

TWO FORESTS UNDER
THE BIG SKY:
TRIBAL V. FEDERAL MANAGEMENT

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TO THE READER

“The earth is our mother,” Chief Seattle is famously quoted as saying in 1854. “Every part of this country is sacred to my people. Every hillside, every valley, every plain and grove has been hallowed by some fond memory.” This kind of sentiment is part of the lore of Native Americans that has caused the conquering European-Americans to feel guilty about the disgraceful treatment accorded the original Americans. The quote also points out the superior ecological values of Indian tribes.

Despite its frequent use, the quote from the Chief is a fake. Tribes were not paragons of ecological virtue as envisioned today. Large fires, for example, were set to force animals out of the woods for often “wasteful slaughters.” Today it is generally recognized that Native Americans did not deserve the treatment received during westward expansion of the nation. The actions of the Bureau of Indian Affairs and other agencies deserve careful scrutiny. Similarly, Indians deserve serious consideration for their treatment of the environment, given the harsh realities of the world they lived in.

In this policy series, Alison Berry continues her work on the quality of forests that result under different management schemes. She contrasts side-by-side forests in Montana. One is operated by the United States Forest Service under the watchful eye of Congress. The other is run by Indian tribes on reservation lands. The Indians win this battle.

Berry shows that the tribes manage their land more efficiently for timber production and for ecological value. On both the cost and output side of the equation, the tribes do a better job. This is not because Indians are born to appreciate the environment more than people who work for the Forest Service. As Berry explains, the tribes need forest productivity to support their livelihood. The Forest Service is a federal bureaucracy.

There is a lesson to be learned here. Congressional policies controlling the massive areas of timber land are not producing good results no matter how they are measured. A for-profit lesson from the Native Americans is in order.

This essay is part of the *PERC Policy Series* of papers on timely environmental topics. This issue was edited by Roger Meiners and Laura Huggins and designed by Mandy-Scott Bachelier.

TWO FORESTS UNDER THE BIG SKY: TRIBAL V. FEDERAL MANAGEMENT

INTRODUCTION

Two forests: similar resources, different outcomes. In north-west Montana, the U.S. Forest Service and the Confederated Salish and Kootenai Tribes (CSKT) oversee adjacent forests rich in pine, larch, and Douglas-fir. Both forests are managed for multiple resources, including timber production, recreation, and habitat for fish and wildlife. Despite many similarities, their economic and environmental performances differ.

National forests in the United States are not the harvest machines they once were. At the peak in 1987, these forests yielded 13 billion board feet in timber. Today, they produce a small fraction of that output. The harvest in 2008 was 2 billion board feet (USDA Forest Service 2008a). Critics of the Forest Service's timber sale program may argue that this is a positive change since the Forest Service lost \$88 million annually from below-cost timber sales in the late 1990s (USDA Forest Service 2001a, 49).

National forests with good timber growing potential should provide a positive return to the taxpayers.

There was also evidence of bloated operating costs and poor stewardship of watersheds and wildlife habitat (O'Toole 1988; Leal 1995; Fretwell 1999). While the Forest Service is staffed with trained professionals, cumbersome regulations, environmental

appeals, and political meddling interfere with responsible forest management.

With the decline of timber harvests, federal forest management and funding has increasingly focused on wildfire suppression. In 1991, 13 percent of the Forest Service budget was dedicated to fire management; by 2008 that figure had risen to 45 percent (USDA Forest Service 2008b).¹ Although the agency's stated goal is to reduce the risk of wildfire, most fire spending is devoted to a handful of large conflagrations—not prevention or restoration to avoid costly emergencies (O'Toole 2002; Berry 2008).

Due to the focus on fire spending, the economic performance of the Forest Service timber program has fallen out of the spotlight. The Timber Sale Program Information Reporting System (TSPIRS), used to provide detailed information to the public on the finances of the Forest Service's timber program, discontinued in 1998 amidst disputes over accounting methods. Furthermore, the agency is no longer required to track expenditures for timber management activities on each national forest. Without documentation of expenditures, there is no way to know how timber programs have performed in recent years.

Despite the huge reduction in timber sales, the Forest Service should be held accountable on the ground and on the ledger. National forests with good timber-growing potential should provide a positive return to the taxpayers. Other for-

est owners can offer some guidance. This study examines two productive forests—one federal and one tribal—comparing the receipts and costs of timber sales and environmental performance under the two ownerships.

