

# SHOSHONE NATIONAL FOREST

## FOREST PLAN EVALUATION REPORT



FISCAL YEAR 2003

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Shoshone National Forest  
Planning Staff



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# Introduction

This report represents the Shoshone National Forest's Forest Plan Monitoring and Evaluation Report for fiscal year 2003. The format for this report is different from those produced over the last few years. The Forest is starting its Forest Plan revision in 2005. In preparation for that effort, the Forest decided to change the focus of the monitoring report from looking at site-specific issues on an annual basis to a longer-term focus on how the Forest Plan has been implemented since it was approved in 1986.

The report includes discussions for various resource areas. Each resource discussion begins with a summary of selected Forest Plan goals and objectives. Though not inclusive of all Forest Plan direction, the summary provides the highlights for the various resource areas. Following the summary are trend data components that relate to Forest Plan direction. The trend discussions provide context for what has happened to the resource during Forest Plan implementation.

After the release of this report, the Forest will develop additional information for the resources included in the report and for some that have not been included. Additionally, information on future trends and items that should be considered for change during the revision process will be added to each resource discussion. Together, this information will provide a good starting point for discussions on revision of the Forest Plan. A final report with the additional information will be completed in early 2005.

## Air

### Existing management direction

#### Forest Plan goals

Establish an air resource management program (Forest Plan III-10).

Evaluate and protect wilderness air quality and air quality related values (Forest Plan III-10).

Provide air quality compatible with federal and state laws (Forest Plan III-10).

### Discussion of activity and condition trends

The Forest has and continues to meet Forest Plan goals, which are valid and should be carried into revision. Program management has evolved over time and includes budget planning and execution, intra- and interagency coordination, membership with the Greater Yellowstone Area Clean Air Partnership and, when necessary, reviews of Prevention of Significant Deterioration permits. Program management is supported by an air quality specialist located on the Pinedale Ranger District of the Bridger-Teton National Forest. This individual assists with annual updates to agreements, database management (Natural Resource Information System), technical review of Prevention of Significant Deterioration permits, and project level environmental (National Environmental Policy Act) analysis.

Direct project activity includes weekly monitoring of the South Pass National Atmospheric Deposition Program site and thrice-yearly monitoring of air quality related values at Ross and Saddlebag Lakes.

Indirect project activity includes support for the Dead Indian Pass Interagency Monitoring of Protected Visual Environment site, which is maintained by the Wyoming Department of Environmental Quality Air Quality Division; support for bulk deposition monitoring conducted on the Bridger-Teton National Forest; and support to Forest programs that have the potential to affect air quality, such as prescribed fire projects.

Data have been collected at the South Pass National Atmospheric Deposition Program site since 1985.<sup>1</sup> This site has been funded primarily by Simplot Phosphates LLC as part of their Wyoming Department of Environmental Quality Prevention of Significant Deterioration permit. Their requirements under this permit are expiring; the Forest Service is pursuing alternative funding sources to ensure continued monitoring of this important site.

Data have been collected at Ross Lake in the Class I Fitzpatrick Wilderness and at Saddlebag Lake in the Class II Popo Agie Wilderness since 1982. This monitoring is being conducted to assess the effects of acid deposition on air quality related values such as water quality.

Data have been collected at the Dead Indian Pass Interagency Monitoring of Protected Visual Environment site since 2000 to monitor air quality and visibility in the North Absaroka Wilderness.<sup>2</sup>

Since 1986, bulk deposition data have been collected at Hobbs and Black Joe Lakes on the Bridger-Teton National Forest. These data, which are used as a surrogate for conditions on the Shoshone National Forest, are displayed in annual summary reports submitted to the Wyoming Department of Environmental Quality. The Forest is represented at the annual Greater Yellowstone Area Clean Air Partnership meetings. These meetings occur to identify and address key issues relating to air quality in the Greater Yellowstone Area (GYA). The partnership allows for exchange of information and dialogue between numerous state and federal agencies responsible for air quality in the GYA. The partnership produced an assessment in 1999 that identifies GYA air quality issues, conditions, pollution sources, and monitoring sites. This document is available at the Supervisor's Office in Cody. The partnership recently agreed that the assessment should be updated, with a target release date of mid-2005.

The Forest, through technical support from the Bridger-Teton National Forest, continues to be involved in environmental review of projects being analyzed by the Bureau of Land Management in southwest Wyoming. This off-Forest support also provides monitoring of active industrial development in the area.

#### ***Air quality monitoring***

Cursory analysis of National Atmospheric Deposition Program data collected between 1985 and 2004 shows a slight trend toward increasing levels of nitrate and inorganic nitrogen in recent years, as shown in Figure 1 and Figure 2. In addition to Forest Service needs, Wyoming Department of Environmental Quality and other agencies continually analyze data collected from this site. These data, along with data from other National Atmospheric Deposition Program sites in Wyoming, are used to model and track emissions and acid deposition across southwest Wyoming, which includes the Class I Fitzpatrick and Class II Popo Agie Wilderness Areas on the Forest. Because of industrial development in southwest Wyoming and growth of several major cities upwind of the Forest, continued monitoring of this site is important relative to Forest managers being able to demonstrate compliance with the Clean Water Act.

Data from the Bridger-Teton National Forest's bulk deposition sampling indicate a general trend of increasing total nitrate deposition as shown in Figure 3.

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<sup>1</sup> Data are available at <http://nadp.sws.uiuc.edu>.

<sup>2</sup> Data are available at <http://vista.cira.colostate.edu/improve/>.

Figure 1. National Atmospheric Deposition Program/National Trends Network site (WY97 South Pass City) annual inorganic nitrogen wet deposition, 1985 through 2004.<sup>3</sup>

