Arapaho and Roosevelt National Forests
And
Pawnee National Grassland

Monitoring and Evaluation Report of the

1997 Revision of the Land and Resource Management Plan

for

Fiscal Year 2003

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Forest Certification

The 1997 Revision of the Land and Resource Management Plan (Forest Plan) has provided goals and objectives to direct the future of resource management of the Forests and Grassland for the next ten to fifteen years. The Forests and Grassland have completed the sixth season of implementing plan goals and objectives. Lessons learned from a these six years of monitoring and evaluation point how to better conduct interdisciplinary resource management, monitoring and evaluation of plan implementation by Forest and Grassland personnel. Monitoring and evaluation carried out by the Monitoring and Evaluation Team with findings reviewed and concurred with by the Forest Leadership Team has resulted in no significant problems or reasons for change to the Revised Forest Management Plan at this time. Work has been initiated on amendments dealing with management indicator species and incorporating the Williams Fork area into the Arapaho and Roosevelt National Forest and Pawnee National Grassland (ARP) Revised Forest Plan from the Routt National Forest Revised Forest Plan.

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Introduction

Location and History:
The Arapaho and Roosevelt National Forests (ARNF) include 1.3 million acres of public land (not including the Williams Fork Area) in the Rocky Mountains and foothills of north central Colorado. Boundaries extend north to the Wyoming border and south of Mt. Evans and Interstate-70. These two National Forests include lands on both sides of the Continental Divide. Topography on the forests varies from rolling hills to snow covered mountain peaks over 14,000' in elevation.

President Theodore Roosevelt established the Arapaho National Forest on July 1, 1908. It is named after the Native American tribe that occupied the region for summer hunting. Roosevelt National Forest originally began as a part of Medicine Bow Forest Reserve, created in 1897. In 1910 this forest was renamed Colorado National Forest. Finally, in 1932 it was renamed by President Herbert Hoover to honor President Theodore Roosevelt, the person who was the most responsible for its creation.

The Pawnee National Grassland (PNG) includes 193,000 acres of primarily short-grass prairie in two units located approximately 30 miles east of Fort Collins, Colorado. Elevations range from 4,900' on the prairie to 5,500' at the summit of the Pawnee Buttes.

The Pawnee National Grassland was transferred to the USDA Forest Service from the USDA Soil Conservation Service (SCS) in 1954. The SCS acquired this prairie during the dust bowl days of the 1930's and was charged with its rehabilitation. It was designated a National Grassland in 1960.

The Arapaho and Roosevelt National Forests and Pawnee National Grassland (ARP) are within a one-hour drive of the heavily populated Denver metropolitan area and the other heavily populated areas along the northern Front Range (Boulder, Ft. Collins, Longmont, Loveland and Greeley) and, therefore, are considered to be one of the fourteen Urban National Forests nation-wide. The landownership pattern of the ARP creates special challenges, with approximately 750,000 acres of small private parcels intermixed with federal lands.

Six Years of Forest Plan Implementation:
The ARP is making progress in accomplishing Forest Plan objectives. Actual levels of accomplishment vary by programs due mainly to funding levels. When program budgets were low during these past six years, staffing was reduced and projects were not implemented. The Forest Plan was optimistic is its funding predictions and, therefore, predictions for program objectives (Chapter 1, Forest Plan) was also overly optimistic. Some programs, though under-funded, have benefited from other well-funded projects. For example, the Wildlife Program is typically under-funded and wildlife habitat improvement acreage would have only increased in small increments. Yet, due to the increased funding to treat hazardous fuels, we are seeing the acreage of wildlife habitat improvement grow on an increasingly upward trend.

There are many highlights since the 1997 Revised Forest Plan. Developed recreation has been invigorated through the Capital Investment Program. Many of the ARP's campgrounds have been reconstructed to bring them up to the standard our camping visitors expect. The campground concessionaire contract is working well and management of our campgrounds is running smoothly. The

Recreation Fee Demonstration program is providing more funding for our more heavily impacted recreation areas such as Mt. Evans and the Arapaho National Recreation Area. Through the fees our visitors pay to use these areas, we are able to maintain these facilities to a higher standard and expand interpretation and education programs. A new visitor center is being built off the Mt. Evans Road that will provide the public more information about the surrounding fragile environment.

Through increased public and congressional awareness, the ARP is receiving increasing funding to treat the buildup of dead trees and dense, overgrown forests. Through this hazardous fuels reduction we will better protect against the devastation of wildfires. Through "Good Neighbor" programs, our ranger district personnel are actively working with local communities, county and state governments to plan potential hazardous fuels treatment areas. In Fiscal Year 2003 (Oct 1, 2002 - September 30, 2003) the ARP treated over 4900 acres of hazardous fuels. By the end of Fiscal Year 2004 (FY 2004) we are expecting to complete planning to treat an additional 20,000 acres.

The timber program suffered from a soft timber market. Though over 9000 acres of timber was offered for sale, none of these sold. In FY 2003, over 5000 acres of timber was harvested from the Forests from previously sold sales.

The ARP is pockmarked with abandoned mines. Many of these old mines need to be rehabilitated, closures need to be improved, and sediments need to be contained. With the hiring of an expert on abandoned mines we are moving forward on this faster than we have in the past.

Many accomplishments in land ownership adjustments were made during the six-year reporting period. A major multi-party exchange involving Winter Park, the City of Fort Collins, the State of Colorado, and four private parties was completed in 2001. Approximately, 13.5 acres of federal land located at the base of Winter Park Ski Area valued at $3,820,000 were exchanged for 1,773acres of non-federal land valued at $4,289,500. In 2002, initial funding was received for the first phase of the Beaver Brook Watershed Acquisition on the Clear Creek Ranger District. The Beaver Brook Watershed is a 2,700-acre parcel that serves as an important wildlife refuge and as one of the last remaining intact low-elevation, forested ecosystems along the Front Range of Colorado.

The Pawnee National Grassland (PNG) has utilized prescribed fire to improve mountain plover habitat. The Grassland has been diligently working with its range allotment permittees to improve range condition through better cattle distribution and improved grazing systems. Seventy percent of all PNG allotments were administered and monitored. Over 27,000 acres of rangeland received rangeland improvements to improve their ecological condition. The PNG is interspersed with numerous roads and "two-tracks". The district staff has been doing extensive travel management planning which has led to improving highly used roads and closing little used roads to improve wildlife and range habitat. The PNG also treated 30 acres of noxious weeds.

Noxious weeds are a problem in some areas on the ARP. To move proactively ahead in reducing this problem a Forests- and Grassland-wide noxious weed management plan was developed. Over 465 acres of weeds were treated across the ARP. This was nearly double what had been planned to accomplish.

Not enough can be said about the hundreds of volunteers on the ARP. By hiking in the Wildernesses, raft-patrolling on the Poudre River, working on the Continental Divide trail, maintaining the 100s of

miles of summer and winter trails, counting birds, working in our offices, and ad infinitum; these volunteers provide a tremendous service to the public and help provide services which would have been eliminated due to reduced Forests and Grassland budgets. Our volunteers and partners provided over 91,000 hours of volunteer work on a yearly basis.

The Arapaho and Roosevelt National Forests and Pawnee National Grassland personnel are proud of the work they have done even through lean budget years. However, we all recognize that we need to do better in the areas of travel management and field presence/law enforcement.

The Forest Plan recognizes the importance of managing our road system and the Roads Analysis Process (national Forest Service direction) requires that we maintain a minimum road system that meets the public needs while considering ecologic, economic and social attributes of the road system. Increasing motorized and mechanized recreation on the ARP and minimal transportation planning and implementation dollars have increased the challenge of meeting our travel management needs We recognize that we have much work to do to meet Forest Plan expectations. In 2003 the ARP completed a Forests- and Grassland-wide roads analysis of all its two-wheel-drive roads (444 miles). This analysis provides information that will help the ARP to more efficiently and effectively manage the transportation system within existing and anticipated funding levels.

Lower recreation management and law enforcement funding have decreased Forest Service employee presence in the Forests and on the Grassland. This puts an undo burden on our few law enforcement officers who are required to cover 700,000 acres per officer and respond to over 850 incidents per year. The public is being underserved because the ARP personnel are not “in-the-woods” to answer visitors’ questions or to protect public land resources through enforcement of regulations.

Of particular note in FY 2003 is Left Hand Canyon on the Boulder Ranger District. This canyon has had uncontrolled motorized use causing major erosion and loss of vegetation. The district applied for and received a $250,000 grant through the State of Colorado Off Highway Vehicle Program to address these problems. The district has installed $40,000 of post and cable to control use off roads and trails. Additional law enforcement has been hired. New plate steel signage to notify users of opportunities and regulations has been installed. Volunteer coordination by the District for various work-day projects has accomplished over 1,000 hours of volunteer work from OHV and trail rider groups.

The remainder of this report describes Forest Plan monitoring and evaluation. In these sections there is more in-depth information about programs and resources on the Arapaho and Roosevelt National Forests and Pawnee National Grassland.

Monitoring and Evaluation

The 1997 Revised Forest Plan describes a monitoring program to evaluate forest plan implementation, which is programmatic and designed to evaluate the conditions on the Forests and Grassland. Monitoring and evaluation are separate, sequential activities required by the National Forest Management Act (NFMA) regulations to determine how well objectives have been met and how closely management standards and guidelines have been applied. Monitoring usually includes data collection and information gathering. Evaluation is the analysis of the data and information and the results of which are used to determine the need for changes to the Revised Forest Plan or how it is implemented.

To guide this monitoring and evaluation process, Chapter 4 of the Revised Forest Plan lists many monitoring questions presented in two tables. Table 4.1 lists the questions, which were developed to address the legally required monitoring per NFMA. The Revised Forest Plan management emphasis goals and objectives are addressed in the questions found in Table 4.2.

Table 4.1. Minimum Legally Required Monitoring Activities.

Action, Effect or Resource to be Measured	Frequency of Measurements	Precision and Reliability*	M & E Report**
Lands are adequately restocked. 36 CFR 219.12(k)5(i)	Mix of 1st, 3rd & 5th years per FSM 2472.4	A	Annual
Lands not suited for timber production. 36 CFR 219.12(k)5(ii)	Year 10	A	Year 10
Harvest unit size. 36 CFR 219.12(k)5(iii)	Years 5 & 10	B	Years 5 & 10
Control of destructive insects and diseases. 36 CFR 219.12(k)5(iv)	Annual	B	Annual
Population trends of management indicator species in relationship to habitat changes. 36 CFR 219.19(a)(6)	Years 5 & 10	B	Years 5 & 10
Effects of off-road vehicles. 36 CFR 219.21	Annual Review, Analysis years 5 & 10	B	Years 5 & 10

Effects to lands and communities adjacent to or near the National Forest and effects to the Forest from lands managed by government entities. 36 CFR 219.7(f)	Years 5 & 10	B	Years 5 & 10
Comparison of projected & actual outputs and services. 36 CFR 219.12(k)1	Annual	A	Annual
Prescriptions and effects. 36 CFR 219.12(k)2	Years 5 & 10	B	Years 5 & 10
Comparison of estimated and actual costs. 36 CFR 219.12(k)3	Annual	A	Years 5 & 10
Effects of management practices. 36 CFR 219.11(d)	Years 5 & 10	B	Years 5 & 10

*Monitoring methods used are divided into two categories, A and B based on their relative precision and reliability:

- A – Methods are generally well accepted for modeling or measuring the resource. Methods used produce repeatable results and are often statistically valid. Reliability, precision, and accuracy are very good. The cost of conducting these measurements is higher than other methods. Methods are often quantitative.
- B – Methods or measurement tools are based on a variety of techniques. Tools include: project records, communications, on site ocular estimates and less formal measurements such as pace transects, informal visitor surveys, aerial photo interpretation, and other similar types of assessments. Reliability, accuracy, and precision are good but usually less than that of A. Methods may be more qualitative in nature bu6t they still provide valuable information on resource conditions.