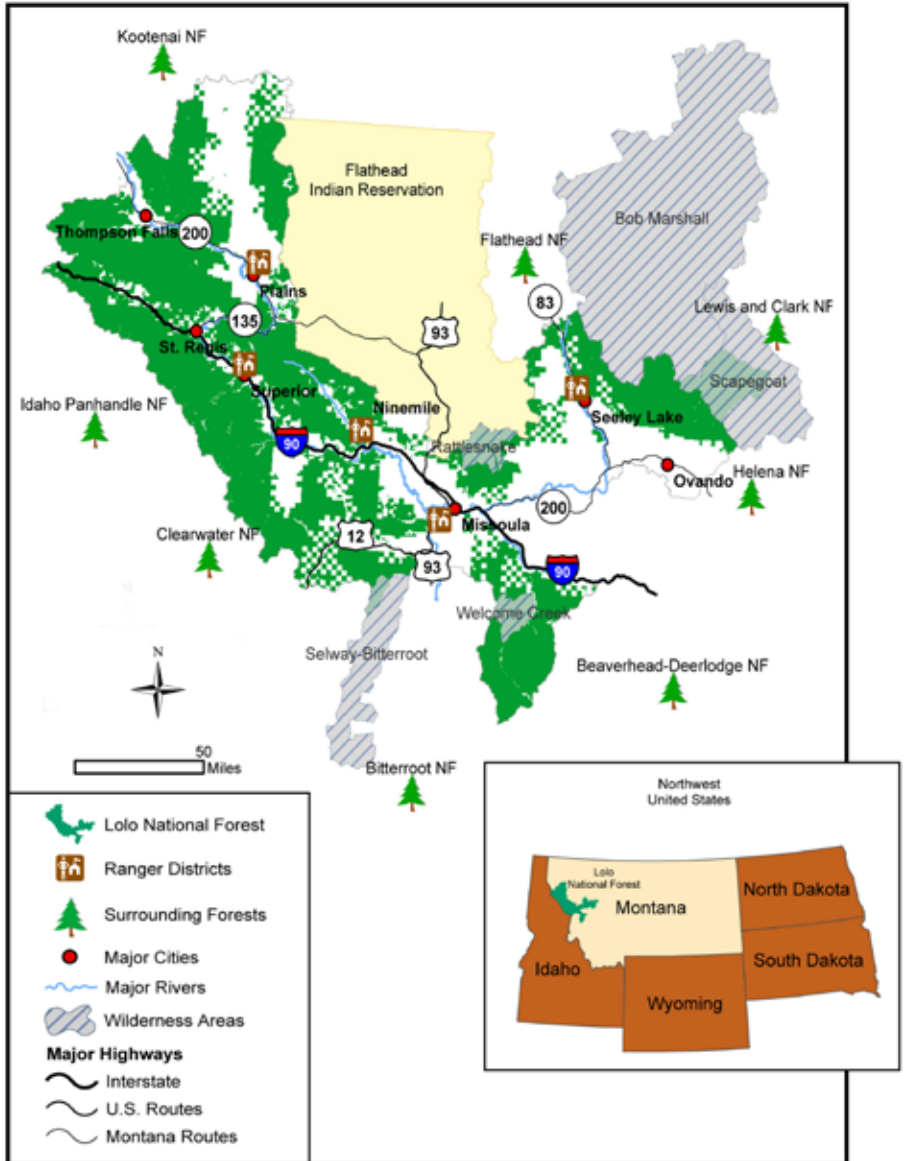
EVOLUTION OF TRIBAL SOVEREIGNTY

The evolution from federal control to tribal control of reservation forests offers an interesting comparison to national forests. Resources on Indian reservations were managed by the U.S. Bureau of Indian Affairs (BIA) for much of the last century. Although the BIA was put in charge ostensibly “to protect Indians and their resources from Indians” (Morishima 1997), it became clear that the agency did not always serve the best interests of the tribes.² One study comparing tribal versus BIA management of forest resources on Indian reservations found that “as tribal control increases relative to BIA control, worker productivity rises, costs decline, and income improves. Even the price received for reservation logs increases” (Krepps 1992, 179).

Recognizing BIA shortcomings, Congress allowed some tribes to take greater control of their resources and tribal programs, starting with the Indian Self Determination Act of 1976 (Public Law 93–638). Under this authority, the Confederated Salish and Kootenai Tribes have taken control of more than a hundred programs on the Flathead Reservation (CSKT 2004).

This taste of sovereignty enabled the CSKT to see the benefits of local control. After lobbying Congress for further separation from the BIA, the Flathead Reservation became one of ten reservations to participate in the Self-Governance Demonstration Project initiated in 1988. Under this trial program, tribes were given authority, subject to any statutory requirements, to manage tribal property and assets. The demonstration project was successful and in 1994, Congress made the project

Map: Lolo National Forest and the Flathead Indian Reservation



Note: Most tribal timberland is in the eastern and southern portions of the reservation, bordering the Lolo National Forest.

Source: USDA Forest Service (2008c).

permanent for tribes already in the program. In 1995, the CSKT Forestry Department compacted with the federal government to officially take the reins of all forestry decisions on the Flathead Reservation (CSKT 2004).

COMMON GROUND

The Flathead Indian Reservation forest and the nearby Lolo National Forest have much in common. Bordering one another, the reservation and the national forest have similar soils and are subject to the same climatic factors—growing season, rainfall, and temperatures—that influence tree growth. Both forests are comprised of mixed softwoods; Douglas-fir is the primary species, followed by larch and pine. The forests provide a range of products and amenities including not only timber, but grazing, recreational opportunities, wilderness areas, and habitat for fish and wildlife such as grizzly bears and Canada lynx. In addition, both tribal and Forest Service managers must comply with environmental regulations like the National Environmental Policy Act (NEPA) and the Endangered Species Act (ESA).³ NEPA requires managers to analyze environmental impacts prior to implementing any management activity—including harvesting timber—and ESA mandates the protection of critical habitat for threatened and endangered species.