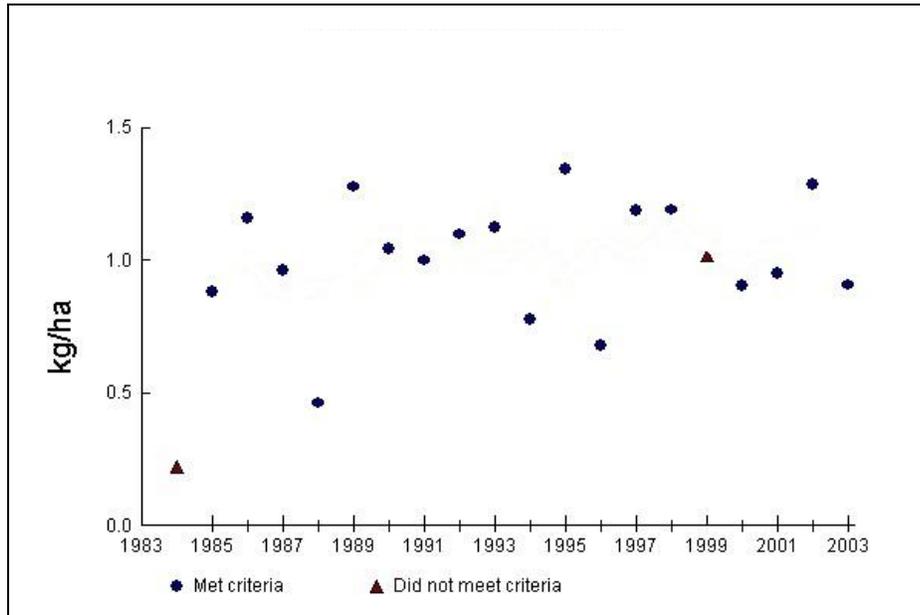
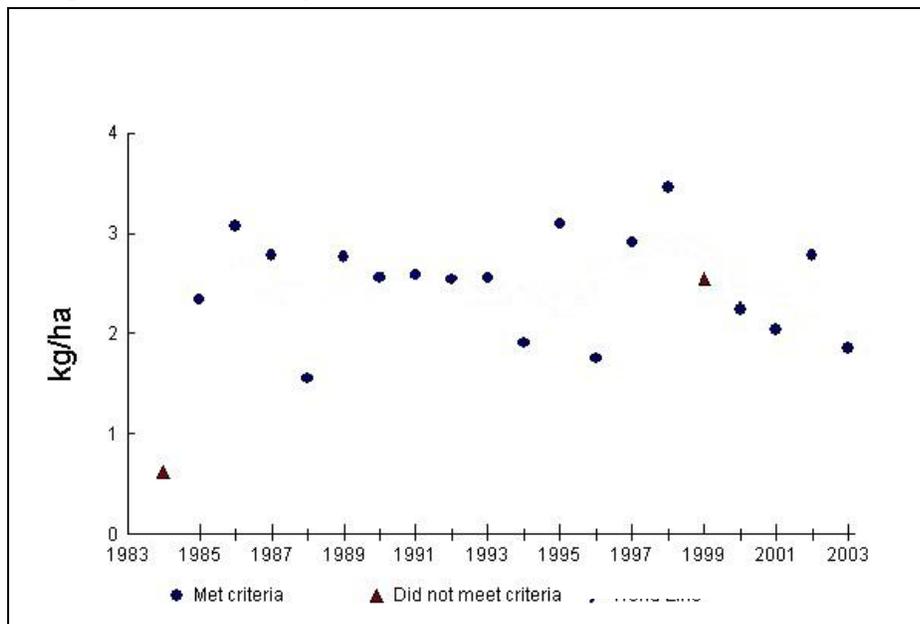


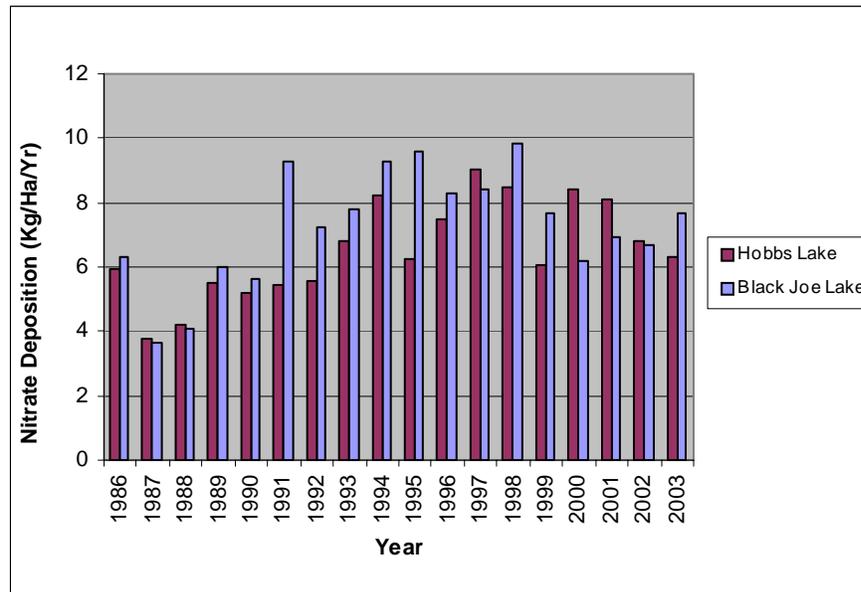
Figure 2. National Atmospheric Deposition Program/National Trends Network site (WY97 South Pass City) annual nitrate wet depositions, 1985 through 2004.<sup>4</sup>



<sup>3</sup> Source <http://nadp.sws.uiuc.edu/sites/siteinfo.asp?net=NTN&id=WY97>

<sup>4</sup> Source <http://nadp.sws.uiuc.edu/sites/siteinfo.asp?net=NTN&id=WY97>

Figure 3. Nitrate deposition data, Bridger-Teton National Forest, 1986 through 2003.



Analysis of lake data collected between 1984 and 1993 (Baron 1996) for air quality related values indicates there does not appear to be a trend in chemical composition. Even though trend was not identified, a decision was made after receipt of the report to continue the monitoring program because these lakes are susceptible to change from acid deposition due to their low buffering capacity. Data collected between 1994 and 2003 are being analyzed and a report is expected in early 2005.

Analysis of Interagency Monitoring of Protected Visual Environment site data collected at Dead Indian Pass from 2000 through 2003 is occurring and will be used as a baseline as additional data are collected in the future. Continued monitoring will help detect changes in air quality and visibility once the baseline has been established. It is too early in the monitoring program to determine trends in air quality.<sup>5</sup>

## Fire management

### Existing management direction

#### Forest Plan goals

Reduce the accumulation of natural fuels (Forest Plan III-8).

Provide cost-effective fire protection to minimize the combined costs of protection and damages, and prevent loss of human life (Forest Plan III-10).

#### Forestwide management direction

The Washakie and North Absaroka Fire Management Plans will be applied as written. Fire management for all other wildernesses will be:

- Control all man-caused unplanned ignitions

<sup>5</sup> Data collected to date are available on the Interagency Monitoring of Protected Visual Environment Web site at <http://vista.cira.colostate.edu/improve/>.

- Control all unplanned ignitions with one-half mile of the boundary between wilderness and non-wilderness
- Confine natural unplanned ignitions to less than 1,000 acres from June 20 to September 30
- Confine natural unplanned ignitions to less than 2,000 acres from October 1 to June 19 (Forest Plan III-41)

Maintain fire dependent ecosystems using fires ignited naturally. Reclaim areas disturbed as part of fire control activities to meet the visual quality objective of retention (Forest Plan III-41).

Take suppression action on all escaped fires considering the following:

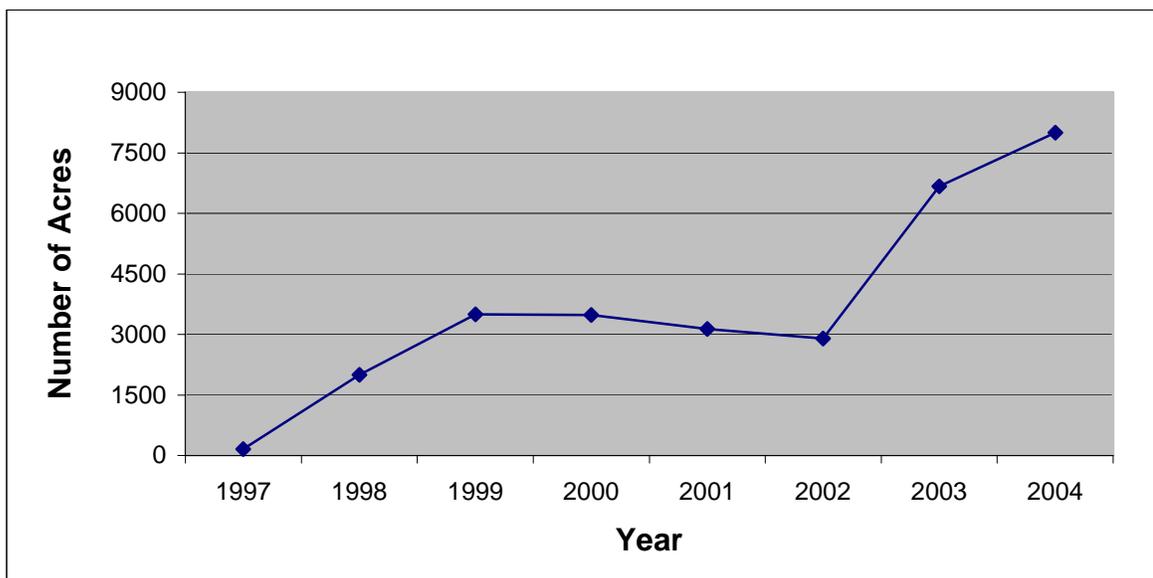
- The values of the resources threatened by the fire (both positive and negative)
- Management objectives for the threatened area(s)
- The fuelbeds the fire may burn in
- The current and projected weather conditions that will influence fire behavior
- Natural barriers and fuel breaks
- Social, economic, political, cultural, and environmental concerns
- Public safety
- Firefighter safety
- Costs of alternative suppression strategies. Use the escaped fire situation analysis to make this determination (FSM 5130.31) (Forest Plan III-96)

### Discussion of activity and condition trends

In 1998, the Forest increased its prescribed burn program as part of the overall fire management program. With the 2000 National Fire Plan, funding increased to facilitate increases in staffing and equipment to further support the fire program. During the fall of 2002, the Forest engaged in a Forest-wide vegetation analysis, resulting in an integrated vegetation management program. The 2003 Healthy Forests Initiative and the Healthy Forests Restoration Act combined to provide the tools, funding, and expectation to treat hazardous fuels and improve fire regime/condition class.

The Forest has completed fire management guides for all five wilderness areas. The use of wildland fire for resource benefit has not been a large part of the program; it is expected to become a major component in the future.

*Figure 4. Acres of fuels treated, 1997 through 2004.*



Since 1970, the Forest has averaged 26 wildfires annually, averaging 49% from natural ignition, 32% from escaped campfires, and 19% from all other causes. Excluding 1988, lightning-caused fires burned 87% of the acreage, campfires burned 5%, and all other human causes burned 8%.

Over the last century, the Forest's fire management program has been focused on fire suppression, with efforts to keep fires as small as possible. Due to persistent drought, the trend in acreage burned since 1998 has been increasing.

*Figure 5. Number of fires by size, 1970 through 2003.*

Size in acres	Number of fires
0 to 0.25	652
0.25 to 9.9	58
10 to 99.9	129
100 to 299.9	8
300 to 999.9	4
1,000 to 4999.9	9
> 5,000	5

Figure 6. Annual number of fires, 1970 through 2003.

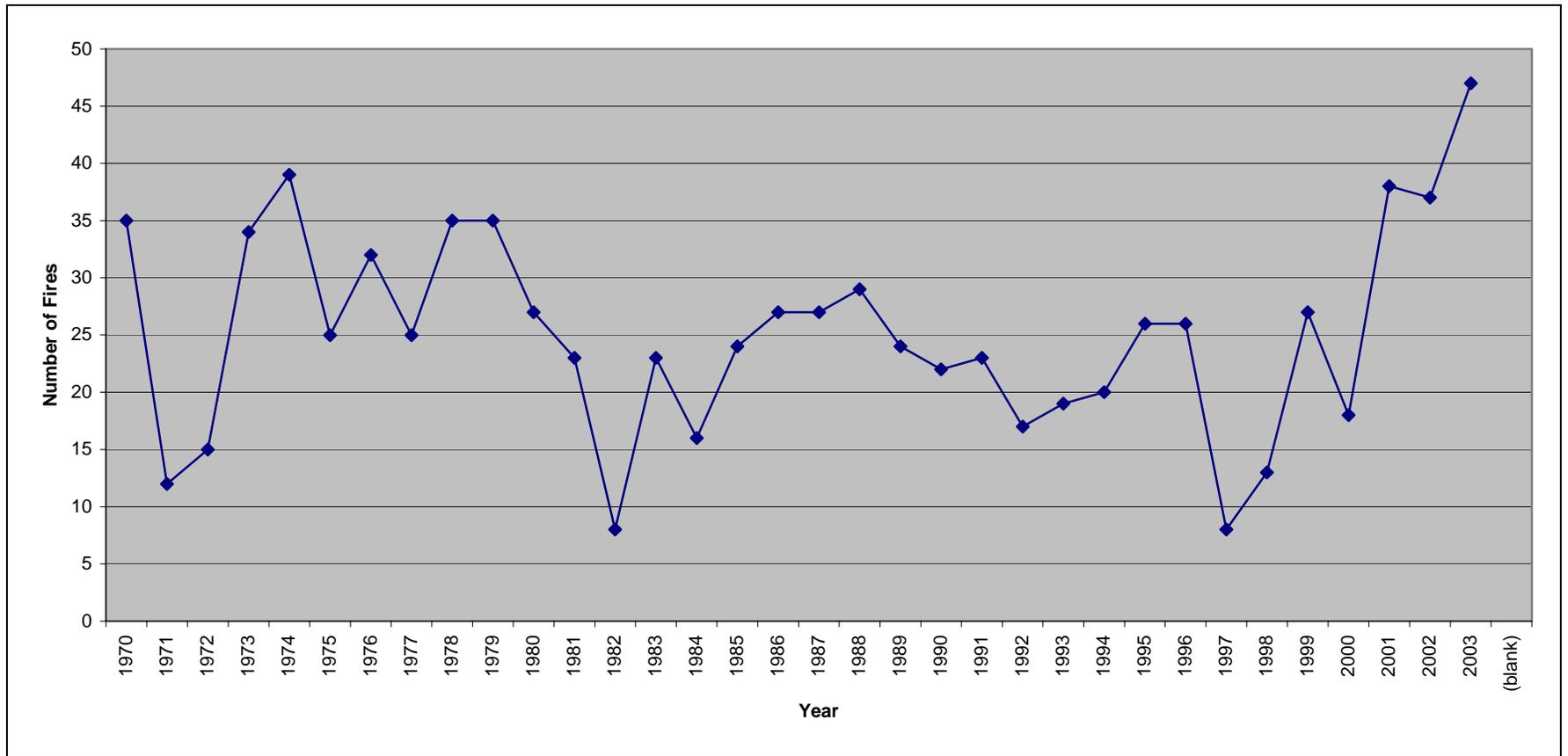
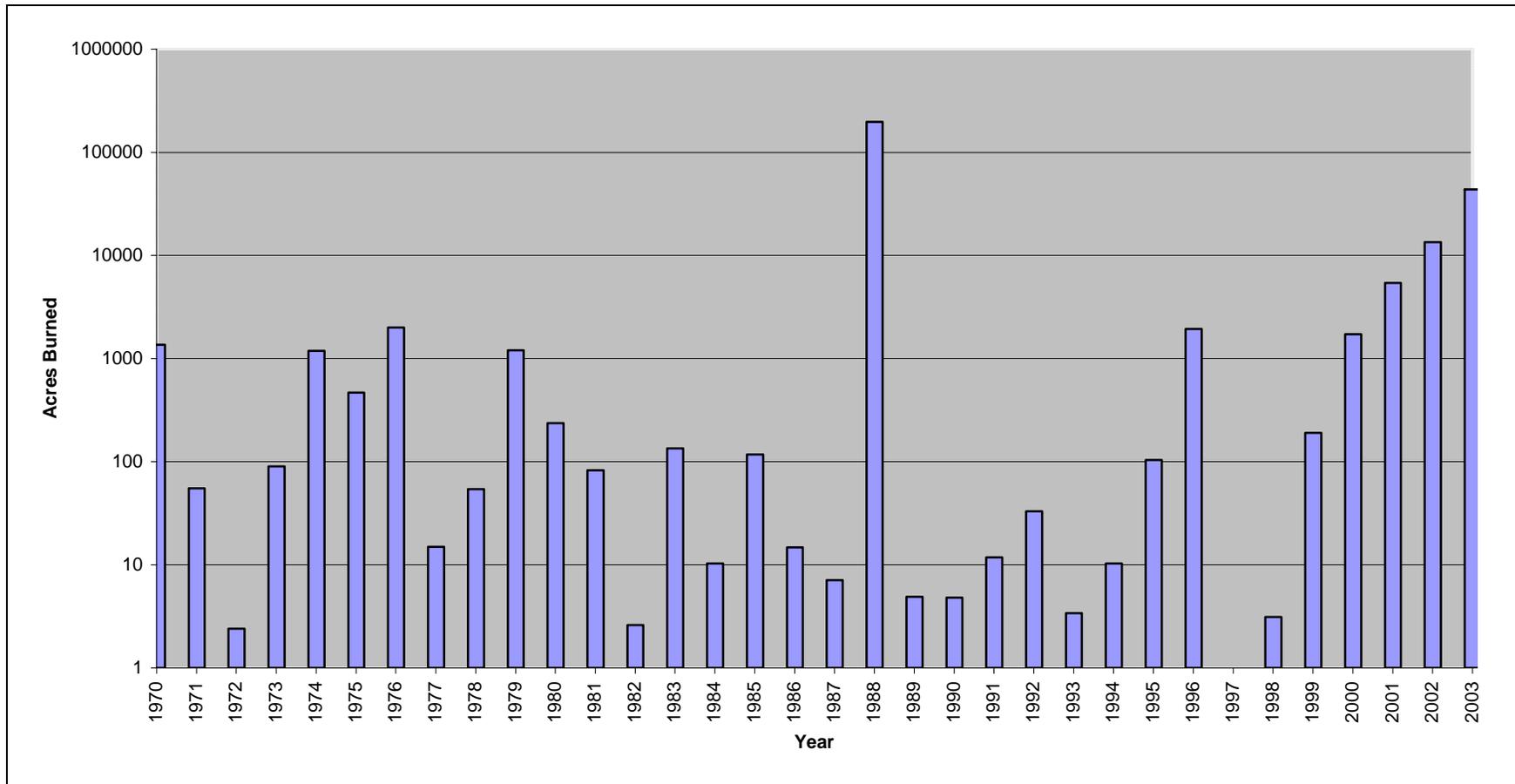