**The frequency of measurement and reporting are triggered by regulation as well as anticipated intervals at which gathered data will provide meaningful information.

Below are the responses to these monitoring activities. These responses were initially developed for the 5-year Forest Plan monitoring report. For this sixth year report, the graphs have been updated and totals have been recalculated. However, the responses have remained essentially the same in these two monitoring reports. The long number with the letters "CFR" is the citation to the Code of Federal Regulations which translates Congressional Law (in this case, NFMA) into working regulations which the Forest Service can apply to management of its lands.

Lands Are Adequately Restocked - 36 CFR 219.12(k)(5)(i)

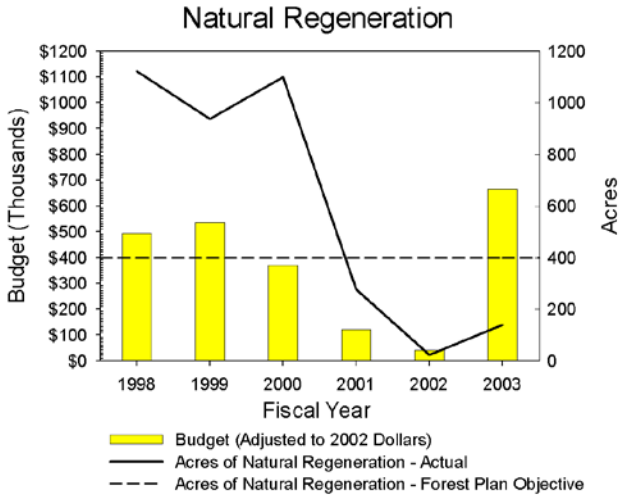
This CFR requires a determination of compliance with the standard that lands are adequately restocked as specified in the Forest Plan. Forest Plan Standard 58, Page 19, says "When trees are harvested on suitable and available lands, the cutting units must be in such a way that there is assurance that the technology and knowledge exists to adequately restock these areas within five years of final harvest. The minimum restocking levels are defined in tables 1.9 and 1.10". Forest Plan Standard 59, Page 20, describes the initiation of the five-year determination. Forest Plan Guideline 74, Page 25, indicates, "In

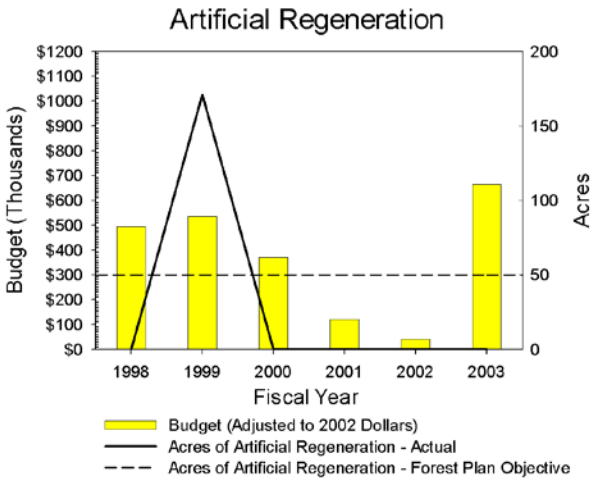
most circumstances, rely on or make primary use of those silviculture systems which ensure regeneration of forest stands through natural seeding and suckering". In addition, Forest Plan Guideline 75, Page 25, says to "Use artificial regeneration methods when it is unreliable to count on the natural sequence of events and/or environmental conditions to regenerate the forests within five years".

Monitoring for compliance is accomplished through surveys the first, third, and fifth years following reforestation treatment. Where natural regeneration is prescribed the first year survey can be a walk-through survey to determine that the timber harvest and/or site preparation activities have produced site conditions conducive to adequate stocking within five years following final harvest. Third year and any subsequent surveys must be fixed plots to determine stocking levels and distribution.

Since inception of the 1997 Forest Plan the silviculture objective has been to achieve natural regeneration success on harvested acres. Surveys have been conducted as required to assure restocking on suitable and available lands receiving a final harvest treatment. For the period of FY 1998 through FY 2003, 4,405 acres of natural regeneration have been certified as satisfactorily restocked and 175 acres have been planted.

Natural regeneration surveys are done the first, third and fifth years following final timber harvest. The reporting that regeneration has met the Forest Plan standard is done upon completion of either the third or fifth year survey if sufficient regeneration has occurred. Therefore, these regeneration graphs are reflecting timber harvest in these prior years. The decrease in 2001 and 2002 reflect lesser timber sale activities as early as 1996. The artificial regeneration graph shows that planting occurred only one year of the six-year period.





Lands Not Suited For Timber Production - 36 CFR 219.12(k)(5)(ii)

This CFR requires that lands identified as not suited for timber production are examined at least every ten years to determine if they have become suited; and that, if determined suited, such lands are returned to timber production. Since it has been only six years since suitability for timber production was determined and since there has been no indication that suitability was inappropriately determined, this examination will be deferred until a future plan revision or review or at year 10 as required.

Harvest Unit Size - 36 CFR 219.12(k)(5)(iii)

This CFR requires the maximum size limits for harvest areas are evaluated to determine whether such size limits should be continued. Forest Plan Standard 63, page 22, establishes 40 acres is the maximum allowable opening acreage for all forest types. This standard was established per 36 CFR 219.27(d)(2). There was no ecological basis for this size limitation identified in the Forest Plan or its Environmental Impact Statement (EIS). However, to date, the size of most openings has been less than the allowable maximum. One exception has been made in the Environmental Assessment (EA) and Decision Notice for the Roach Project Area, which allowed for openings greater than 40 acres (up to 328 acres) to mimic historic fire patterns and control of dwarf mistletoe in lodgepole pine. The Regional Forester granted this exception after appropriate public notice and review.

Control Of Destructive Insects And Diseases - 36 CFR 219.12(k)(5)(iv)

This CFR requires a determination that destructive insect and disease organisms do not increase to potentially damaging levels following management activities. The most damaging insect and disease organisms currently occurring on the Forest are mountain pine beetle, *Dendroctonus ponderosa,* and dwarf mistletoe, *Arceuthobium spp.* Mountain pine beetle has reached epidemic proportions near Lake Granby in Grand County on the Sulphur Ranger District. Dwarf mistletoe is wide spread throughout lodgepole pine and ponderosa pine stands on the Forest. However, the occurrence of both of these organisms occurs naturally in forested area and has not been shown to be a result of management activities.

In 1998 we experienced an increase in mountain pine beetle activity following the Jamestown prescribed burn. Survey indicated about a 2.5 times increase in mountain pine beetle attacks from 1997 to 1998 in the burn area. This was not abnormal during the mountain pine beetle population increase we were experiencing in areas along the Front Range. Regardless of the cause of the increase we successfully implemented insect suppression treatments in the area to reduce additional mortality.

In 2002 the Forest did experience a small isolated outbreak of *Ipps* beetle on a hazardous fuels reduction project in the Stringtown Gulch area of the Canyon Lakes District. It appeared that the cutting and decking of ponderosa pine on the project led to a small buildup of the beetles which subsequently

infested and killed 10-15 nearby live trees. Further monitoring in 2003 did not show any increased activity and it is expected this occurrence is an isolated short-term event.

Population Trends Of Management Indicator Species In Relationship To Habitat Changes - 36 CFR 219.19(a)(6)

This CFR requires that population trends of the management indicator species (MIS) will be monitored and relationships to habitat changes will be determined. In addition this monitoring will be done in cooperation with State fish and wildlife agencies and others, to the extent possible.

Evaluating MIS to ascertain whether the selected species are most appropriate in implementing the Forest Plan is important. Recent appeals and litigation in the Forest Service Rocky Mountian Region, and others, also suggest that a review is needed to assess adequacy, even though this Forest Plan was recently revised. Ability to effectively monitor population trends is one key question to answer.

Assessments to-date of baseline conditions, population levels and trends indicate that while populations are being monitored, trends are not yet apparent for many species. Accordingly, the ability to compare habitat conditions with reliable populations trends is lacking for many MIS both today and likely will still be lacking at year 10 of the Forest Plan. It appears that for many MIS, appropriate monitoring protocols are not available making these MIS of limited use in monitoring achievement of Forest Plan goals and objectives. This is one reason for revising the current MIS list. The effort to analyze, evaluate and probably amend the Forest Plan for MIS is being drafted and should be completed in the next several months.

The question of whether population trends can be monitored effectively and efficiently using established or accepted survey protocols at geographic and temporal scales that are commensurate with management objectives have been researched. The following is a summary of findings for 27 terrestrial and 5 aquatic MIS.

Summary Status Of Population Levels And Trends For The 27 Terrestrial MIS

Birds (15)

1) ferruginous hawk – 1 pair/3200 acres with apparent long-term decline on PNG
   – increasing breeding bird trends at larger geographic scales
   - increasing winter bird trends at larger geographic scales
2) peregrine falcon – no nesting on PNG; 5 nests on or near ARNF
   - significant upward population trends at larger geographic scales
3) bald eagle – no nesting pairs on PNG; 2 nesting pairs on or near ARNF
   - population trends not applicable to ARP but strongly positive at continental level
4) burrowing owl – 50 adults on PNG; average of 1 adult per 19 acres of prairie dog town
   - population trends not available for PNG or larger scales

5) mountain plover – estimated 2660 birds in 1992; recent populations too low to calculate a density on PNG
   - estimated 8,000-10,000 birds continental population in 1995
   - dramatic drop in population trend since 1995 on PNG
   - counts at larger geographic scales unable to discern trends
6) lark bunting – populations vary greatly due to semi-nomadic nature, a result of unpredictable climate of Great Plains
   - densities in Colorado (CO) range from 1 pair/5 acres to 1 pair/143 acres
   - population trends not discernable on PNG, but downward at rate of 1-3% per year at larger scales
7) brown thrasher – no population level or trend data is available for PNG or other geographic scales
8) flammulated owl – population densities and trends are not available for ARNF or any larger geographic regions
   - mean annual densities were determined at Manitou Experimental Forest during a 19 year study to south of ARNF at 1 breeding pair/ 278 acres and 1 unpaired male/357 acres
   - no trends for ARNF or larger geographic scales due to lack of historic data
9) hairy woodpecker – population density was 1 bird/36 acres in Indian Peaks Wilderness Area
   - winter counts at Evergreen/Idaho Springs area indicates stable populations but breeding trends are not apparent on ARNF
   - breeding surveys show upward trend at continental level
10) three-toed woodpecker – reaches highest densities in recently burned forests
   - ARNF data from unburned, old growth spruce-fir in Indian Peaks Wilderness Area indicate 1 bird/250 acres
   - no discernable trends for ARNF because counts are too low
   - no significant trends for larger geographic areas
11) pygmy nuthatch – baseline density is estimated at 1 pair/8 acres
   - trends not discernable at ARNF or larger geographic scales
12) golden-crowned kinglet – the only available data for ARNF shows 1 pair/19 acres compared to much higher densities elsewhere in the species' range
   - no trends are discernable for ARNF
   - breeding trends and winter trends are not available at larger geographic scales (not after 1979 and 1988, respectively)
13) mountain bluebird – population data are uncommon for this species
   - no trend data is available for ARNF
   - breeding trends at continental level is slightly increasing
   - winter trends are too variable to exhibit a trend
14) warbling vireo – population densities vary widely in CO (1 vireo territory/1.3acre to 33 acres) and across the species range (1 pair/1 acre to 21 acres)
   - a population trend is not apparent for ARNF
   - a slight increasing breeding trend is apparent at the continental scale
15) Wilson's warbler – population densities vary widely in CO (1 breeding territory/ ¼ acre to 100 acres) and across the species range range (1 male/ ½ acre to 11 acres)
   - population trends not apparent for ARNF
   - a slight downward breeding trend but no discernable winter trend at the continental scale