Management on each forest draws on the expertise of a wide range of professionals. Nearly 300 people work for the Lolo National Forest—foresters as well as archeologists, hydrologists, engineers, and wildlife biologists (USDA Forest Service 2008d). The Flathead Reservation Forestry Department has 58 full-time staff and 38 seasonal employees, mostly in forest operations and fire management (CSKT 2000, 159). Other tribal natural resource departments provide assistance in water management, fish and wildlife management, and environmental protection.

Table 1: Forest Characteristics

	FLATHEAD RESERVATION	LOLO NATIONAL FOREST
Total Forest Area	459,408 acres ^a	2,079,327 acres ^b
Area in Timber Production	293,024 acres ^c	1,232,863 acres ^d
% in Timber Production	64%	59%
Standing Timber Volume	7,146 board feet/acre ^e	7,137 board feet/acre ^f
Potential Productivity	~76 cubic feet/acre/year ^g	80 cubic feet/acre/year ^h
Avg. Net Annual Growth	105 board feet/acre/year ⁱ	108 board feet/acre/year ^j

Note: Area in timber production excludes non-forest areas, unproductive forest lands, designated wilderness, and other protected areas.

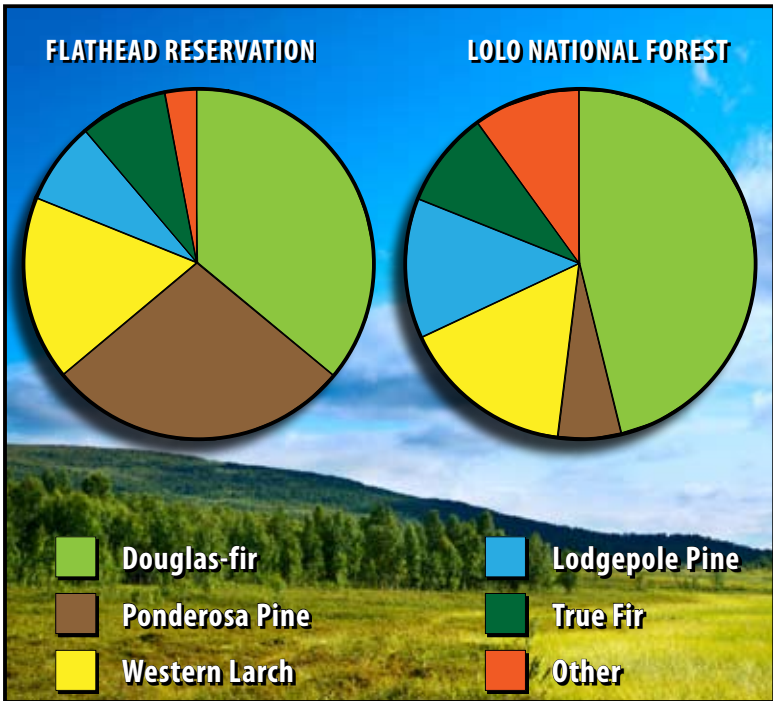
Sources: ^aCSKT (2000, 91); ^bDeBlander (2000, 1); ^cCSKT (2000, 91); ^dUSDA Forest Service (1986); ^eFlathead Indian Reservation (1999, 5); ^fUSDA Forest Service (1986) and DeBlander (2000, 9); ^gCollins and Conner (1991, 7). This figure represents the productivity on tribal and non-industrial private timberland in northwestern Montana; ^hLeal (1995, 4); ⁱFlathead Indian Reservation (1999, 7), data for 1989–1999; ^jLarry DeBlander (Forester, USDA Forest Service RMRS FIA) e-mail correspondence, January 8, 2008; John Shaw (Analyst, USDA Forest Service RMRS FIA) e-mail correspondence, January 14, 2008. Data for 1986–1996.

A comparable proportion of the total land area on each forest—64 and 59 percent—is managed for timber production (table 1). The forests also have similar volumes of standing timber per acre, potential productivity, and annual average net growth. Operationally, foresters carry out the same duties on each forest when it comes to managing timber. Managers design timber sales, prepare environmental assessments, solicit competitive bids for timber under a comparable auction process, and administer harvests. Like Forest Service managers, tribal managers oversee road construction and maintenance, timber stand improvements (e.g., pre-commercial thinning), and reforestation in harvested or burned areas. On both forests,

managers must balance timber production with other forest uses through the preparation of multi-year forest plans.

Along with these common elements there are also differences to consider. First, the Lolo National Forest has more than four times the number of acres in timber production than the reservation (see table 1 on page 6). Thus the Lolo has a much larger resource base from which to generate timber revenue. In addition, the Lolo has a higher proportion of lodgepole

Table 2: Species Mix



Note: Flathead Reservation percentages are based on gross stocking volume, which includes stumps, tops, defective and decayed wood, while Lolo percentages are based on net volume, which includes only the merchantable portions. Lolo data is for sawtimber (minimum diameter = 9 inches) on lands suitable for timber production. Flathead Reservation data includes trees with a minimum diameter of 8 inches (8.5 inches for ponderosa pine) on commercial forest lands. These proportions are not the same as timber harvest proportions.