Figure 7. Annual acreage burned, 1970 through 2003.



# Lands—ownership and uses

## Existing management direction

### Forest Plan goals

Acquire private lands within wilderness. Consolidate national forest ownership patterns (Forest Plan III-9).

Pursue land ownership adjustments to improve management efficiency for both National Forest System land and intermingled private land and to meet high priority resource management objectives (Forest Plan III-9).

Provide increased public access to National Forest System lands, appropriate to the management objective of the areas served (Forest Plan III-7).

Acquire necessary rights-of-way to facilitate management of the Forest including public access to National Forest System lands (Forest Plan III-9).

### Forest Plan management direction

Classify lands or interest in lands for acquisition where lands are valuable for NFS purposes according to the following priorities:

- In designated wilderness areas and other Congressionally classified areas
- Where lands or rights-of-way are needed to meet resource management goals and objectives
- Lands which provide habitat for threatened and endangered species of animals and plants
- Lands which include floodplain or wetlands
- On lands of the National Grasslands that provide opportunities for demonstration of multiple uses in grassland agriculture
- On lands having historical or cultural resources, outstanding scenic values or critical ecosystems, when these resources are threatened by change of use or when management may be enhanced by public ownership (Forest Plan III-83)

Classify lands for disposal according to the following priorities:

- To states, counties, cities, or other federal agencies when disposal will serve a greater public interest
- In small parcels intermingled with mineral or homesteads patents
- When suitable for development by the private sector, if development (residential, agricultural, industrial, recreational, etc.) is in the public interest
- When critical or unique resource (wetlands, floodplains, essential big game winter range, threatened or endangered species habitat, historical or cultural resources, critical ecosystems, etc.) effects are mitigated by reserving interests to protect the resource, or by exchange where other critical resources to be acquired are considered to be of equal or greater value
- In National Grasslands, when they offer no opportunity to meet National Grassland demonstration objectives (Forest Plan III-84).

Effect jurisdictional transfers, which achieve the following objectives:

- Reduce duplication of efforts by users and agencies in terms of time, cost, and coordination
- Improve or maintain user access to the administering agency
- Decrease travel and enhance management
- Improve public understanding of applicable laws, regulations, policies, and procedures
- Develop more effective and efficient work units
- Reduce administrative cost (Forest Plan III-84)

Where appropriate and necessary, acquire rights-of-way on existing National Forest System roads and trails (Forest Plan III-83).

## Discussion of activity and condition trends

### Landownership adjustment

Land ownership adjustment through purchase and exchange is an important tool for meeting the goal of improving the efficiency of land management and meeting resource management objectives.

The landownership pattern on the Shoshone National Forest is highly consolidated, with few in-holdings of private land within the Forest boundary. Acquisition projects in the last fifteen years have further improved this pattern with the acquisition of a large number of the in-holdings on the Greybull Ranger District.

Acquisition of other in-holdings is desired, but limited by other Forest priorities, the willingness of sellers, and the ability to obtain funding for acquisition of high priority parcels.

*Figure 8. Shoshone National Forest acreage for 1986, 1991, and 2003.*

Year	Acres
1986	2,433,125
1991	2,432,990
2003	2,437,218

*Figure 9. Acres of land disposed.*

Year	Transaction	Acres
1986	Wyoming Game and Fish	161
1988	Goodyear	3
1989	Julien	1
1991	Stuart	3
1991	B4 Ranch	1
1996	South Fork exchange	157
1997	Les Terry	<1
1998	TE Ranch exchange	55
	Total	382

*Figure 10. Acres of land acquired.*

Year	Transaction	Acres
1986	Wyoming Game and Fish	160
1991	Deer Creek trailhead	1
1992	Kirwin	3,843
1996	South Fork exchange	103
1998	TE Ranch exchange	365
2002	Dunrud	589
	Total	4,530

### Number of rights-of-way

Increased public access to National Forest System lands was identified in the 1986 Forest Plan as a Forest goal. Obtaining access rights necessary for both management of Forest lands and for access to Forest lands by the public is extremely challenging.