Mammals (9)

16) elk – population data from CDOW (Colorado Division of Wildlife) are available and most reliable for this MIS
- population estimates and trends can be compared for ARNF/PNG, CO and larger geographic scales
- trend is up on ARNF from 15,300 to 20,100 between 1990 and 2000
- trend is up for CO from 183,500 to 263,300 during same period

17) mule deer - population data from CDOW are available and most reliable for this MIS
- population estimates and trends can be compared for ARNF/PNG, CO and larger geographic scales
- trend is down on ARNF (45,900 to 41,300) and up on PNG (3,800 to 6,700) between 1990 and 2000
- trend is down for CO from 600,600 to 549,000 for same period

18) bighorn sheep – population estimates in CO are available since about 1895 and estimates are available for many mountain ranges in CO
- in CO the trend from 1970 to 2001 is upward, and populations are estimated to have increased by 2000 animals from 1990-2000
- for the 7 CDOW management units within ARNF, populations have varied but increased since about 1970 and are recently stable (1999-2001)

19) black bear – reliable estimates of population are not available, but 50 years of hunter harvest are available for CO
– locally abundant in many parts of CO
- population and trends have not been estimated for ARNF but possibly could be approximated
- estimated populations (ranges) are relatively similar between 1988 and 1996 for CO

20) river otter - considered extirpated in CO, reintroduction efforts began in 1976
– now occur in several drainages on ARNF including Colorado River, Cache la Poudre and Laramie River areas, but population data are lacking
- population estimates are generally lacking in CO due to lack of satisfactory field methods

21) wolverine – occurrence is uncertain, although ARNF (north and west of RMNP) is one of few areas in CO believed to be occupied
- known to occur in NW portions of North America

22) lynx – almost extirpated, reintroduction efforts began in 1999 and reproduction was confirmed (2 litters) in May 2003 in SW CO
- transplanted lynx have moved to and used portions of ARNF where two died (one on I-70 by vehicle, and one near Guanella pass apparently by bobcat)
- no population estimates or trends are available for ARNF
- currently at least 63 of 129 transplanted lynx in CO are alive

23) black-tailed prairie dog – populations occur on PNG
- number and size of prairie dog towns best indicates population levels
- acres of towns have varied from 311 to 1674 acres (1988-2002), with reductions primarily caused by plague
- since 1994 annual increases have occurred, except for one year

24) Townsend's big-eared bat – little to no population data are available in CO
- while not found in great numbers, is the most frequently encountered bat species in surveys of mines
- population trends in ARNF and CO are not discernable

Amphibians (3)

25) boreal toad – although rare, is the only amphibian with enough population data to establish trends on ARNF
- currently 10 breeding sites on ARNF and about 48 more scattered throughout CO
- breeding populations are low and trends have been declining in CO and apparently on ARNF

26) northern leopard frog – population data are lacking on ARNF and PNG
- likely extirpated form ARNF but continues to exist on PNG
- common in many parts of CO, but local declines have occurred especially at higher elevations
- at continental scale still generally common with declines in a few areas

27) wood frog – population data are lacking in CO
- remains abundant in Chambers Lake and Laramie River areas on ARNF, and several populations exist near ARNF in RMNP
- trend is not known on ARNF but in CO appears to continue to occupy their historical distribution

Fish (5)

28) greenback cutthroat trout -base-line habitat and population data has been collected for all known greenback cutthroat populations.
-trend is considered stable on ARNF and in Colorado but effects of current drought is unknown

29) Colorado River Cutthroat trout - base-line habitat and population data has been collected for all known Colorado River cutthroat populations.
-trend is considered stable on ARNF and in Colorado but effects of current drought is unknown, whirling disease continues to be a threat.

30) brook trout-base-line population data has not been collected on the ARNF.
-Population trends on the ARNF are considered stable with the recognition that the spread of whirling disease continues to be a threat.

31) brown trout-base-line population data has not been collected on the ARNF.
-Population trends on the ARNF are considered stable with the recognition that the spread of whirling disease continues to be a threat.

32) rainbow trout-base-line population data has not been collected on the ARNF.
-Population trends on the ARNF are considered stable with the recognition that the spread of whirling disease is a threat to this species.

33) plains topminnow - base-line population data has been collected on the PNG.
-Population trends on the PNG are considered stable, however, short-term impacts from the drought are more pronounced on the PNG versus ARNF.

34) plains killifish - base-line population data has been collected on the PNG.
-Population trends on the PNG are considered stable, however, short-term impacts from the drought are more pronounced on the PNG versus ARNF.

Updates to ARP basic resource inventories and databases are in progress (vegetation type and structure; roads/trails and use; present amounts and locations). These are needed to assess existing wildlife habitat conditions and changes since 1997. Once complete, this monitoring question of comparisons of MIS population trends with habitat conditions will be possible.

It should be noted that these basic data are also needed to adequately manage and monitor almost all resources within the ARP. Assuring reliable data and updates is a fundamental requirement for Forest Plan implementation. Currently, resource condition data updates are not adequate to ascertain whether expected Forest Plan outputs and effects are on track.

> Recommendation: Updating of basic resource databases should be a priority in the next few years to meet Forest Plan commitments by year 10 of Forest Plan implementation.

Effects Of Off-Road Vehicles - 36 CFR 219.21(g)

This CFR requires evaluation of the potential effects of vehicle use off roads to protect land and other resources, promote public safety, and minimize conflicts with other uses of National Forest System lands.

The unauthorized use of Off-Highway Vehicles (OHVs) (a.k.a, Off-Road Vehicles) within the ARP appears to be increasing. This increase is driven by the large population living within one hour of many parts of the Arapaho and Roosevelt National Forests and Pawnee National Grassland and this increase is also driven by the increase in the technological capabilities of OHVs.

The Forest Plan contains appropriate guidance to address this problem. Therefore, the solution to this increasing unauthorized use does not mean the Forest Plan needs to be changed. What is needed is first a social change relative to use of National Forest System lands by the public. The National Forests have long been viewed as the Nation's playground where most activities are permissible. However, in National Forest lands adjacent to large urban areas, this type of use may no longer be possible. The second need is increased funding. Unlike the need to reduce hazardous fuels, where catastrophic wildfires each year provide graphic examples of the need for hazardous fuels treatments, the adverse effects from unauthorized OHV use are more insidious. The adverse effects from this unauthorized OHV use is immeasurable on a larger scale over a time period of one, five, or even ten years. Therefore, the social and political need to increase funding to address this problem is slow to develop. So the ARP has limited funding to deal with solutions such as increasing field presence of Forest Service personnel, completing inventories of all classified and unclassified roads and trails for large-scale transportation planning, and completing signing throughout the ARP to assist visitors comply with travel regulations.

There have been many successes in OHV and other motorized recreation management. On the Pawnee National Grassland, we have been aggressively planning our grassland transportation system and have closed or obliterated roads that were no longer needed. Many of the ranger districts on the Arapaho and Roosevelt National Forests have designated camping areas, improved signing, and installed buck and rail fences to direct the motorized recreation visitor. Many volunteer projects with jeep and ATV clubs have improved safety and rehabilitated degraded resources. Areas such as Left Hand Canyon near Boulder and Green Ridge Trail near the Poudre Canyon are examples.

There are two areas that have been designated and managed for off-highway vehicles (OHVs), the Main, on the Pawnee National Grassland and the Stillwater OHV area on the Sulphur Ranger District. Through the roads analysis process the need for additional areas will be evaluated.

Below, are some of the more visible resource effects of OHVs and motorized recreation use.

WILDLIFE:
There appears to be more off-road use or use of unclassified roads (identified as "ways" in the Forest Plan, basically, user-created roads) than estimated in the Forest Plan. Accordingly, this may be resulting in higher amounts of human-disturbed wildlife habitat than predicted in the Forest Plan. Closing of certain Forest Service roads and "ways" that have established use is at times unsuccessful. Gaining public support for closing travelways is seldom successful, and some public reaction to proposals has at times been potentially violent. An average of 76% of the expected Forest Plan objective of 44 miles of closures per year (Forest Plan, p. 4) is being realized that improve habitat effectiveness.

> Emerging issue: Due to lack of Forest Service field presence off-road vehicle use is increasing and apparently unconstrained in many sensitive areas on the ARP.

WATERSHED AND FISHERIES:
Roads and trails continue to be primary chronic sources of suspended sediment that degrades water quality. Additional sediment from unclassified roads and unauthorized off-road vehicle use contributes to hillslope erosion and sedimentation. Areas of particular concern are those areas such as the Left Hand Canyon area where concentrated use has denuded much of the area of vegetation. Watershed improvement projects have been used to address effects of off-highway vehicle use in specific areas. A few examples are closure and rehabilitation of unauthorized vehicle trails along the Laramie River on

the Canyon Lakes District and fencing of wetlands to prevent vehicle access on the Boulder and Clear Creek Districts. Improvements in existing road conditions and reduction in road density in some project areas have been realized, although below Forest Plan levels. This provides for incremental improvements in water quality and aquatic habitat. Developed OHV trail systems, such as the Stillwater OHV, area provide a template for providing a desired user experience while maintaining acceptable resource conditions.

RECREATION:
National prohibitions for "Use of Vehicles Off Roads" (36 CFR 261.13) prohibit any vehicle from traveling off National Forest roads:
(g) "…in a manner that endangers, or is likely to endanger, any person or property."
(h) "In a manner, which damages or unreasonably disturbs the land, wildlife, or vegetative resources."

Forest Closure Order No. 10-00-03 (signed 5-27-98 by Forest Supervisor, Peter Clark) prohibits "Using or possessing a motorized vehicle off numbered Forest Development roads or designated travel routes (36CFR 261.56)" and "Using a motorized vehicle on a closed Forest Development Road (36 CFR 261.54 (a)". The order also lists by Ranger District, specific roads and trails closed to motorized vehicle travel, year-round and seasonally.

Districts are in various stages of implementing the above closure order, as well as planning for any needed additional closures and opportunities for motorized travel. This is an ongoing process.

Much progress has been made to direct dispersed motorized use on the ARP. Toilets have been installed to address human waste issues. Restrictions were established and enforced and buck-and-rail fences were installed to direct motorized use and prevent driving off roads.

HERITAGE RESOURCES:
Off-road vehicles present a major problem for cultural resource sites. The creation of social off-road trails and roads are not subject to planning or cultural resource inventories before they are utilized and have the potential to adversely affect prehistoric and historic cultural resources. These detrimental effects are generally not reversible and are found only after they have occurred.

Effects To Lands And Communities Adjacent To Or Near The National Forest And Effects To The Forest From Lands Managed By Government Entities - 36 CFR 219.7(f)

This CFR requires that the effects of National Forest and Grassland management be considered as it affects resources and communities adjacent to or near the ARP.