Sources: Flathead Indian Reservation (1999, 7); DeBlander (Forester, USDA Forest Service Rocky Mountain Research Station Forest Inventory and Analysis) e-mail correspondence, January 8, 2008.

Timber sales on the tribal forests averaged \$2.04 in gross annual revenues for every dollar spent, whereas the Lolo averaged \$1.11.

pine, while the reservation has a higher proportion of ponderosa pine (table 2 on page 7).

The different proportions of pine species on the forests have management implications, which could impact costs and revenues. Because the two species are ecologically distinct, they are harvested differently. Lodgepole pine is adapted

to infrequent, intense, stand-replacing fires. Foresters attempt to mimic that historic natural disturbance pattern through moderately sized clear-cuts, about 40 acres, followed by prescribed burns (USDA Forest Service 2002a, 51). As the name implies, a clear-cut involves harvesting all of the merchantable trees in a given area. This approach, also called even-aged management, is appropriate for lodgepole pine ecosystems, but not for ponderosa pine, which is adapted to frequent, low-intensity fires. Ponderosa is more suited to uneven-aged management through selection cutting—the removal of scattered groups or individual trees (Davis et al. 2001, 95). Reflecting the differing compositions of pine species on each forest, the reservation makes greater use of uneven-aged management⁴ and the Lolo relies more on even-aged management.⁵

These two harvesting methods can affect the bottom line. Costs per unit of wood produced tend to be lower for clear-cutting than for alternate harvesting systems, other factors being equal (Davis et al. 2001, 96). Therefore, one would expect lower timber management costs on the Lolo compared with the reservation.

Timber revenues could also be affected by the varying proportions of lodgepole pine and ponderosa pine if these two species commanded different prices. This is not the case,


however. Data from 2000 to 2005 (data were not available before 2000) indicate that sawlog prices for ponderosa and lodgepole pine in Montana differed only slightly. Ponderosa pine averaged \$443 per thousand board feet (MBF) and lodgepole pine averaged \$449 per MBF (Bureau of Business and Economic Research 2004–2005).⁶

A WORLD APART IN OBJECTIVE

Another difference between the two forests—a crucial one—is that they have different goals when it comes to generating income. The goals of the CSKT’s forest management plan include “strengthening tribal sovereignty and self sufficiency through good forest management, and providing perpetual economic benefits of labor, profit, and products to local communities” (CSKT 2000, 13). The forests of the Flathead Reservation are a source of income that support forest management and other tribal operations. In contrast, the mission of the Forest Service is “to sustain the health, diversity, and productivity of the Nation’s forests and grasslands to meet the needs of present and future generations” (USDA Forest Service 2008e). The Forest Service is not required to generate income from timber sales or other forest products. Instead, national forests are managed to achieve “the combination [of land uses] that will best meet the needs of the American people...and not necessarily the combination of uses that will give the greatest dollar return or greatest unit output.”⁷

Because the tribes depend on the forest for income, they have an incentive to promote the productivity of this resource, while keeping costs low. The Forest Service lacks such an incentive. Most Forest Service timber revenues are sent to the general treasury; national forest management is funded primarily by Congressional appropriations. Without

Table 3: Total Timber Costs, Revenues, & Harvest Volumes (1998–2005)



	Costs	Revenues	Harvest Volume (MBF)	Net Revenue per MBF
Flathead Reservation	\$15,510,287	\$31,683,031	129,523	\$125
Lolo National Forest	\$24,307,653	\$26,888,289	203,106	\$13

Note: Data are adjusted to 2006 dollars.

Sources: USDA Forest Service (2008a); Bureau of Indian Affairs (1999–2006)

a connection between budgets and revenues, there is little motivation to operate efficiently, or to ensure the continued productivity of the forest.

COMPARING ECONOMIC PERFORMANCE

This difference impacts the bottom line. When comparing timber returns from 1998 to 2005, the tribes’ total timber revenues exceeded total timber sale costs by more than \$16 million, while Lolo total timber revenues exceeded total timber sale costs by only \$2.5 million. In other words, timber sales on the tribal forests averaged \$2.04 in gross annual revenues for every dollar spent, whereas the Lolo averaged \$1.11 in gross revenues for every dollar spent.⁸ (See table 3)