Most landowners are unwilling to grant access rights in perpetuity on a voluntary basis. The majority of perpetual, full, access rights obtained in the past fifteen years has been obtained through the landownership adjustment program. Some access rights for timber management activities have been obtained on a temporary basis. While this solves an immediate access need, it also often has the effect of decreasing the ability to obtain access rights in perpetuity.

Figure 11. Rights-of-way needed per year.

Years	Rights-of-way
1985 through 1990	3
1991 through 2000	2
2000 forward	2

# Rangeland management

## Existing management direction

### Forest Plan goals

Develop, protect, and manage the rangeland resource (as authorized by the basic laws, Secretary's regulations, Forest Service policy, and the Chief's and Regional Forester's goals and objectives) to maintain it in fair or better condition status with an upward trend (Forest Plan III-8).

Provide for grazing of livestock to maintain dependent existing industry (Forest Plan III-8).

### Forest Plan management direction

Provide forage to sustain local dependent livestock industry as well as wildlife populations agreed to in Statewide Comprehensive Wildlife Management Plans for National Forest System lands (Forest Plan III-53).

Achieve or maintain satisfactory range conditions on all rangelands (Forest Plan III-57).

### Forest Plan amendment 91-002 direction

[In Management Situation 1 areas] On sheep allotments where grizzly-livestock depredation has been authenticated, adjustments will be made for the primary purpose of grizzly bear conservation. The following options are available

- Change the season of use, bedding practices, or grazing area to avoid known problem areas or other habitat important to grizzlies in time and space
- Change the class of livestock from sheep to cattle if the range is suitable for cattle
- Remove all livestock and close the allotment. Vacant sheep allotments will not be restocked with sheep (USDA Forest Service 1991).

## Discussion of activity and condition trends

A number of dramatic changes in commercial livestock grazing activities have occurred on the Forest over the past 70 years and have accelerated in the past 10.

From a high point in the early 1900s, commercial sheep grazing has been in a steady decline on the Forest. The initial decline in sheep numbers was primarily due to adjustments to stocking rates that reflected a more sustained use of the range resource. The decline in sheep animal unit months continued through the 1970s. It continued to decline in subsequent decades, though at a slower rate, reflecting declining demand and increased importation of wool and mutton from overseas. The last 10 years have seen the removal of all but one commercial sheep-grazing permit due to a significant increase in predator populations (grizzly bears and wolves) and concern over the potential for disease transmission from domestic sheep to bighorn sheep.

In contrast to commercial sheep use, the levels of permitted cattle grazing and demand for allotments have changed little for many decades. The influence of cattle grazing on the rangeland resource has lessened considerably. Improved livestock management, consolidation with vacant sheep allotments, where applicable, and construction of off site water sources have all led to improved conditions of both upland and riparian rangeland.

In the past five years, drought has resulted in a dramatic decrease in actual use animal unit months—a trend reflected in Figure 12. However, permitted cattle use animal unit months are not affected by this.

Figure 12. Commercial livestock grazing use since 1986, 1,000 animal unit months (numbers were rounded).

Year	Cattle/horse animal unit months	% Forest Plan	Sheep animal unit months	% Forest Plan	Total animal unit months	% Forest Plan
Forest Plan	78	100	25	100	103	100
1986	55	70	4	17	58	56
1987	59	75	2	10	61	59
1988	56	72	2	11	59	57
1989	58	74	2	11	60	58
1990	64	82	2	11	67	64
1991	58	75	9	8	59	57
1992	49	62	1	5	50	48
1993	56	71	1	7	54	56
1994	54	68	<1	2	54	52
1995	57	72	<1	1	57	55
1996	57	72	1	7	58	56
1997	54	69	2	8	56	54
1998	58	74	1	7	60	58
1999	57	72	1	7	58	56
2000	57	72	1	7	58	56
2001	48	62	1	4	49	48
2002	37	47	<1	2	37	36
2003	36	45	1	2	36	35
2004	45	58	1	2	45	44

Figure 13. Commercial livestock grazing use since 1986.

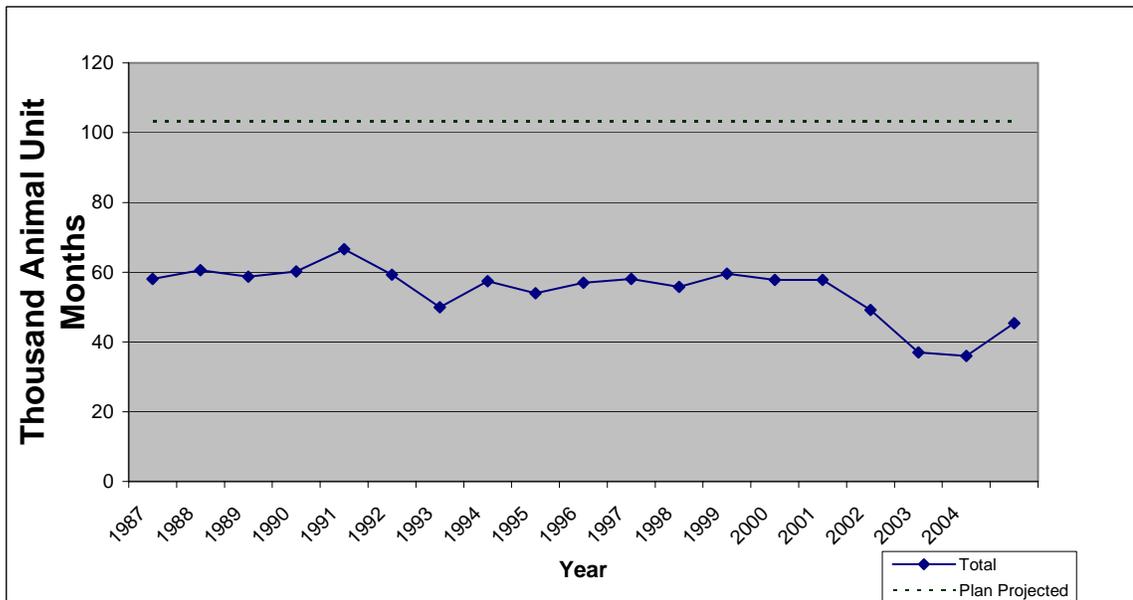
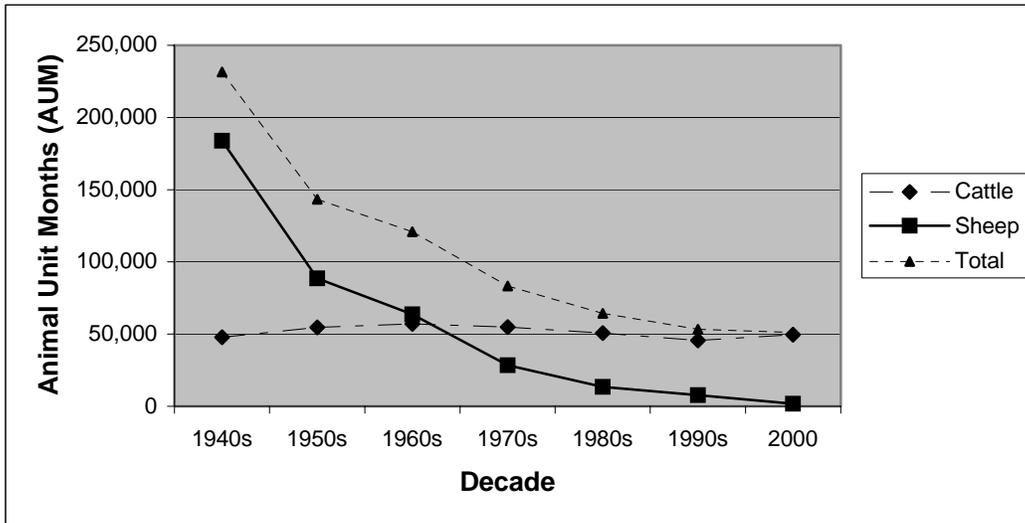


