for reservation size.

	Stewardship (w/o wildfire mgt.)	**Hazard Reduction**	**Preparedness**
Commercial Forest Land	$5.60 x 1.54=$8.62 (National Forest)	$1.50 (National Forest)	$3.75 (National Forest)
Non-Commercial/Range	$1.40 (BLM)	$0.50 (BLM)	$0.85 (BLM)

Applying the investment factors from Table A.21 to Indian forest land yields an equivalent cost of stewardship of $219.7 million (Table A.23).

Table A.23. Estimated forest stewardship costs for Indian trust lands, million dollars/year. Commercial timberland and commercial woodland ~ 9.9 million acres, non-commercial timberland and noncommercial woodland ~8.5 million acres, hazardous fuel reduction land base ~ 56.5 million acres, wildfire preparedness land base ~ 65.3 million acres. Row 1 is calculated using commercial forest land. Row 2 is calculated using the forest, reservation, or protected acres minus commercial forest acres.

	Forest Stewardship (w/o wildfire mgt.) Million $	**Hazardous Fuel Reduction Million $**	**Preparedness Million $**	**Total Forest Stewardship Million $**
Com Forest Land (timber/woodland)	$85.4	$14.9	$37.1	$137.4
Non-Commercial Forest Land /Other	$11.9	$23.3	$47.1	$82.3
Total	$97.3	$38.2	$84.2	$219.7

Incremental Timber Production Cost

Additional costs for timber production above forest stewardship costs, based on states and industry as the comparators, are $40-80/MBF. Timber production costs on the federal lands are much higher for a variety of reasons including NEPA procedures, eligible timber prescriptions and wage differences. Timber production budgets would depend on the sustainable harvest levels adopted by tribes (Table A.24).

Table A.24. Total recommended investment level to fund forest stewardship and timber production for Indian Forests using $60/MBF for timber production.

Annual Harvest Level	Forest Stewardship Million $	Timber Production Million $	Total Million $
400 MMBF	$219.7	$24.0	$243.7
500 MMBF	$219.7	$30.0	$249.7
600 MMBF	$219.7	$36.0	$255.7
700 MMBF	$219.7	$42.0	$261.7

A budget to support the current allowable annual cut of 564 MMBF would be about $254 million on a national basis. Individual regional budgeting would depend upon regional conditions. In comparison BIA funding to the tribes totaled $154 million in 2011 (Table A.1).

Comparison to BIA needs estimates

Each 5 years the BIA, in collaboration with the tribes, documents current and needed funding and staffing in the FPA Report. The 2011 FPA report identified $70.9 million in additional funding (Table A.25). The largest category was Wildfire Management including Fire Preparedness, Hazard Reduction and Rehabilitation. Other major needs included additional funding for Forest Planning, Program Administration, Multiple Use Management, and Timber Sales. The BIA total Forestry budget including the identified 2011 FPA needs is $100.0 million (52.0+48.0). This compares to IFMAT's recommendation of $133.3 million ($97.3 million for stewardship plus $36.0 million for a production goal of 600 million board feet). The BIA wildfire management budget including identified 2011 FPA needs is $124.9 million (102.0+22.9). This compares to IFMAT's estimated wildfire management budget of $122.4 million (219.7-97.3) to bring wildfire management investment to the level of similar federal land. Part of this difference is due to BIA funding requests for site rehabilitation after wildfire ($3.9 million).

Table A.25. Forestry funding needs identified in the 2011 Funding and Position Analysis Report. (BIA 2012a).

Budget Category	Identified Additional Need (Million $)
Program Administration	$9.6
Administrative Support	$0.9
Forest Planning	$10.2
Forest Product Sales	$6.7
Forest Development	$5.0
Multiple Use Management	$8.4
Forest Research	$0.1
Forestry Education	$1.7
Technical Assistance	$0.2
Road Design, Construction, Maintenance	$1.0
Pest Management and Other Forestry	$2.7
Wildfire Management	$22.9
Law Enforcement	$1.5
Total	$70.9

Findings

A1. BIA allocations to the forest program have not kept up with inflation and are now only 77% of the 1991 budgets. Funding allocations have declined, in inflation adjusted dollars, from $67.4 million in 1991 to $52.0 million in 2011. Over this same period of time Indian forest trust lands have increased from 15.6 million acres to 18.4 million acres.

A2. Reliance on outside grants has increased as BIA forestry allocations have fallen in real terms.

A3. For forest stewardship costs on commercial forestland, including wildfire management, the Forest Service is the best comparator. For other Indian lands, the BLM is the best comparator. For active timber production, States and private industry are better comparators.