The most obvious effects to communities occur during wildfire outbreaks. Over the past six years the ARP has been in drought conditions. These conditions have led to numerous wildfires, which unfortunately consumed not only publicly owned resources but also private structures and property. To deal with this the Forest Service has launched an effort to treat the hazardous fuels, which have built up over years of fire suppression and reduced vegetation management activities, which could have reduced

the density of trees and amounts of fuel build-up. The Front Range Fuels Treatment Partnership has been in effect since 2002 and is an active partnership of public, state, local agencies and private landowners. Budgets have been increasing on the ARP to deal with these hazardous fuels, especially near the intermix lands of public/private ownership. By the end of fiscal year 2004 it is expected that planning will be completed for reducing fuels on 20,000 acres.

Insect outbreaks such as those around Lake Granby are changing the look of the forested lands from green live trees to orange dead trees. Many private homes are located in or near these mountain pine beetle infested areas. The ARP is involved in an environmental analysis including these homeowners and other interested publics and agencies to determine the best method to treat this infestation.

Recreation is the other obvious large impact on communities near or adjacent to the National Forests and Grassland. Communities reap many benefits, both economically and socially, from visitors to the ARP. However, there are also impacts to these communities when excessive or inappropriate visitor use affects these communities quality of life (crowding, drinking water quality). The ARP has been working with these communities and private landowners to minimize impacts and maximize economic benefits.

Comparison Of Projected And Actual Outputs – 36 CFR 219.12(k)1 and Comparison Of Estimated And Actual Costs – 36 CFR 219.12(k)3

These CFRs require a quantitative estimate of performance comparing outputs and services with those projected by the Forest Plan and a documentation of the costs associated with carrying out management prescriptions as compared to the costs estimated in the Forest Plan.

Graphs addressing this question are included in the discussions in the section of this report titled, Table 4.2 Forest Plan Monitoring Questions for Priority Management Emphasis and Stakeholder/Public Involvement. These graphs compare the program (e.g., hazardous fuels treatments) budget with its accomplishment for the 6-year period of 1998-2003. In addition, these graphs show the Forest Plan objective for this program. This allows a comparison of Forest Plan projected outputs with the actual budgets allotted to the program. In addition to these graphs a narrative for wildlife and recreation is included in this section.

WILDLIFE:
There has been a downward trend from fiscal year 1998 when ‘more-than expected’ acres of treated wildlife and Threatened, Endangered or Sensitive species (TES) habitat were accomplished, to fiscal year 2003 when ‘near-expected’ acres were accomplished relative to budget levels. The following describes aspects that comprise the habitat treatment acres.

- Improved habitat due to hazardous fuels management has been substantial, making up about half of the acreage accomplishments. Hazardous fuels treatments can be largely beneficial and Forest Plan habitat objectives can be met faster than expected if wildlife/botany objectives are adequately designed into hazardous fuels treatments. ARNF has anticipated the increased fuel treatment program well and has correspondingly increased biology/botany staff to assure favorable outcomes for wildlife.

- Old growth of all conifer types has been largely retained over the past 6 years, even with recent wildfires. Development of more, future low-elevation old growth is being best assured by reduction of forest fuels in hazardous fuels treatment areas along the Front Range and by acquisition of low-elevation lands by the Forest Service in the Evergreen, Colorado area. Implementation is beginning which will allow us to achieve the Forest Plan objective of treating about 7000 acres per year. More low-elevation old growth (ponderosa pine (PP) and Douglas-fir (DF)) is being found than was known at the time of the Forest Plan revision (1997). Newer aerial photos (taken since insect epidemics) are providing a more complete and reliable inventory of the locations of PP and DF old growth. Pre-project surveys to field truth many PP/DF old growth sites are confirming recent photo interpretation findings. An entire inventory along the Front Range was recently completed in FY03 to assure that locations are known, and to allow for planning and implementation according to Forest Plan direction. The recent inventory located additional sites that were previously undetected, but also ascertained that PP/DF old growth still remains the most limited type of old-growth forest within the ARNF.
- TES habitat improvements have mostly (except for 1 year) achieved the expected 3 (minimum number of) annual projects per year.
- Aspen regeneration and reduced conifer encroachment in openings have mostly been realized as expected through design of fuels/timber management projects.
- Expectations of riparian restoration, structural improvements and habitat protection have not been fully realized due to reduced funding.

RECREATION:

Comparisons of projected vs. actual outputs show Forest Plan objective estimates are high and actual accomplishments are low for:

- Reconstructing or rehabilitating dispersed camping areas.
- Providing new designated wilderness campsites (no actual target)
- Constructing new dispersed-use campsites

This discrepancy in output vs. accomplishment vs. budget availability indicates that these Forest Plan listed objectives are not all-inclusive of the full scope of the recreation program and in fact, represent just a minor portion of the work involved.

- Recreation Special Uses and Heritage programs are also now subsets of the overall recreation program as is the Landscape/Scenery Management program.
- Maintenance activities were not recognized as high importance (no objectives) but new construction, reconstruction, and rehabilitation were. A lot of the work of the Recreation program involves maintenance, yet, it has no tracking mechanism such as a Forest Plan objective.
- Public contact for information, education, prevention and enforcement purposes is very important and a desired workload.
- Interpretation and education functions are also important but not part of our Forest Plan monitoring system.
- Volunteer coordination is a function that results in some kind of recognized reportable activity but is rarely viewed as an activity unto itself, yet much of our dollars and efforts are spent working with volunteers.

The allotted budget for the Recreation program is below predictions shown in the Forest Plan. The program is being funded at less than one half of the Forest Plan projections. Yet, the ARP is one of the top 3 most heavily visited National Forests/Grassland in the Nation.

Prescriptions and Effects – 36 CFR 219.12(k)2 and Effects of Management Practices - 36 CFR 219.11(d)

These CFRs require evaluation of prescriptions and effects and management practices and require reporting of any significant changes in land productivity.

TRANSPORTATION SYSTEM:
Yearly budget allocation, competing priorities for the ARP as well as the long public process to obtain informed consent among polarized users substantially lengthens the planning process. Effectively closing roads is a challenge. Some closures are illegally reopened or detoured around to obtain access. There is a need for greater field and law enforcement presence.

WATERSHED:
Prescriptions - Two changes in prescriptions that directly affected water resources from the original Forest Plan (1984) to the revised Forest Plan (1997) were the elimination of the management prescriptions for water yield enhancement through vegetation manipulation and for riparian area management. The primary effect of dropping the water yield management prescription has been that changes in water yield due to vegetation management are considered to be an effect or a product of vegetation management rather than a primary goal for implementing such management. Water yield continues to be increased in those areas that are managed to reduce forest cover, through commercial and non-commercial timber removal and fire. The riparian area management prescription was dropped because all riparian areas on the Forest and Grasslands were covered by the prescription and is was assumed that riparian areas could be protected as well through Forest-wide standards and guidelines. That has proved to be the case. Standards and guidelines to protect riparian and aquatic resources were simply moved from the management area prescription to the Forest-wide standards and guidelines.

Effects of management – Watershed conservation practices found in the 1997 Revised Forest Plan standards and guidelines have largely been effective in protecting water and riparian resources (see Hydrology, Soils, Air, and Fisheries monitoring reports, 1997-2002). Monitoring has documented protection or improvement of resource conditions for a variety of projects. Where conservation measures were ineffective, it was typically because they were incorrectly applied, or because activities occurred during implementation that were not foreseen during project planning, so that appropriate conservation measures were not prescribed.

LANDS:
Funding issues continue to be a factor in meeting Forest Plan objectives for conflict free boundaries. The organizaton of the Lands Service Team is being shifted back to the district level to improve customer service and provide consistency on our business management practices related to lands and realty work. Numerous internal processing improvements made by the team will continue to be used. The utilization of a Zone Boundary and Title Management team has been a way to accomplish increased targets and support to other functions relative to the level of funding.

RECREATION:
Hazardous fuels reduction projects and wildfires can open up forest stands and facilitate motorized vehicle access to areas previously inaccessible due to the dense nature of the pre-burned or pre-thinned stands. When appropriate, travel management effects from thinning and other fuels reduction prescriptions need to be fully considered in the environmental analysis for hazardous fuels reduction projects. Recreation/ transportation monitoring after completing hazardous fuels reduction projects or wildfires is necessary to ensure that the increased access caused by the opening of forest stands are mitigated

AIR:
The long-term synoptic lake sampling program is in its ninth year and this data is being used to assess air quality impacts in Wilderness Areas. The Forest Service Regional Office in PSD permit reviews also used this data.

All necessary permits related to prescribed fire and emissions were submitted and approved by EPA and generally all conditions of the permits were met.

TIMBER:
Soil quality monitoring transects on timber sales have indicated that conventional harvesting and site preparation techniques may cause detrimental soil compaction exceeding 15% of any land unit (Forest Plan Standard #19, p. 14). Additional monitoring data should be collected to determine the significance of this finding. Review the application and applicability of the 15% standard to assure that it is appropriate. Recommendations should be developed to avoid and/or mitigate detrimental soil compaction.

HERITAGE RESOURCES:

There are no goals, objectives, standards or guidelines for the heritage resource. Law dictates much of what guides the work done in this area. However, laws do not cover all aspects of the heritage resource program and it is left up to the individual line officer to decide what work will be done.
It has not been determined how well mitigation direction is being followed as stated in the project NEPA documents.

Table 4.2 Forest Plan Monitoring Questions for Priority Management Emphasis and Stakeholder/Public Involvement.

The following questions are displayed in Table 4.2 (Forest Plan, pages 394-396). These questions address priority management emphasis, goals and objectives in Chapter 1 of the Forest Plan. As described in Chapter 1, page 3 of the Forest Plan the ARP has an overall mission to achieve over time; **Forest-wide management implementation must balance the demands of people's vastly different resource-use values with maintaining ecosystem health.** To focus the ARP management towards meeting this mission the Forest Plan identified three management emphasis areas: 1) biological diversity, ecosystem health and sustainability; 2) human use; and 3) land use and ownership. The following questions fall into one of these three areas.

Biological Diversity, Ecosystem Health, Sustainability

General: Successional - Structural Stages	Have the Forests and Grassland made progress toward assuring adequate representation of the full range of successional or structural stages of community types across the forest and grassland landscapes? How has the representation of successional stages been accomplished? (Biodiversity; General - Objective #12)

On the ARNF, increases have occurred in early forest successional stages from management treatments and natural events (primarily wildfire) in young- to mature-forests as planned. The ARP emphasis on hazardous fuels treatment is making this possible for the most part. The increase of early stages has occurred while old growth forests were generally retained Forest-wide.

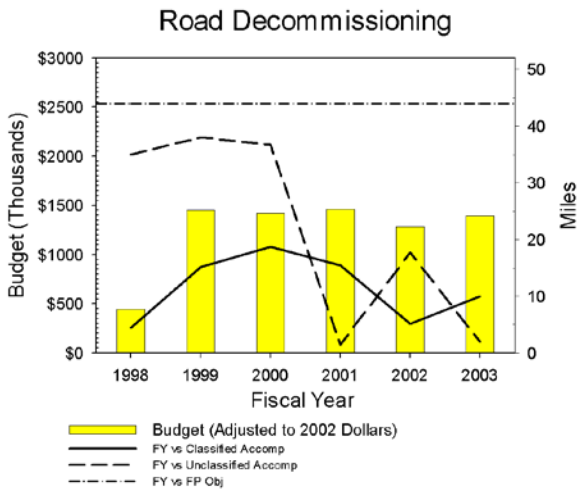
Old growth of all conifer types has been largely retained over the past 6 years, even with recent wildfires. Development of more, future low-elevation old growth is being best assured by reduction of forest fuels in fuels treatment areas along the Front Range and by acquisition of low-elevation lands by the Forest Service in the Evergreen, Colorado area. Implementation is beginning which will allow us to achieve the Forest Plan objective of treating about 7000 acres per year. More low elevation old growth (ponderosa pine (PP) and Douglas-fir (DF)) is being found than was known at the time of the Forest Plan revision (1997). Newer aerial photos (taken since insect epidemics) are providing a most complete and reliable inventory of the locations of PP and DF old growth. Pre-project surveys to field truth many PP/DF old growth sites are confirming recent photo interpretation findings. An entire inventory along the Front Range was recently completed in FY03 to assure that locations are known, and to allow for planning and implementation according to Forest Plan direction. The recent inventory located additional sites that were previously undetected, but also ascertained that PP/DF old growth still remains the most limited type of old-growth forest within the ARNF.