Figure 14. Historic commercial livestock use, by decade.



**Vegetative Condition and Trend**

Figure 15 and Figure 16 reflect the vegetative condition and trend of the suitable acres found within active livestock grazing allotments. Rangelands outside of grazing allotments have been determined to be in similar or better condition due to the lack of livestock related impacts. As a result of range management, rangelands within commercial livestock allotments show the same general trend toward desired conditions and/or a stable vegetative state. There are isolated locations where the vegetation is not moving toward desired conditions or a stable vegetative state because the site is heavily impacted. These impacts occur for a variety of reasons, including:

- Concentrated use by commercial livestock around human-made and natural water sources (i.e., springs, seeps, riparian areas, stock tanks/ponds, etc.), salt grounds, and containment structures (i.e., fence corners, corrals, etc.)
- Concentrated use by recreational livestock near natural water sources, popular campsites, and high country meadows where available grazing is limited
- Concentrated use by wildlife in highly preferred upland winter ranges and riparian areas or winter range that has been reduced due to urban development

Figure 15. Summary of vegetation condition transects.

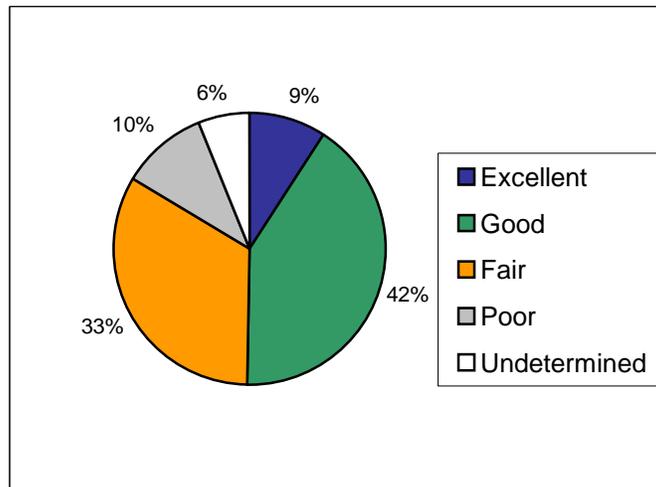
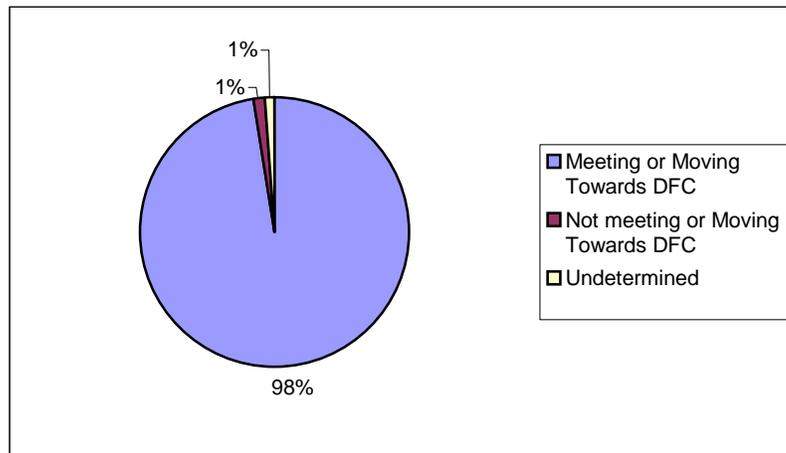


Figure 16. Vegetation condition trend.



## Recreation

### Existing management direction

#### Forest Plan goals

Provide a broad spectrum of dispersed and developed recreation opportunities in accordance with identified needs and use trends (Forest Plan III-7).

Provide adequate trails and trailheads for both motorized and nonmotorized use in both winter and summer seasons (Forest Plan III-7).

#### Forest Plan management direction

Provide appropriate development facilities where the private sector is not meeting the demand (Forest Plan III-33).

Maintain cost-effective developed recreation facilities which complement non-Forest Service developments (Forest Plan III-33).

Construct, reconstruct, and maintain developed sites in accordance with the established Recreation Opportunity Spectrum (ROS) classification for the management area (Forest Plan III-34).

Provide a broad spectrum of dispersed recreation opportunities in accordance with the established Recreation Opportunity Spectrum (ROS) classification for the management area (Forest Plan III-35).

Provide facilities which are accessible to handicapped persons (Forest Plan III-33).

### Discussion of activity and condition trends

A number of factors need to be considered in assessing 1986 to 2004 recreation use trends on the Forest. During this time, the human population increased in adjacent communities. The increase in the average age of the population has changed the types of activities in which people engage. Other factors include changes in technology related to recreational activities, an increase in the number of grizzly bears, and an expansion of lands occupied by grizzly bears.

The 1986 Forest Plan stated that

Off-road vehicle use does not represent a major percentage of total recreation use on the Forest. Because of the rugged terrain, amount of wilderness, and availability of challenging primitive roads, most users of motor bikes and 4x4s limit use to designated routes. Snowmobilers are the major off-road vehicle users on the Forest (II-31).

Today, off-road vehicle use is one of the fastest growing forms of outdoor recreation. During the last fifty years, the number of visitors to the national forests has increased. The percentage of these visitors using off-road vehicles is now a much larger percentage of the total recreation use. Nationally, off-road vehicle users now account for 5% of the total number of visitors. Off-road vehicle use on the Shoshone is following this dramatic national increase. Increases in unmanaged off-road vehicle recreation are leading to increased wildlife disturbance, soil erosion, and sedimentation in streams.

Other recreation activities that have increased include mountain biking, rafting, kayaking, rock climbing, ice climbing, snowmobiling, day hiking, fly fishing, and scenic driving.

The number of developed campsites has remained steady. Some campgrounds have been reconstructed to accommodate a trend of decreasing tent camping and increasing trailer and RV camping.

The number and duration of extended wilderness horse pack trips decreased, while the number of day rides and short, two- to three-day trips into wilderness have increased.

The growing grizzly bear population has affected recreation use trends. On one hand, grizzly bears attract people in viewing areas such as the North Fork Shoshone River. Conversely, increases in developed recreation opportunities are discouraged or precluded by current management direction for areas occupied by grizzly bears. In portions of the Forest, increasing and expanding bear populations have had the effect of displacing some recreational users to other locations on the Forest or to areas off-Forest. The overall effect of an increasing grizzly bear population has been a slower, less dramatic increase in recreation use compared to the increase occurring regionally and nationally.