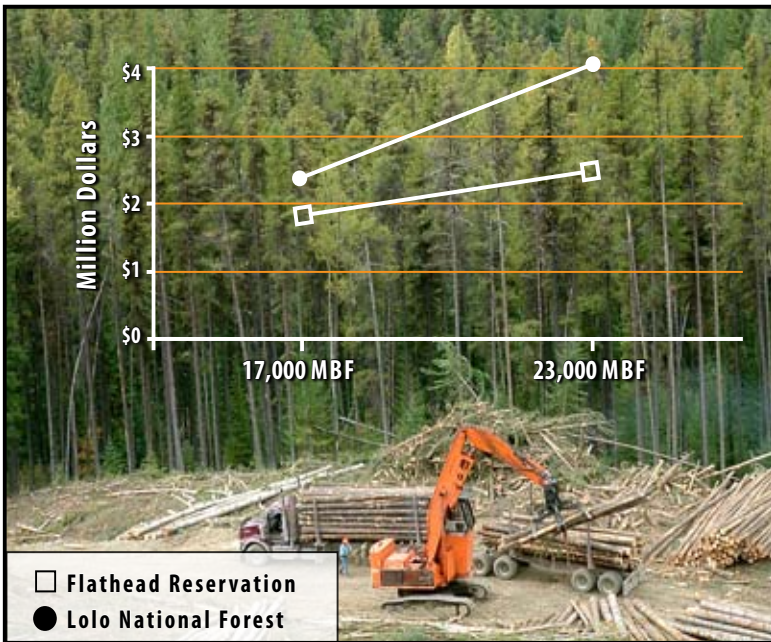
This disparity in income was not due to lower harvests on the part of the Forest Service. In fact, the Lolo National

Forest produced 57 percent more timber than the Flathead Reservation, but the tribes were still able to generate more income. A closer look at timber management costs and revenues provides more insight into the differences between the two jurisdictions.

Timber Management Costs

Cost data were supplied by managers from the Lolo National Forest and the Flathead Reservation.⁹ To ensure that data were comparable between the reservation and the national forest, timber management costs for both jurisdictions were limited

Figure 1: Timber Management Costs at Similar Harvest Levels



Note: Cost at 17,000 MBF for CSKT is an average of 1999 & 1998; Lolo is an average of 1999 & 2002. Cost at 23,000 MBF for CSKT is an average of 2001, 2003, and 2005; Lolo is an average of 2001 & 2003.

Sources: USDA Forest Service (2008a); Bureau of Indian Affairs (1999–2006); Jim Durglo (Department Head, Forestry Department, Confederated Salish and Kootenai Tribes) e-mail correspondence, November 7, 2006; Sam Redfern (Program Officer, Lolo National Forest) e-mail correspondence, January 31, 2007.

to actual costs, including harvest design and administration, planning, and overhead.¹⁰ To avoid bias, costs were compared at the same levels of harvest. Over this range, management costs were as much as 62 percent higher on the Lolo National Forest than on the Flathead Reservation (see figure 1 on page 11). In addition, statistical analysis revealed significantly lower costs on the reservation than on the national forest over the entire range of harvest levels.¹¹

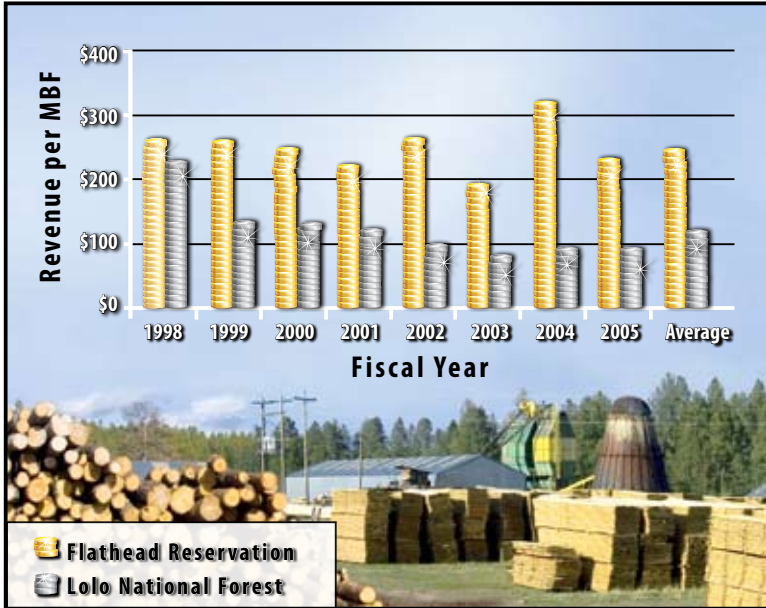
The result is consistent with previous research that found national forests have higher timber management costs than tribal forests (Keegan et al. 1996; Gordon et al. 1993; Gordon et al. 2003). These studies report that tribal forests had fewer employees than federally owned forests. This holds true on the Flathead Reservation and the Lolo National Forest. Timber sale preparation on the reservation involves the equivalent of 13 full-time employees.¹² On the national forest, the same task involves 16 full-time staff.¹³

In addition, research shows that tribal forestry workers are generally employed at lower pay scales than their counterparts in the Forest Service (Gordon et al. 1993, V-27–V-32; Gordon et al. 2003, 62–66). One study found that per board foot harvested, personnel costs on the Flathead Reservation are 24 percent less than on national forests in western Montana (Keegan et al. 1996). Compared to the reservation, the larger staff and higher pay scales on the Lolo result in higher management costs for the national forest.