A quantified comparison of forest structural stages from 1997 to present is not available since updates to Forest resource data are not yet complete.

On the PNG increases have occurred in grassland mid-structure grasses especially due to several wet seasons. A revised grazing management plan for the west side of the Grassland will best assure both short-grass and mid-grass stages. The short-grass structural stage is adequate for nesting mountain

plover (a previously proposed threatened species that was recently withdrawn from proposed listing), and the mid-grass structural stage is necessary for nesting lark buntings (a regionally declining species).

General: Ecological Processes & Human Influences	Has progress been made toward improving Forest and Grassland wildlife habitat and watershed condition through modification of system roads, trails and ways? How has this been accomplished? (Biodiversity; General - Objective #1)



WATERSHED CONDITION:
While roads continue to be one of the major sources of sedimentation and cause other impacts to streams and riparian ecosystems on the Forest, some progress has been made. Nearly all roads affect soil and watershed processes by providing continuously bare ground that serves as a source of erosion and by providing compacted areas that produce and concentrate surface runoff, and reduction in roaded area in the Forest tends to benefit soil and water resources. However, the roads that have the greatest impact to water resources are those that are located adjacent to stream channels. Consequently, the greatest benefit is from the obliteration or relocation of those roads. In addition to other roads decommissioned during the current planning period, ¼ mile of road along Bronco Creek and 1 mile of road along Cabin Creek, both on the Sulphur Ranger District, have been obliterated or relocated. It should be noted that hundreds of miles of stream-adjacent roads remain and that we have been only partially successful at reaching out objective of decommissioning approximately 44 miles of road per year.

WILDLIFE HABITAT:
Some progress has been made toward improving wildlife habitat through modification of system roads, trails and ways. However, the progress made is less than full implementation of the Forest Plan. The situation is this:

There appears to be more off-road use or use of unclassified roads (identified as "ways" in the Forest Plan, basically, user-created roads) than estimated in the Forest Plan. Accordingly, this may be resulting in higher amounts of human-disturbed wildlife habitat than predicted in the Forest Plan. Closing of certain Forest Service roads and "ways" that have established use is at times unsuccessful. Gaining public support for closing travelways is seldom successful, and some public reaction to proposals has at times been potentially violent. Numbers of unauthorized routes appears to be increasing every year. An average of 76% of the expected Forest Plan objective of 44 miles of closures per year (Forest Plan, p. 4) is being realized that improve habitat effectiveness.

> Emerging issue: Due to lack of Forest Service field presence off-road vehicle use is increasing and apparently unconstrained in many sensitive areas on the ARP.

General: Old Growth	Have old-growth quantity and quality been maintained and have management activities assured adequate/sufficient old growth for the future? How has this been accomplished? (Biodiversity; General - Objective #2) (36 CFR219.)

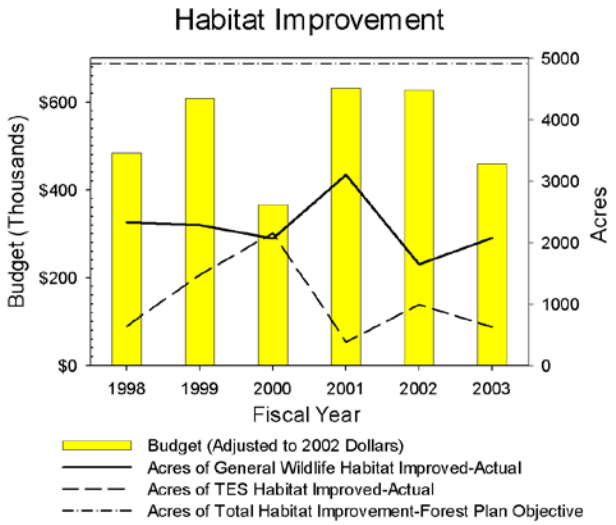
Old growth forest quantity and quality have been maintained, and adequate/sufficient old growth is assured in the future. In 2002 the ARP acquired approximately 2700 acres in the Evergreen, Colorado area from the City of Golden. This land serves as an important wildlife refuge and as one of the last remaining intact low-elevation, forested ecosystems along the Front Range of Colorado offers a high potential to develop into low-elevation old growth.

During some monitoring field reviews, it was discovered certain management activities were carried out and/or planned without knowledge and consideration of old growth presence o old growth Forest Plan direction. By chance no old growth was lost to prescribed fire or mechanical treatments.

Planning teams were informed of this lack and made aware that all direction in the Forest Plan must be considered and evaluated.

> Recommendation: Awareness and application of Forest Plan old growth direction should become a primary objective in any forest treatment project, during both planning and implementation.

General: Threatened Endangered and Sensitive Species	Have habitat-improvement projects resulted in protection, restoration and enhancement of habitat for threatened, endangered and sensitive species? What management practices have been most effective? (Biodiversity; General - Objective #3)



Habitat improvement projects have generally protected, restored and enhanced habitat for TES species. Examples of projects that have 'made the most difference' in both protection and enhancement are prescribed burning to benefit mountain plover nesting, and travel access management to protect the plover, native cutthroat trout and other TES species across the PNG and ARNF. Advances have been made in recognizing and managing for rare plants in all management activities since the 1997 Forest Plan revision, but deliberate projects for improved rare plant habitats have been few to-date.

TES projects by nature are often site-specific, limited in extent, but very important to small populations or few individuals. Work and progress in this area often goes unnoticed by all but the biologists and botanists on the ARP since it is not widespread or showy. As previously noted, annual accomplishments have been at the minimum level expected (3 projects per year).

> Recommendation: Given the high emphasis for biological diversity committed to in the Forest Plan, increased effort in this area is appropriate. Missed, yet still available, opportunities include working with partners, restoring riparian areas, translocation of native cutthroat into currently unoccupied streams, expansion of current cutthroat habitat by removal of non-native trout, and better/increased access management (see off-road and travel management discussions) in TES habitat.

Air, Soil, and Water: Air Quality Related Values	Is progress being made to move air quality related values from at-risk to a maintenance or higher level of protection? How were related values protected and improved? (Biodiversity; Air, Soil & Water – Objective. #4) (CFR 219.23 e)

Progress has been made in evaluating baseline conditions for some air quality related values (AQRV's) of forest resources as well as developing ways to evaluate trends in condition for AQRV's.

Monitoring air quality related values has been primarily focused on lake chemistry in Wilderness and nearby areas. The AQRV being measured is water quality. Year 2003 lake sampling and analysis has been completed. Results of this year and previous years sampling are currently being analyzed and summarized by the Rocky Mountain Experiment Station (Dr. Robert Musselman). This data will be used to help assess baseline levels as well as trends in lake chemistry on the forest and how they reflect changes in air quality.

The Forest continued to work with Forest Service Regional staff and adjacent land managers (e.g., Rocky Mountain National Park) to evaluate impacts from new pollution sources and recommend mitigations to minimize those impacts. Baseline information on high elevation lake water quality, visibility data and other sources of air quality information was used by the regional office to provide comment and review of at least three PSD permits in the general area of the front range of Colorado.

To maintain existing air quality the ARP continued to work closely with the Colorado Air Pollution Control Division and continued to meet all applicable state and federal air quality requirements related to smoke emitted during prescribed burning projects in 2003. In 2002 both the Denver Metropolitan Area and the Fort Collins area were redesignated as Maintenance/Attainment status for carbon monoxide. Denver continues to try and improve its status for ozone. Also the Governor of Colorado submitted a Maintenance/Attainment Plan for PM-10 pollutants in the Denver Metropolitan area to the EPA, and is awaiting action. All of these events are indications that air quality is being maintained or improved in the Front Range airshed, which leads to better air quality in nearby Class I areas, such as the Rawah Wilderness and Rocky Mountain National Park.

The Forest has also continued to work with Colorado Department of Transportation and Federal Highways Commission to evaluate, and modify if necessary, potential impacts of road and highway projects such as I-70 and Guanella Pass Road where such projects could impact air quality of National Forest system lands.

In addition this year the ARP, Regional Office, and Washington Office staffs began the task of entering the data into NRIS Air database, coordinating data input, forms, feedback on database development. The NRIS Air database development has been continuing and data is being utilized at the regional level. Early 2004 is the target date for installation of NRIS Air on the ARP.

Air, Soil, and Water: Forest Emission Budget	Has progress been made on developing a Forest and Grassland emission budget? How was the Forest emission budget developed? (Biodiversity; Air, Soil & Water - Obj. #5)

The Forest is still working with other entities (Colorado Department of Health – Air Pollution Control Division, Universities, and Research Stations) to develop appropriate tools for measuring and modeling emissions so that an emissions budget can be developed for the ARP. In the meantime the following steps are being implemented in order to achieve the goal of developing a Forest and Grassland emission budget.

As part of the burn permitting process smoke emission models are used to predict emissions from all burn projects, these are currently tracked and recorded in project files and yearly spreadsheets. This year the Forest started to calculate not only the maximum emissions for all projects for the year, but also, based on actual acres burned, the likely emissions created.

The ARP and Rocky Mountain National Park jointly purchased a particulate concentration monitor, which can be used to measure the impact of a prescribed fire at a sensitive receptor. While concentration cannot be tied directly to predicted or calculated emissions, the monitor provides a means of quantifying emissions in order to compare them to either pre-burn levels and/or regulatory limits. In the next year or two, the ARP will continue to develop experience using the monitor and utilizing the data it provides.

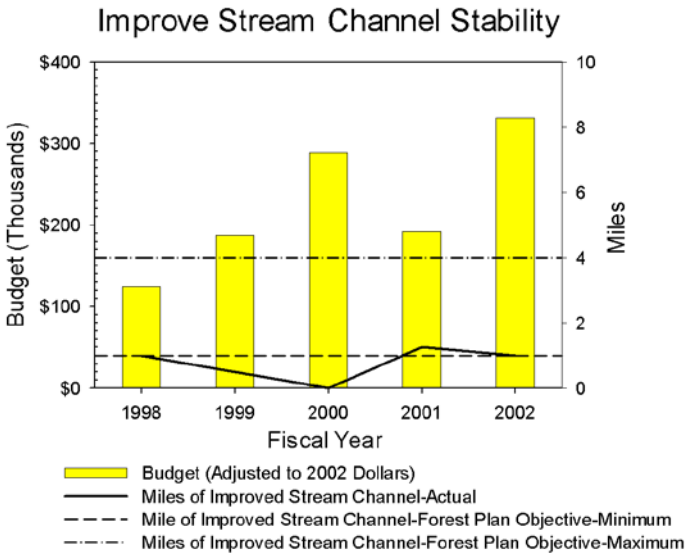
These types of tools and analyses will be used to develop an emissions budget for the ARP in the next several years.

Air, Soil, and Water: Functional Watersheds	Has the Forest made progress toward moving sixth-level watersheds from at-risk or non-functional to functional? Which watersheds were improved and how was this accomplished? (Biodiversity; Air, Soil & Water - Objective #7)

While incremental progress has been made through watershed improvement projects, facilities improvement projects ("10% fund" projects), and through changes in grazing management, no sixth-level watershed has been improved in condition enough to change its condition class.