**Figure 17. Forest wide recreation use 1970 through 1981 (recreation visitor days<sup>6</sup>) and 2003 (site visits).**

Year	Use (1000s)
1970	743
1971	801
1972	854
1973	846
1974	784
1975	913
1976	1,141
1977	1146
1978	1,119
1979	985
1980	872
1981	993
2003	951

In Figure 18, data for 1970 through 1981 were used in development of the 1986 Forest Plan. Data for 2003 are from the National Visitor Use Monitoring survey. Data for both sets (1970 through 1981, and 2003) were gathered in different ways; the 2003 data were modified to be more easily compared to the earlier data. In 2003, 650,898 people visited 791,250 sites. There is still enough difference between the protocols used that it is unclear whether the numbers are comparable. Future monitoring will be based on the NVUM protocol.

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<sup>6</sup> A recreation visit is an entry of one person to a National Forest System site or area of land/water for participating in one or more recreation activities for an unspecified period. A recreation visitor day is twelve visit hours, which may be aggregated continuously, intermittently, or simultaneously by one or more persons.

**Figure 18. Breakdown of total Forest recreation visitor days.<sup>7</sup>**

	<b>1986</b>	<b>2003</b>
Non-wilderness dispersed recreation	52%	55%
Wilderness dispersed recreation	14%	5%
Developed recreation	34%	40%

**Figure 19. Recreation sites provided on the Forest in 1986 and 2004.<sup>8</sup>**

<b>Type of Site</b>	<b>1986</b>	<b>2004</b>
Trailheads	20	28
Campgrounds	33	32
Picnic Grounds	7	11

# Special Uses

## Existing management direction

### Forest Plan goals

#### Forest Plan management activities

Prohibit competitive contest events, group demonstrations, ceremonies, and other similar events [within wilderness] (Forest Plan III-39).

Do not approve any special use applications that can be reasonably met on private or other federal lands unless it is clearly in the public interest (Forest Plan III-82).

## Discussion of activity and condition trends

Special Uses are defined as all uses of National Forest System lands, improvements, and resources (except timber, minerals, and livestock grazing). Special Uses fall into two broad categories: recreation Special Uses include uses such as outfitter-guide authorizations, recreational cabins, and resorts; and non-recreation Special Uses include uses such as roads, ditches, and utility lines.

In the past 15 to 20 years, the number of Special Use authorizations on the Forest has not varied significantly, in spite of increased demand. Funding constraints have not allowed the Forest to complete the required processes. In addition to inquiries for traditional horse-based outfitted uses, inquiries are very high for outfitted activities not currently authorized on the Forest, such as bicycle tours, guided nature tours, and ice climbing. The Forest’s top priority in funding recreation Special Use authorizations is the administration of existing uses, with an emphasis on those uses involving potential risks to human health and safety.

The number of many other recreation-based authorizations has also remained constant for several reasons. New authorizations for recreation residence authorizations have remained at pre-1986 levels because Forest Service policy precludes issuance of new authorizations for these uses. Due to limited capacity for potential expansion and the lack of demonstrated public need for expansion of these privately provided recreation services, the number of authorizations for organization camps (e.g., Boy Scouts camps), skiing, and resorts have largely remained constant.

<sup>7</sup> Data for 1986 are from the Forest Plan FEIS. Data for 2004 are from the National Visitor Use Monitoring survey.

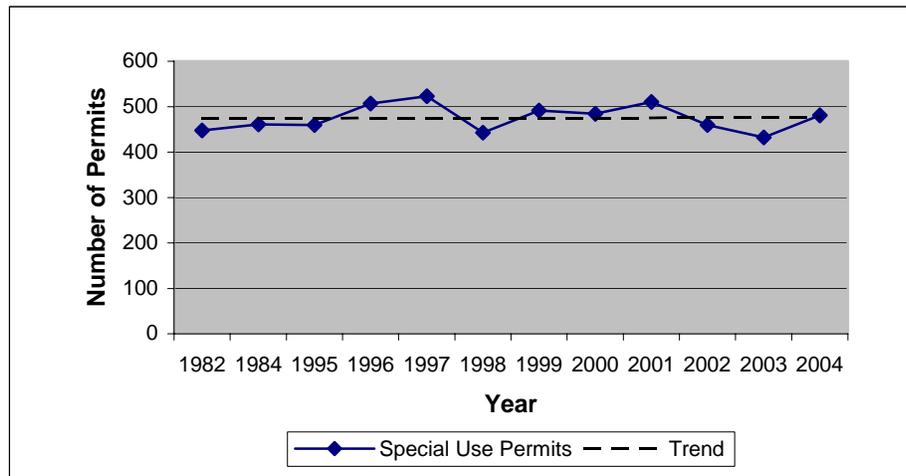
<sup>8</sup> Data for 1986 are from the Forest Plan FEIS. Data for 2004 are from the Shoshone National Forest Recreation Guide.

Numbers of non-recreation uses have increased over the last 15 years. Most of the increases have been in water uses such as pipelines and ditches, and in the number of road use authorizations that provide access to private lands located within the Forest boundary. New requests for these types of uses are authorized if they are found to be consistent with current Forest Service policy, the Forest Plan, and if potential environmental impacts can be mitigated successfully.

*Figure 20. Special Use permit categories by year, 1982 through 2004.*

Special Use type	1982	1984	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Organization camp	3	3	3	3	3	3	3	3	3	3	3	3
Resort	17	18	17	19	19	18	18	18	19	18	18	18
Skiing	3	3	4	4	4	4	4	4	4	4	4	4
Recreation residence	100	100	100	100	100	95	100	100	100	100	100	100
Outfitter/guide	110	118	118	132	135	100	147	134	127	121	91	126
Minerals	--	4	11	19	28	40	24	17	16	18	18	--
Road use authorizations	--	12	34	34	33	38	37	37	35	35	40	40
Research	--	1	--	--	15	17	16	13	19	5	6	8
Utilities/communications	--	67	38	38	37	46	46	48	46	42	47	47
Water use	--	78	79	82	79	74	75	74	93	84	89	90
Miscellaneous	--	65	-	76	70	8	21	35	48	30	16	45
Forest total	448	461	460	507	523	443	491	483	510	460	432	481

*Figure 21. Special Use permits by year, 1982 through 2004.*



# Timber

## Existing management direction

### Forest Plan goals

Manage the timber resources on lands suitable for timber management to provide sawtimber, roundwood, and firewood to meet resource management objectives (Forest Plan III-8).

Provide timber sales of sufficient quantity and quality to attract investment by the timber industry to accomplish desired vegetation management (Forest Plan III-8).

## Forest Plan management direction

Assure that all even-aged stands scheduled to be harvested during the planning period will generally have reached the culmination of mean annual increment of growth (Forest Plan III-63).