Timber Revenues

The tribes also came out ahead in revenues during this period, despite years in which harvest volumes on the Lolo were much greater than on the reservation. Overall, timber revenues averaged \$248 per MBF harvested on the Flathead Reservation, and only \$125 per MBF on the Lolo National For-

Figure 2: Timber Program Revenue (1998–2005)



Note: Average revenue for years 1998–2005: Flathead Reservation \$248 MBF; Lolo National Forest \$125 MBF.

Sources: USDA Forest Service (2008a); Bureau of Indian Affairs (1999–2006).

est.¹⁴ Per employee in timber sale preparation, the Flathead Reservation generated \$24 million in timber revenue, while the Lolo earned only \$16 million. As shown in figure 2, timber revenues per MBF on the Flathead exceeded those on the Lolo by a wide margin in all but one year during the period under this study.¹⁵

The main reason for the difference in revenue between the reservation and the national forest is in the quality of wood being sold. Salvaged timber—damaged by fire, insects, or disease—made up 43 percent of the timber sold from the Lolo National Forest from 1998 to 2005, and only 24 percent of the tribes’ timber sales for the same period.¹⁶ Because it is lower quality, salvaged timber commands a lower price than undamaged timber.¹⁷

ENVIRONMENTAL PERFORMANCE

Timber is just one output on each forest, as both are managed for multiple uses. The Lolo National Forest and the Flathead Reservation each have active fee-based recreation programs. On the reservation, recreation fees—like timber revenues—are retained by the tribes, supporting projects like wildlife surveys, fish stocking, and repair and maintenance of boat ramps and trails. On the Lolo, unlike timber revenues, most recreation fees—80 percent—are retained on the forest for improvement and maintenance of recreational facilities (Fretwell 1999, 20). Recreation fees that are retained on site provide incentives for managers to look beyond timber production. Notably, the numbers of recreational visits have been increasing on both forests in recent years, despite declining visitation on national forests nationwide (Milstein 2008).

In addition, each forest holds wilderness areas where no timber harvesting is allowed. Designated in 1979, the 91,778-acre Mission Mountains Tribal Wilderness area on the Flathead Reservation was the first wilderness area created by tribal authority. It provides important habitat for grizzly bears in the high elevations, which are closed to human use in the late summer to minimize disturbance to bears (CSKT 2005). The Lolo National Forest contains portions of four wilderness areas encompassing 145,734 acres (USDA Forest Service 1986, VI-12). On both forests, wilderness areas include the highest peaks as well as lower-elevation areas that could produce timber if harvesting were not prohibited by wilderness designation.

Both forests are also home to a diverse range of fish and wildlife, including grizzly bear, threatened northern grey wolf, and Canada lynx. The Tribal Wildlife Management Program has a “strong, proactive approach,” and they have had success re-establishing populations of the endangered Peregrine Falcon

and Trumpeter Swan, once rare on the reservation (Becker and Lichtenberg 2009). Other projects are underway to re-introduce the northern leopard frog and the Columbian sharp-tailed grouse. The tribes balance timber goals for revenue production with non-timber outputs, such as fish and wildlife habitat.

On the Lolo, that balance has been elusive. Timber revenues are lower than on the tribal forest, and while some non-timber programs appear successful, others have not fared as well. For instance, monitoring reports indicate that the Lolo exceeds its goals for habitat improvement for fish, big game, and threatened and endangered species. But the national forest has fallen behind on silvicultural exams, reforestation, trail construction, noxious weed control, and fuels management (USDA Forest Service 2002a)—activities that are critical components of multiple use forest management.

Some problems stem from a rash of environmental litigation on the Lolo National Forest, which diverts time and resources from on-the-ground management (USDA Forest Service 2002b, 2002c). Between 1998 and 2005, nineteen cases were filed against the Lolo (USDA Forest Service 2007a). In 2007, more than 21 million board feet were held up in appeals and litigation (Backus 2007)—about the equivalent of an average year’s harvest for the forest since 2000 (USDA Forest Service 2008a).

In contrast, tribal forest management is rarely challenged in court, so managers are more able to address environmental concerns in a timely fashion (Skinner 2005–2006). As Jim Peterson, editor of *Evergreen Magazine* said, “The tribes do a lot of things I wish we were doing on our federal forest lands if we weren’t all knotted up in litigation” (quoted in Hagengruber 2004). Only one timber sale has

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On the Lolo, there is little connection between performance and reward.

Management decisions are often dictated by politics rather than local conditions.

been appealed on the Flathead Reservation. In the 1980s, Friends of the Wild Swan brought suit against the Bureau of Indian Affairs. The case was dropped, however, when the court required Friends of the Wild Swan to post a bond to process the appeal. “If they lost the appeal, they would lose the bond” (Jim Durglo quoted in Skinner 2005–2006, 23).

On the Lolo, litigants are not required to post a bond to process an appeal. After 74,000 acres burned on the national forest in 2000, managers prepared a 35.2 million board foot post-fire salvage timber sale, which was halted when the Lolo lost an appeal in federal court. Timber sale planning on the Lolo after that lawsuit has been more conservative, in an effort to avoid a repeat situation (Devlin 2004). Timber harvest levels on the Lolo have dropped from an average of 45 million board feet per year in the 1990s to 20 million board feet per year since 2001 (USDA Forest Service 2008a).