A4. Indian forests are receiving less forest management funding on a per acre basis than adjacent forest land owners in the West, particularly the level of funding that states are investing in their trust lands, and private forest owners are investing in their own lands. The difference in funding is probably understated due to generally lower salaries paid to tribal professionals and technicians under self-governance.

Forest Management Funding Comparisons ($/acre) (Including Alaska)		
Forestry Organization	**$/acre**	**Range $/acre**
BIA	**$2.82**	
States East		
Wisconsin State Lands	$3.83	
Minnesota State Lands	$5.50	
Maine State Lands	$7.63	
Private East		
Southeast	$4.85	[$1.33-$16.77]
Northeast	$4.55	[$3.73-$6.58]
North Central	$4.43	[$3.41-$6.51]
Appalachia	$2.70	[$1.58-$4.82]
States West		
Montana Trust Lands	$11.28	
Idaho Department of Lands	$17.91	
Washington Trust Lands	$19.98	
Oregon Trust Lands	$32.67	
Private West		
Westside OR/WA	$19.00	[$8.00-$62.00]
Eastside OR/WA	$7.25	[$2.00-$12.00]
National Forests	$8.57	
Fire Funding Allocations ($/acre)		
Organization	**Preparedness**	**Hazardous Fuels**
BIA	**$0.94**	**$0.71**
National Forests	$3.71	$1.45
BLM	$0.73	$0.35
Roads Maintenance Funding ($/acre)		
BIA	**0.46**	
National Forests	$2.04	
BLM (all)	$0.30	
BLM (all except AK)	$0.38	
BLM (OR)	$1.54	

A5. Many tribes have relatively smaller land bases than their neighbors, particularly their federal neighbors. Management costs are a function of scale, with smaller land bases generally costing more to manage per acre than larger bases (See Figures A.1 and A.2).

A6. On a regional scale, Indian forests are receiving less fire preparedness funding on a per acre basis than comparators in the West, particularly the Forest Service. In the Midwest, fire preparedness funding compares favorably with their neighbors, but funding comparability may be overstated due to scale of ownership. In the East, Indian forests are receiving about the same for fire preparedness as the Forest Service. Overall, the National Forests are receiving $3.71/acre, the BLM is $0.73/acre and the BIA is receiving $0.94/acre.

National Forests	$3.71/ac
BLM	$0.73/ac
BIA	$0.94/ac

A7. On a regional scale, Indian forests budget allocations for hazardous fuel allocations compare favorably with Forest Service and BLM allocations for most regions, but are significantly lower in the Western and Navajo Regions. Overall, the National Forests are receiving $1.45/acre, the BLM is $0.35/acre and the BIA is receiving $0.69/acre.

National Forests	$1.49/ac
BLM	$0.49/ac
BIA	$0.69/ac

A8. Trespass is a growing problem in Indian Country. Illegal drug production, illegal hunting, theft of non-timber products, and dumping of wastes occur on Indian forests. Although NIRFMA provided for establishing civil penalties for trespass, law enforcement funding remains a recurring problem. This study finds the cost of law enforcement on National Forest lands is $0.58/acre and on BLM lands is $0.11/acre. Law enforcement is not funded through forestry.

National Forests	$0.58/ac
BLM	0.11
BIA	--

A9. Accounting practices for the USDS differ from the DOI for fire suppression. DOI rules require the first 40 hours on suppression must be charged to preparedness for preparedness personnel. USDA allows full fire project time to be charged to suppression significantly leveraging preparedness dollars.

A10. Road maintenance allocations to the BIA road system continue to lag far behind the National Forests contributing to environmental impacts and higher road user costs. In addition, many tribes do not collect user fees on their roads, contributing to a lack of stable funding for road maintenance programs.

Recommendations

A1. Revise the federal funding model to provide for basic land stewardship costs including wildfire management, plus additional support for active timber management, consistent with tribal goals.

A2. Increase base level funding by $100 million to support forest stewardship for Indian forests to reach parity with National Forest and BLM funding on their respective land classifications. Program additional funding to support timber production consistent with tribal goals. At least an additional $100 million is needed to be comparable with other public and private forest managers and correspond to an annual allowable cut of 564 MMBF. Current (2011) funding is $154 million.

Recommended investment levels linked to annual allowable cut to fund forest stewardship and timber production for Indian Forests.

Annual Harvest Level	Forest Stewardship Million $	Timber Production Million $	Total Million $
400 MMBF	$219.7	$24.0	$243.7
500 MMBF	$219.7	$30.0	$249.7
600 MMBF	$219.7	$36.0	$255.7
700 MMBF	$219.7	$42.0	$261.7

A3. Provide adequate additional funding for law enforcement (trespass) on Indian forest lands ($2-3 million per year).

A4. Standardize accounting systems for fire preparedness personnel on fire suppression between the DOI and the USDA to eliminate bias and to facilitate benchmarking.