Recommendation: No change to the objective is recommended. Focus implementation on identifying and completing sufficient watershed improvement within priority watersheds so that improvement in watershed condition can be demonstrated.

Though not directly part of this question, an objective to improve channel stability is listed in the Forest Plan. Improving channel stability is a key component to improving the watershed condition. Some progress has been made towards some channel stability.



Air, Soil, and Water: Ecological Land Units	Has the Forest made progress toward moving Ecological Landtype Units from at-risk to a maintenance or higher functioning level? How was this accomplished? (Biodiversity; Air, Soil, & Water - Objective #6) (CFR 219.23 e)

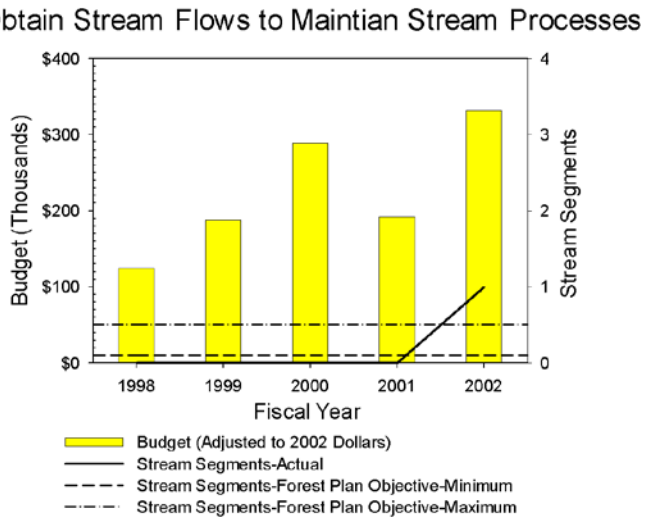
The forest staff is working at improving implementation of water and soil conservation practices during project implementation, primarily by utilizing monitoring results to develop better project input and analyses and by working with district implementation people and providing feedback for improving implementation practices. The ARP in conjunction with Colorado State University (CSU) continued to monitor emergency rehabilitation treatments and soil and water impacts of the Bobcat Fire as well as effectiveness of road closures. Three Master's theses and one dissertation were approved and published.

Recommendations:

- Continue to develop a more measurable goal for soil quality and at-risk soils.
- Continue to use/develop standard protocols for soil quality monitoring. Begin to work with regional office personnel if necessary to ensure protocols, standards and measures used are acceptable and applicable.
- Ongoing research projects from Rocky Mountain Research Station personnel, CSU, and other forests/institutions need to be applied, and possibly incorporated, with ongoing monitoring of management activities on the forest.
- Continue to work with marking crews, silviculturists, and engineers to educate them about soil/water resource issues and solutions.

Air, Soil, and Water: Stream Flows	Has the Forest made progress toward obtaining (through negotiation, trade or purchase) stream flows to sustain aquatic life and maintain stream processes on up to 5 reaches of stream channels? What were the most effective and cost efficient methods? (Biodiversity; Air, Soil & Water - Objective #8)

The Forest has minimally achieved this objective through the completion of an easement with the City of Boulder for the Lakewood pipeline. The pipeline diverts water from North Boulder Creek and the reach protected extends from the City's diversion at Lakewood reservoir to the confluence with North Boulder Creek. The easement contains language that limits the maximum daily withdrawals and recognizes the City's instream flow program as providing protection for minimum flows.



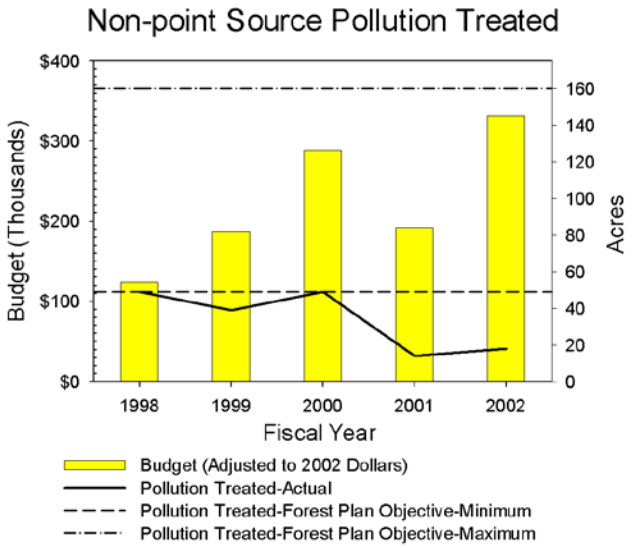
Air, Soil, and Water: Non- Point Source Pollution	Has the Forest made progress toward reducing non-point source pollution in Class II and III watersheds and in streams, which are not fully supporting State-designated uses? How has this been accomplished? (Biodiversity; Air, Soil & Water - Obj. #10)

Progress has been made through the implementation of watershed improvement projects, road decommissioning, and abandoned mine reclamation, although the pace has been more moderate than the 49-160 acres annually listed in the Forest Plan objectives. Annual accomplishment has been more typically in the 10-20 acre range. Determining the effectiveness of improving State-listed streams is more problematic. The State lists stream segments that are not fully supporting State-designated uses on a list that is referred to as the 303(d) list. When the Plan revision was completed, there were 12 stream segments on the Forest that appeared on the list. On the most recent list, the 2002 303(d) list, only six stream segments that occur on the Forest are listed. However, the change is mostly an effect of a change in the State's listing criteria.

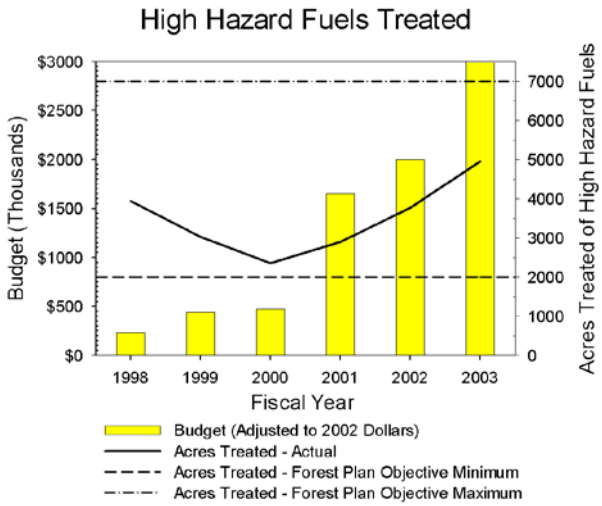
An abandoned mine reclamation project has been implemented in a tributary to the West Fork of Clear Creek that should reduce contribution of metals pollution from Forestlands. Another project is planned

for an abandoned mill site in the Leavenworth Creek watershed. Both of these streams appear on the 303(d) list. The Forest now employs a full-time abandoned mine reclamation specialist, which should continue to accelerate the pace of abandoned mine reclamation.

The Forest also continues to participate in a multi-agency cooperative effort to reduce sedimentation in the Fraser River, even though the Fraser no longer appears on the 303(d) list.



Vegetation: High Fire Hazard	Has the Forest made progress toward reducing the number of high fire hazard, high value, and high and moderate risk acres? How was this accomplished? What was the most effective method? (Biodiversity; Vegetation - Objective #11)



The objective is to reduce the number of high risk/high value, and high and moderate risk acres by 2,000 to 7,000 acres annually using mechanical and prescribed fire treatments. The above graph shows the annual accomplishment of acres treated meeting this objective:

The annual average accomplishment for the first six years of the Forest Plan falls within the stated objective but does not show substantial progress toward accomplishment of this objective. Planned accomplishments were higher for most fiscal years but were not achieved due to a variety of reasons. Most notable were not having suitable weather and fuel conditions to execute prescribed burns, a moratorium on prescribed burning during a portion of FY 2000, and the commitment of personnel to fire suppression assignments.

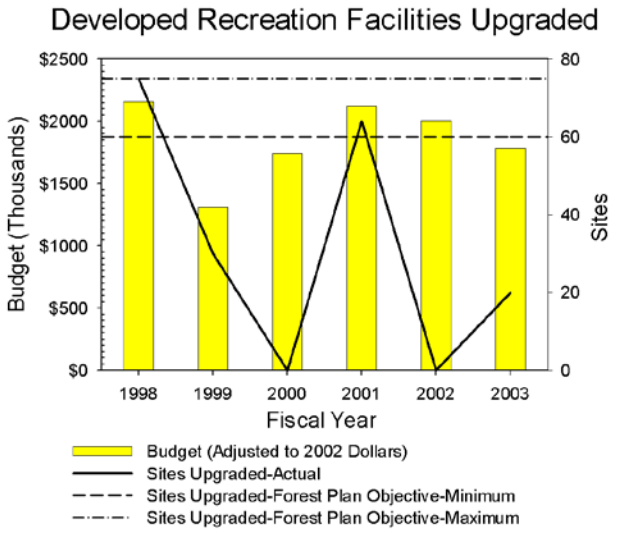
Accomplishment of this objective is expected to increase substantially during the next four years due to the emphasis of the National Fire Plan and the Front Range Fuels Treatment Partnership.

Human Uses

Wilderness	Is the Forest making progress toward providing designated wilderness campsites where resource impacts from users are evident? (Human Uses - Objective 2)

The Forest hasn't added designated wilderness campsites since they were established in the Indian Peaks Wilderness Area in the mid-1980's, and in the Comanche Peak Wilderness Area in 1996.

Developed Recreation	Has the Forest made progress toward providing a mix of facility reconstruction, expansion, and, when possible, new developments consistent with future use projections? Has this been done to assure quality developed recreational opportunities? (Human Uses, Developed Recreation - Objective #4)



Progress has been made. Within the past 6 years, the following campgrounds were reconstructed: Ansel Watrous, Narrows, West Lake, Sunset (new) and Willow Creek, and Stillwater. The annual ARP toilet replacement contract has contributed to at least sixteen new toilets across the Forest. The Sunset Boat Ramp and parking facility were reconstructed and the boat ramp was extended twice. A sailboat "gin" pole was installed at the Stillwater Boat Ramp. The West Branch, Rawah, and Lower Maxwell Falls Trailheads were rebuilt. A bridge replacement was installed at Buffalo Creek. A new 4x4 trail bridge on Trail Creek Trail, a new bridge on Sunken Bridges Trail, and a new bridge on the Bakerville-Loveland Trail were installed. Many individual campsites were brought to Americans with Disabilities Act accessible standards. Many developed campsites were reconstructed using Granger-Thye collections. Many other items were replaced, repaired, or installed such as water and electric lines, new pumps and chlorinator facilities, new picnic tables and fire rings. New tent pad areas were delineated with timbered borders. Trails in developed campgrounds were hardened. A few new campsites and group-use areas were also built. A new kiosk was installed on Mt. Evans and a new nature center is currently being built on the Mt. Evans Road by the Mt. Goliath Trail. Twenty-three miles of new Continental Divide Trail and one mile of new trail on the Grays and Torreys Peaks Trail were constructed. A new boardwalk was installed on the Bierstadt Trail.