Decreased timber harvests limit the ability to address ecological problems. For example, many forests in the Northern Rockies, including the Lolo, are overly dense due to past fire suppression practices that excluded the ecological role of fire (Fretwell 1999).

As a result, these forests are at higher risk of catastrophic wild-fire and insect infestation. Recent fires and mountain pine beetle outbreaks on the Lolo are evidence of these problems—the Lolo area was the most heavily insect-infested area in Montana from 2002 to 2005 (USDA Forest Service 2002d, 2003, 2004, 2005).

One way to mitigate infestations is by thinning potential host trees to slow the spread of insects. Since beetles prefer pine trees, Lolo managers attempted to increase harvests of

lodgepole pine to reduce the extent of infestations. The 1986 forest plan states “lodgepole pine accounts for approximately 20 percent of the volume cut, and it is expected to increase to nearly 40 percent within the next several years” (USDA Forest Service 1986, VI-12). Although lodgepole pine accounts for nearly 40 percent of the Lolo’s harvest in recent years (USDA Forest Service 2008a), the overall harvest volume has decreased. As such, management had little impact on beetle activity (USDA Forest Service 2002d, 2003, 2004, 2005).

Without effective mitigation, the Lolo infestation has spread to neighboring tribal lands. The reservation experienced a 46 percent increase in mortality from 1989 to 1999 (Flathead Indian Reservation 1999, 7) and a tribal report noted, “the increase in mortality may be related in part to lack of harvest on surrounding lands, which have induced significant levels of bark beetles on all four sides of the reservation” (Flathead Indian Reservation 1999, 6). Indeed, Forest Service reports from 2001, 2004, and 2007 observed that beetle infestations on the Flathead Reservation were prominent on the borders with the Lolo National Forest (USDA Forest Service 2001b, 2004, 2007b).

CONCLUSION

The Forest Service may be harvesting far less timber than it once did, but the evidence from this comparison indicates that there is reason to doubt that the agency is running in an economically efficient or environmentally responsible manner. In comparison with the CSKTs, the Lolo National Forest harvested much more timber from 1998 to 2005, yet it made far less money. A primary reason for the Lolo’s weaker economic performance is that Forest Service managers have less incentive or ability to generate income compared to tribal managers.

Since the CSKT rely on timber revenues to support tribal

operations, they have a vested interest in the continuing vitality of their natural resources. Tribal forest manager Jim Durglo comments, “Our forest is a vital part of everyday tribal life. Timber production, non-timber forest products, and grazing provide jobs and income for tribal members and enhance the economic life of surrounding communities” (Azure 2005). The tribes stand to benefit from responsible forest stewardship—or bear the burden of mismanagement.

In contrast, on the Lolo, there is little connection between performance and reward. Management decisions are often dictated by politics rather than local conditions. National forests receive funding from Congressional appropriations apparently regardless of timber revenues or ecological concerns. Revenues from forest operations are sent to the general treasury. The disconnect between budget inputs and revenues generated means there is scant incentive to operate efficiently, or to manage the forest for future productivity. Moreover, there is no direct constituency for cost-effective national forest management comparable to the tribal members on the reservation.

The sources of the problems facing the Lolo and the Forest Service nationwide are many: never-ending appeals and litigation drawing resources away from on-the-ground management, inherent flaws in large bureaucratic organizations relying on top-down planning, political interference, regulatory congestion, unstable funding streams, and so on. The root of these problems—Congress—could be part of the solution. On reservations, Congress helped move Native Americans toward sovereignty via The Self-Determination Act, giving tribes more rights to manage their own affairs, to govern themselves, and to control their land and its resources. Congress could help provide positive incentives and local control on national forests as well.

Forest Service reform should take a lesson from tribal forestry and consider the following recommendations:

- Tie budgets to performance. On the Flathead Reservation, the tribes reap the rewards of a productive timber sale program—or suffer the consequences of poor stewardship. Similar incentives on federal forests could encourage better management. Each national forest should retain timber revenues and be allowed to carry surpluses forward year to year. Forest service managers are skilled professionals who should have real managerial authority and not suffer from distant political control.
- Cover their own costs with revenue generated from a mix of forest products and amenities compatible with forest health. This will encourage managers to keep costs down and tailor management to local conditions.
- Overhaul the public land laws that are dragging down federal land management. Reform should be directed at making national forests less vulnerable to seemingly endless litigation. Give federal managers the local authority to quickly address environmental problems and respond to opportunities.
- Create a local constituency. Reservation forests benefit from oversight by tribal members who rely on the forests for income, recreation, and spiritual renewal. Since local counties have the closest tie to neighboring forest lands, county-level groups may be the best candidate for Forest Service constituencies. Moreover, at a time when tens of millions of acres of federal lands are at high risk of catastrophic fire, those living closest to the hazard are most eager to mitigate the threat.
- Develop a system where management of the national forests is turned over to local counties. Forest managers, subject to local oversight, would have authority to plan harvests and create other revenue opportunities rather than take marching orders from a distant bureaucracy

and even more remote Congress. In some counties, federal land holdings are a majority of a county's land. The citizens of such counties are well aware of the significance of these resources and the role they play in economic vitality. A movement for county sovereignty over federal lands has stirred in the West for nearly two decades (Kemmis 2001).