The maximum size of openings created by the application of even-aged silviculture will be 40 acres regardless of the forest cover type. Exceptions are:

- Proposals for larger openings are subject to a 60-day public review and are approved by the Regional Forester
- Larger openings are the result of natural catastrophic conditions of fire, insect or disease attack, windstorm
- The area does not meet the definition of created openings (Forest Plan III-63)

Establish a satisfactory stand on cutover areas, emphasizing natural regeneration within five years after final harvest except:

- For permanent openings that serve specific management objectives
- When other resource objectives dictate a different period such as spruce-fir clearcuts where planting must occur within three years after harvest
- When provided for otherwise in specific management prescriptions (Forest Plan III-66)

## Discussion of activity and condition trends

The 1986 Forest Plan set an average annual Allowable Sale Quantity (ASQ) volume of 11.2 million board feet. The Forest Plan set this amount as the maximum allowable harvest of timber from the suitable timber land base of approximately 86,000 acres. The 1986 decision indicated that all of this volume would be sawtimber. The 1986 decision predicted that an additional 1.2 million board feet of products other than logs<sup>9</sup> would be sold annually. This additional volume would not count toward the ASQ.

In the early 1990s, monitoring indicated that timber data and assumptions used in the Forest Plan analysis had overestimated the amount of timber that the Forest could produce. This, combined with the 1988 fires that burned over 9,000 acres of suitable timber land, resulted in the need to amend the Forest Plan. The Forest Plan was amended in August 1994 (USDA Forest Service 1994) with a recalculated ASQ. The amendment changed the annual average volume to 4.5 million board feet. The amended amount included 4.3 million board feet of sawtimber and 0.2 million board feet of products other than logs. The amendment also predicted that an additional 3.0 million board feet of products other than logs would be sold annually. The amendment directed that all salvage volumes offered for sale would count toward ASQ. This decision was made to address events such as the 1988 wildfires.

Data for 1972 through 1975 are available in total and cannot be separated into sawtimber and products other than logs. Based on these data, it is possible to look at some general trends on the Forest by certain periods. Since 1970, the total volume sold (both sawtimber and products other than logs) from the Forest averaged 8.3 million board feet per year. The average annual volume sold prior to the Forest Plan was 9.1 million board feet. From 1986 until the Plan was amended in 1994, the average annual sold was 11.0 million board feet per year. Since 1994, the average annual sold was 4.3 million board feet.

During 1970 to 1986 and 1986 to 1994, the mix between sawtimber volume and products other than logs volume was nearly the same, with sawtimber comprising just over 70% of the total annual volume sold. Since 1994, there has been a shift in the mix of sawtimber and products other than logs, with sawtimber representing 28% of the total volume sold. During this period, the volume of products other than logs sold is comparable to the period from 1970 to 1994.

In comparing these data to the Forest Plan decisions, the volume of products other than logs sold since 1986 has averaged slightly over 3.0 million board feet per year. This amount is very close to the volume predicted in

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<sup>9</sup> Products other than logs includes posts, poles, firewood, etc.

the 1994 Allowable Sale Quantity amendment of 3.0 million board feet, though it is above the 1.2 million board feet predicted in the 1986 Forest Plan decision.

Sawtimber volume sold has fluctuated greatly since 1986, as shown in Figure 22. The period from 1995 to 2004 was greatly influenced by the large volume sold in 2004. Without the 2004 volume, the average would have been 1.2 million board feet.

The large fluctuations in total sawtimber volume are related to the timber program offering salvage sales in response to large catastrophic events such as the 1998 wildfires and the recent insect epidemic.

Other than in the late 1980s, total sawtimber sold has been below the Forest Plan ASQ. As a point of clarification, volume that contributes to ASQ is harvested from suitable timber lands. Not all of the volume sold was from suitable lands. As a result, this discussion does not provide an exact accounting of ASQ harvested, but it does provide adequate information to assess the trends of ASQ harvest over the life of the Forest Plan.

**Figure 22. Sawtimber volume sold, in million board feet.**

<b>Timber period</b>	<b>Average annual total sawtimber volume sold</b>	<b>Forest Plan average annual allowable sale quantity</b>
1986 – 1990	11.2	11.0
1991 – 1994	3.4	11.0
1995 – 2004	3.2	4.5

**Figure 23. Acres harvested in fiscal years 1984 through 2003.**<sup>10</sup>

<b>Fiscal Year</b>	<b>Acres Harvested</b>
1984	0
1985	248
1986	472
1987	272
1988	1,470
1989	548
1990	494
1991	499
1992	2,007
1993	709
1994	553
1995	33
1996	206
1997	51
1998	24
1999	85
2000	47
2001	69
2002	19
2003	323

<sup>10</sup> Data from Eilers 2004.

Figure 24. Volume sold and harvested, by product, in thousand board feet.<sup>11</sup>

Fiscal year	Sawtimber sold	POL sold	TOTAL		Sawtimber harvested	Products other than logs harvested	TOTAL
1970	5,777	427	6,203		11,519	501	12,020
1971	3,735	348	4,083		11,569	388	11,957
1972 <sup>12</sup>	--	--	1,177		--	--	3,678
1973	--	--	3,777		--	--	7,798
1974	--	--	3,335		--	--	6,121
1975	--	--	5,200		--	--	2,852
1976 <sup>13</sup>	26,731	796	27,527		3,996	341	4,337
1977	7,723	1,370	9,093		5,557	998	6,555
1978	9,999	969	10,968		5,108	1,107	6,216
1979	6,784	635	7,419		17,187	351	17,538
1980	10,479	1,404	11,883		7,682	842	8,525
1981	7,911	1,213	9,123		10,653	1,574	12,227
1982	8,466	2,884	11,350		3,625	2,415	6,040
1983	9,107	4,174	13,281		5,366	1,749	7,115
1984	6,978	4,421	11,398		6,490	4,052	10,542
1985	4,720	5,103	9,823		11,575	4,345	15,920
1986	4,743	3,806	8,549		8,799	4,360	13,159
1987	15,410	3,262	18,672		14,639	4,824	19,463
1988	12,054	2,270	14,324		12,351	3,509	15,860
1989	13,620	2,106	15,726		5,982	2,109	8,091
1990	10,516	2,437	12,953		14,709	2,360	17,069
1991	7,104	3,292	10,395		10,055	2,489	12,544
1992	1,327	3,170	4,497		6,926	3,300	10,226
1993	2,730	3,441	6,172		4,222	2,975	7,197
1994	2,254	5,176	7,430		3,965	3,790	7,755
1995	284	3,420	3,705		1,141	3,796	4,936
1996	2,850	3,784	6,634		2,234	3,627	5,861
1997	2,241	2,970	5,211		1,732	3,975	5,707
1998	2,315	3,359	5,674		385	5,230	5,615
1999	1,158	4,250	5,408		1,289	4,092	5,380
2000	400	2,202	2,602		2,020	1,611	3,631
2001	112	2,923	3,035		1,068	2,895	3,962
2002	4	2,466	2,471		630	2,619	3,250
2003	1,410	2,458	3,868		1,044	2,591	3,635
2004	21,373	2,538	23,911		5,762	2,465	8,226

<sup>11</sup> Data from Eilers 2004a. Numbers in this table were rounded up to the next whole number.

<sup>12</sup> Cut and sold data by product are not available for fiscal years 1972 through 1975 (totals only).

<sup>13</sup> Fiscal year 1976 data include the transition quarter.