Dispersed Recreation	Has the Forest made progress toward reconstructing or rehabilitating impacted dispersed areas and sites, providing new designated dispersed campsites consistent with future use projections? How has this been accomplished? (Human Uses, Dispersed Recreation - Objective #1, #3)

Progress has been made in dispersed recreation sites. The Manhattan Road, Long Draw and Lost Lake areas (in the Canyon Lakes Ranger District) have designated-dispersed campsites. Toilets have been installed in the Stillwater backcountry dispersed camping area and at many trailheads across the Forest to concentrate and reduce human waste issues in these areas. Restrictions have been established to prohibit shooting and/or overnight use in the Buckhorn Area of the Canyon Lakes Ranger District; Left Hand Canyon, Lefthand OHV Area, and South Saint Vrain Canyon of the Boulder Ranger District; and the Mt. Evans Road corridor and the Fourth of July Road corridor on the Clear Creek Ranger District. Several annual Lefthand Canyon cleanups have been instituted to remove debris and rehabilitate this heavily impacted dispersed area. There have also been shoreline cleanup projects at Lake Granby. Buck-and-rail fences were installed around several dispersed campsites in the Stillwater area of the Sulphur Ranger District to prevent campers and OHVers from traveling beyond the dispersed campsite boundary.

Visitor Satisfaction	Have the Forest and Grassland made progress toward providing satisfactory recreational experiences to visitors? (Human Uses, Visitor Satisfaction - Objective # 5)

The ARP strives to provide satisfying recreation experiences to our visitors. The Mt. Evans Recreation Fee Demo (RFD) project area has provided the public with a substantially enhanced recreation experience. The additional funding enabled by the RFD has provided for toilets cleaned to high standards and at high frequencies; interpretive programs and Forest Service interpreters to lead them; roving patrols to provide visitors with information, comfort, safety and security; new and improved signage; a new nature center at Mt. Goliath; and other facilities maintained to better standards. As a

result of the Arapaho National Recreation Area (ANRA) RFD; service patrols have increased; interpretive day events for first and fifth graders have occurred; boat safety patrols on Lake Granby and Shadow Mountain Lake have increased; cleaned and maintained toilets and trash service in the ANRA picnic areas have improved; and law enforcement patrol in the ANRA for enhanced visitor safety and security has also increased. The Christmas Tree RFD program at Clear Creek, Sulphur, and Canyon Lakes Ranger Districts provides for substantial information and educational opportunities, technical assistance, safety and security and overall interaction and good will with the public.

More and better interpretive signs and information increased visitor satisfaction. New signs on Guanella Pass Scenic Byway and three interpretive signs at the Lake Granby Overlook of the Colorado River Headwaters Scenic Byway were constructed. At the Clear Creek Ranger District's Visitor center a new interpretive kiosk was built. New wildlife mounts and natural wood furniture for the Sulphur Ranger District visitor center enhanced the visitor's experience. The Boulder Ranger District Visitor Center also saw improvement with additional available maps, furniture and information racks. A substantial visitor center is being designed for the Supervisor's Office/Canyon Lakes Ranger District's new office building. The ARP has invested in upgrading and hiring visitor services positions to increase service to the public.

The Forest Concession permit provides for concession-managed developed campground (and some picnic areas); operations, maintenance, host staffing, interpretive program. This provides additional dollars to spend on site improvement projects.

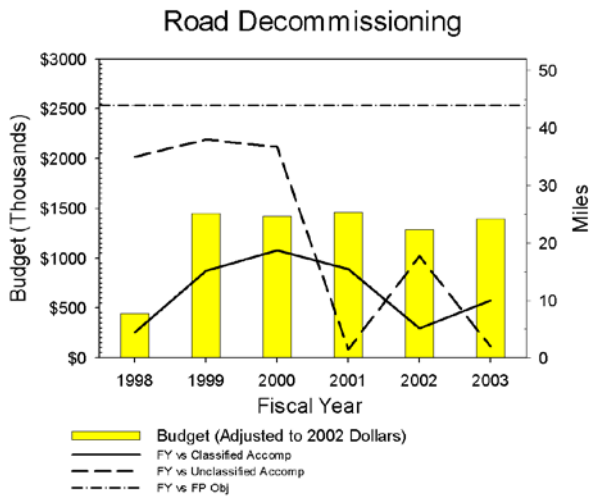
Hundreds of recreation special-use permits are issued to providers who serve the public and provide recreation experiences via outfitter/guides, marinas, ski areas, boat docks, recreation events, recreation residences, and many others.

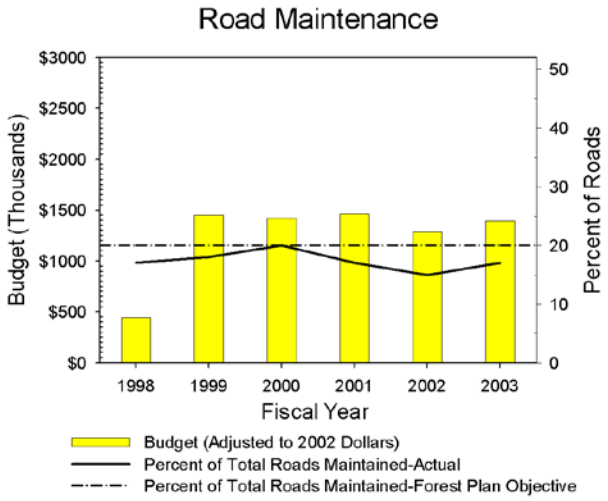
Roads and trails, signs, information bulletin boards, toilets at trailheads, facilities, dispersed camping areas, day use areas, historic and prehistoric sites, paleontological sites and other areas are maintained on the ARP for enhanced public recreation experiences.

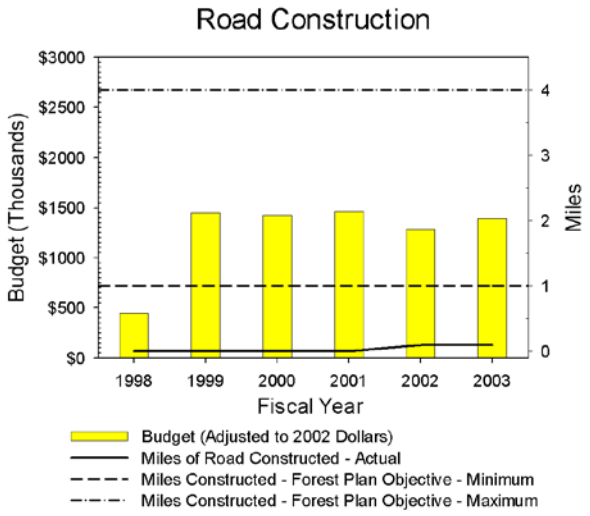
The ARP also provides random interpretive programs in the field and sessions at schools, campground coffees at CCRD, visitor contacts at district VIS centers and in the field, Passport In Time archaeological based recreational experiences and interpretive signage for our kiosks and bulletin boards.

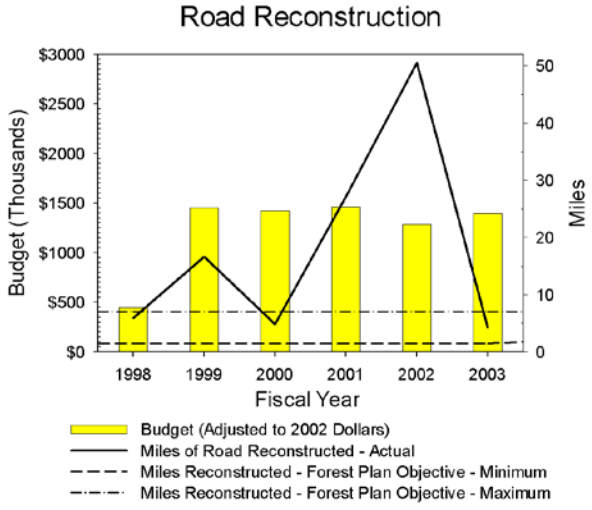
Finally, the ARP uses the customer comment cards at visitor centers, Christmas tree areas, RFD sites, and concession operated campgrounds to gather public response and assess satisfaction to our programs and service. The National Visitor Use Monitoring survey estimates approximately 6.2 million annual visits to the ARP, and relatively few complaints per year. The overall estimate is that thr ARP is meeting and probably far exceeding our 70% satisfactory recreation experience objective in the Forest Plan.

Travel Management	Have priorities been established and implemented for managing travel to best meet future travel and access needs of Forest users? How has this been accomplished? (Human Uses, Travel Management - Objectives #6, #7, #8, #9, #10, #11)









The Forest Plan recognized the importance of managing travel and transportation planning on the ARP. It is the implementation of this, which has been difficult especially due to tight budgets, competing priorities, personnel downsizing, as well as the long public process to obtain informed consent among polarized users.

WATERSHED:
Roads and trails are a major contributor to watershed and riparian impacts on the Forest. Others have noted that travel management planning, while an ongoing effort, has proceeded at a pace that has only lead to the partial attainment of Forest Plan objectives. There needs to be a continuing emphasis on interdisciplinary participation in travel management planning so that resource concerns are addressed while access needs are being met.

RECREATION:
Forest Closure Order No. 10-00-03 (signed 5-27-98 by Forest Supervisor, Peter Clark) prohibits "Using or possessing a motorized vehicle off numbered Forest Development roads or designated travel routes (36CFR 261.56)" and prohibits "Using a motorized vehicle on a closed Forest Development Road (36 CFR 261.54 (a)". The order also lists by district, specific roads and trails closed to motorized vehicle travel, year around and seasonally.

Districts are in various stages of implementing the above closure order, as well as planning for additional closures and opportunities for motorized travel. This is an ongoing process.

TRANSPORTATION:
Travel management consists of three components: transportation planning in support of increased users and uses, implementation of projects resulting from transportation planning; on-going maintenance and monitoring of the decisions made on the transportation system.

Planning: All districts on the ARP have begun travel management planning. In some instances, it has occurred in conjunction with planning for other projects or during landscape analysis. On the Boulder and Sulphur Ranger Districts and the Pawnee National Grassland, specific travel management plans have been made for portions of the units. Travel management is very controversial in the surrounding communities. The public involvement process is complex and time-consuming. For that reason, there has been a reluctance to include travel management planning with planning for targeted projects such as hazardous fuels reduction. The ARP has been unable to make the financial or time commitment to a regular, unified travel management program. The majority of the effort has been placed on inclusion of travel management in large project planning efforts. The inclusion of travel management in these other high priority projects has led to a few travel management decisions. There is not sufficient funding or personnel to do major travel management planning in addition to major fuels reduction planning.

In January of 2001, new legal requirements for travel/transportation planning for roads were adopted. The new requirements called for a scientific-based transportation planning process. The Forest Service developed a national process called *Roads Analysis: Informing Decisions About Managing the National Forest Transportation System*. The new system provides scientific-based recommendations to land managers for management of the roaded transportation system. Decisions involving new or changes to the National Forest road system are required to be "informed" by a Roads Analysis Process (RAP). In FY 2003, the Forests and Grassland completed a RAP for all of the maintenance level 3, 4, and 5 roads on the inventory. This RAP document will serve as an umbrella document for future roads analyses at the area, watershed or project level for our remaining road system.

Implementation: Implementation of projects occurs when transportation decisions are made in the planning stage and are funded through capital investment, timber purchaser or other programs. As

defined by the ARP, the implementation phase is implementation of recent travel management decisions and not the annual or routine activities necessary to maintain previous decisions or actions. Implementation of major travel management decisions has occurred on the Sulphur Ranger District (Sweetwater OHV area) and Pawnee National Grassland. These and other projects have included OHV trail designations, classified and unclassified road decommissioning, road restrictions and closures, and implementation of road construction or reconstruction via other projects whose objectives were not directly related to travel/transportation management. These projects include road work in timber sales, roadside erosion control, moving of roads out of drainage bottoms and roadwork included as part of other capital investment projects such as campground reconstruction.