Reforms could be instituted on a trial basis on ten national forests, similar to the tribal Self-Governance Demonstration Project. Demonstration projects may yield successful programs that could be extended to other forests. In addition, studies could address whether even fewer federal constraints would better encourage stewardship on federal lands.

Clearly, there is no need to "protect Indians and their resources from Indians." Rather, it is the federal agencies that need to improve resource management. Efforts toward reform on national forests should focus on freeing federal managers from centralized control. Get the incentives right, so that federal forest managers, like tribal forest managers, have a stake in the ongoing economic and environmental vitality of the forests.

NOTES

- 1 In 2008, the Forest Service budget was \$4.6 billion (USDA Forest Service 2008b), compared to \$3.2 billion in 1991 (\$5.1 billion in 2008 dollars) (O'Toole 2003).
- 2 For example, in *Cobell v. Salazar*, an ongoing class-action suit filed in 1986, Native Americans are seeking billions of dollars (estimates range from \$3 billion to more than \$100 billion), in missing gas and oil royalties from Indian lands collected by the Department of Interior.
- 3 The Forest Service must also comply with other

regulations like the Multiple Use Sustained Yield Act and the National Forest Management Act that do not apply to tribal forests.

- 4 The Flathead Reservation has emphasized uneven-aged management since the reservation's first management plan in 1945 prescribed selective harvest (Becker and Corse 1997). Even in Douglas-fir stands, the tribes only use clear-cutting when necessary to curb the spread of disease or to restore historical conditions (CSKT 2000, 88).
- 5 The Lolo uses a variety of harvesting methods, and although even-aged management has been on the decline over the past two decades, some form of clear-cutting accounted for nearly half of the acres harvested from 1987 to 2001 (USDA Forest Service 2002a).
- 6 Adjusted to 2006 US dollars.
- 7 Multiple-Use Sustained-Yield Act 16 U.S.C. § 531 (a) (1988)
- 8 A previous PERC study (Leal 1995) found that the Lolo National Forest lost money on timber sales from 1988–1992. During that period, the Lolo's harvest was 21 percent low-value miscellaneous softwood, 25 percent Douglas-fir, and 18 percent lodgepole pine. By 1998–2005, the species mix had changed to include only 7 percent miscellaneous softwood, and had more higher-value Douglas-fir (40 percent) and lodgepole pine (41 percent) (USDA Forest Service 2008a).
- 9 Sam Redfern (Program Officer, Lolo National Forest) e-mail correspondence, January 31, 2007. And Jim Durglo (Department Head, Forestry Department, Confederated Salish and Kootenai Tribes) e-mail correspondence, November 3, 2006, and November 7, 2006.
- 10 Costs did not include pre- or post-harvest factors such as road construction, timber stand improvement, or reforestation. If stands will continue to be managed for

timber production, some pre- and post-harvest factors could be included in actual timber program costs, but since these data were not available from both ownerships, they were excluded from this study. Information for volumes of timber harvested come from Indian Forestry Status Reports to Congress (BIA 1999–2006), and Forest Service sold and harvest reports (USDA Forest Service 2008a). All data were adjusted to 2006 dollars.

- 11 The natural logarithm of costs was regressed on the natural logarithm of annual harvests (over the entire range of harvests) with a dummy variable for owner type. With an $R^2=74$ percent, the tribes' lower operating costs were found to be statistically significant at the 5 percent level. Coefficient estimates and associated tests of significance are available from the author.
- 12 Jim Durglo (Department Head, Forestry Department, Confederated Salish and Kootenai Tribes) e-mail correspondence, March 2, 2009.
- 13 Sam Redfern (Program Officer, Lolo National Forest) e-mail correspondence, February 10, 2009.
- 14 Information for timber revenues and volumes harvested come from Indian Forestry Status Reports to Congress (BIA 1999–2006), and Forest Service sold and harvest reports (USDA Forest Service 2008a). Timber program revenues in this analysis represent actual values received for harvested timber. All data were adjusted to 2006 dollars.
- 15 In 1998, lodgepole pine captured relatively high prices, and it made up 60 percent of the Lolo's harvest that year, compared with an average of 37 percent for the other seven years (USDA Forest Service 2008a). This resulted in relatively high revenues per MBF for the national forest that year.
- 16 Sam Redfern (Program Officer, Lolo National Forest)

e-mail correspondence, January 31, 2007, and Jim Durglo (Department Head, Forestry Department, Confederated Salish and Kootenai Tribes) e-mail correspondence, February 6, 2007.

- 17 For example, burned timber tends to lose 20 percent in value per year after a fire (Sessions et al. 2004). On national forests salvage logging often takes a year or two to begin due to lengthy environmental analyses, planning, and public comment periods (Milstein 2006). One reason for the high proportion of salvage sales on the national forest is that these sales are less of a target for litigation than “green” sales of undamaged timber.

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