The average accomplishments for converting "ways" to system roads has been within Forest Plan objectives, but conversions occurred in only one year. The 2001 regulations as discussed in the previous paragraphs shed a different light on the need and our ability to convert "ways" (now called unclassified travelways) to system roads (now called classified roads). If anything, the new regulations and executive intent has been to reduce the number of miles of classified roads in the National Forests. National emphasis has been on decommissioning of both classified and unclassified roads.

The Forest Plan objective for decommission roads has been met in two out of the five years, but the average accomplishment is 76% of that objective. Most of the reason for not meeting the objective is in the requirements of the RAP process and complexity/controversy involved in the public involvement. The easy, non-controversial roads have been decommissioned. The Forest and Grassland remains committed to decommissioning of unnecessary classified and unclassified travelways.

Average implementation of road reconstruction has exceeded the Forest Plan. This is primarily due to variations in the timing and needs of the timber sale program. National emphasis has been on reconstruction and maintenance of our existing road system rather than new construction.

The ARP has not met Forest Plan objectives for new road construction. This is not necessarily a negative indication of Forest Plan implementation. It is an indicator of the ARP following national directions and policies. The need for new, permanently open roads is less than anticipated by the Forest Plan. More data is needed before recommendations can be made for changes to this particular objective.

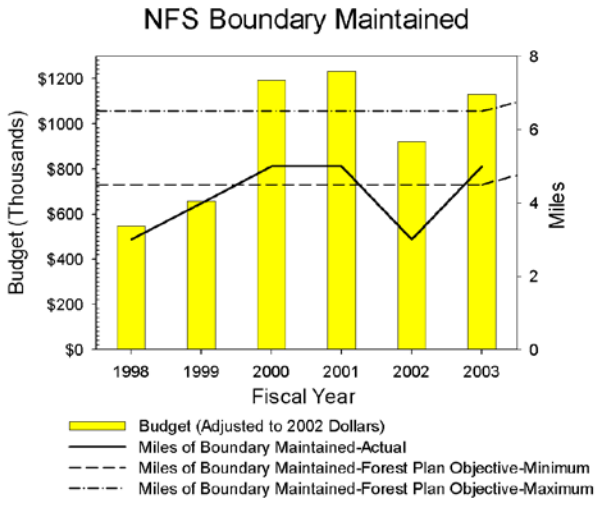
O*n-going Maintenance and Monitoring:* Ongoing maintenance includes the recurring work such as system road and trail maintenance, sign maintenance, managing seasonal gate closures, installing information boards and signs, reinforcing existing closures and obliteration of parallel roads and resource damage. An inordinate amount of time was spent on decommissioning previously decommissioned (closed or obliterated) roads. This work involved replacing damaged gates, fences, boulders and signs. Inventorying and performing road deferred maintenance surveys of all of our existing roads has been accomplished during the five years. The ARP personnel doing the on-going management activities are continually monitoring, evaluating and prioritizing the work for following years.

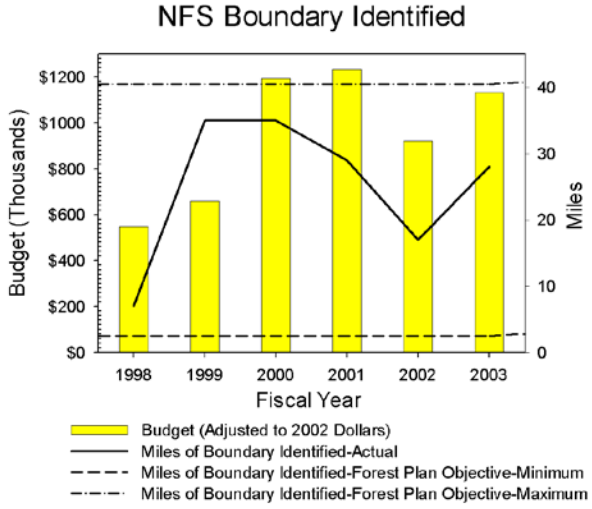
The ARP has met the Forest Plan objectives for maintaining system roads. Contracting and agreements with our local county governments have helped us meet this objective.

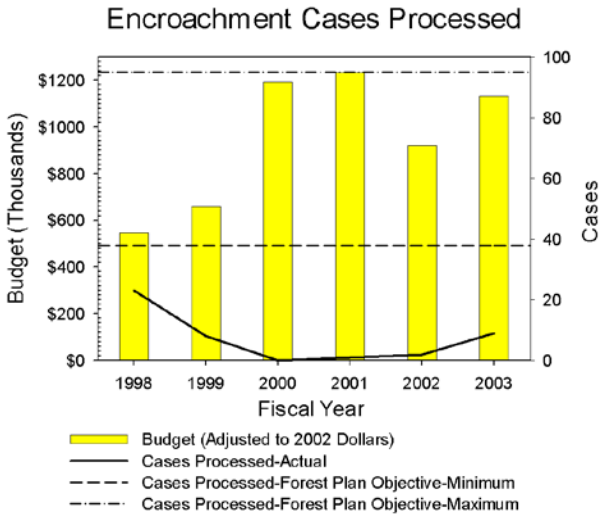
WILDLIFE:
Converting 'ways' to system roads and trails as well as reconstructing, constructing, developing and maintaining system travel-ways have important implications to ARP-wide habitat effectiveness objectives. RAP efforts have appropriately incorporated wildlife/botany resource input, although the ARP has little room to change the type of roads considered to-date by RAP. This is because the ARP-wide RAP in accordance with national policy only analyzed the two-wheel drive roads (maintenance level 3, 4, and 5), which are the main transportation system for the ARP. It is the four-wheel drive roads (maintenance level 2) and unclassified (user-created) routes, which poses the problems for wildlife. Similar wildlife/botany resource input is most needed in the more specific project- or watershed-scale RAPs dealing with these four-wheel drive roads and unclassified routes. Referencing what has been said in *General - Ecological Processes and Human Influences* (above), the implementation of management of most system road and 'ways' has not fully met Forest Plan direction relating to expected wildlife habitat improvements.

Land Uses and Ownership

Boundary Mgt., Access and Land Ownership Adjustments	Has the Forest made progress toward improving boundary management, access, and land ownership adjustments to protect and enhance Forest and Grassland resources and to increase management efficiencies? Which approaches have been effective? (Land Uses & Ownership, Boundary Mgt., etc. - Objective #1, #2)



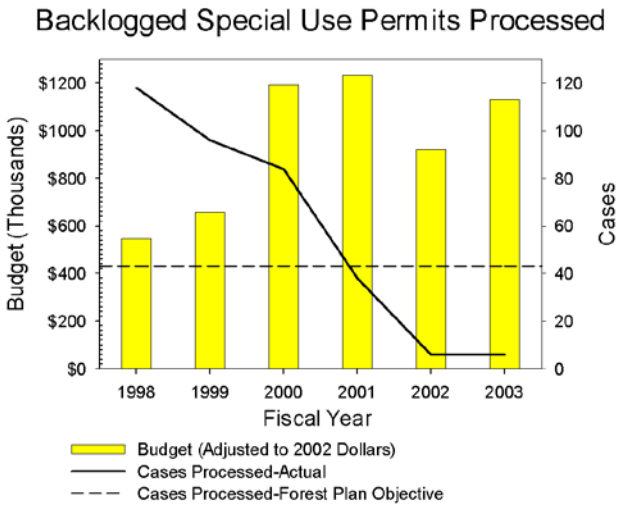


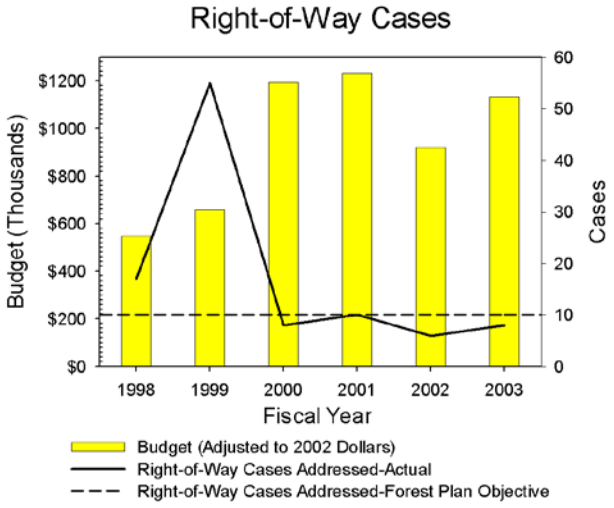


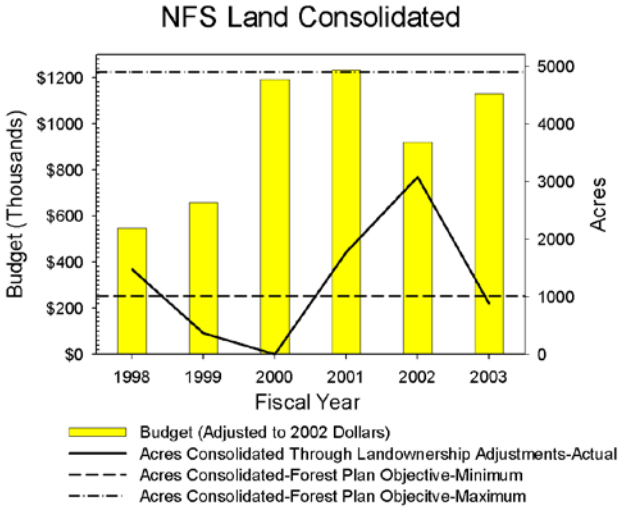
Identification of boundary lines has averaged almost 25 miles per year in the six years being reported. With the increased population and the demands for recreation, the ARP is experiencing dramatic increases in use which causes increasing problems of trespass, encroachment and loss of access by the public. However, the boundary line program emphasis has shifted to support the hazardous fuels reduction program. Virtually all of the boundary location work is now performed by contract or through agreements with the Bureau of Land Management. The ARP program is managed from a zone office on the Medicine Bow NF in Laramie. The zone arrangement works very well and has helped the program be as efficient as possible. The ARP land surveyor position was vacated in early fiscal year 2000 and not filled because of budgetary constraints. (It is anticipated that this position will be filled in 2004.) This level of program provides minimal support to other functions and does not address the backlog of trespass, encroachments or title claims.

Land adjustments are multi-year projects in most cases. In order to complete Forest Plan targeted cases in any one fiscal year; casework must be started on approximately twice the number of cases in preceding years. Cases can be dropped or frequently changed because of changing land values, indecision, delays in finalizing the environmental analysis (NEPA), changed proposals and the changing economic climate. Progress has been made toward Forest Plan Objectives in all areas except reduction of encroachments. The progress has been at the “Experienced” level in Supplemental Table 1. The Lands team effort was not effective and has been replaced. The zone process for boundary location has been very effective.

Case Backlog for SUPs, ROW Grants and Land Ownership Adjustments	Have the Forest and Grassland made progress toward improving customer services to reduce the number of backlogged cases for special-use permits, rights-of-way grants, and landownership adjustments? How has this been accomplished? (Land Uses & Ownership, Special Use Permits (SUPs), Right-of-way (ROW) Grants & Landownership Adjustments - Objective #2)







Barely acceptable progress has been made to reduce backlogs. The ARP Leadership Team has recognized this shortfall and has taken action to increase emphasis on reducing the backlogs, including building increased funding into future Lands budgets. The increased emphasis was first realized in FY 2002. Part of the reorganization of Lands in 2002 was specifically to deal with the backlog. As part of the reorganization, the emphasis of several positions will be to address the backlogs. In addition, the development of consistent, forest wide processes, including a streamlined NEPA checklist process for addressing our backlog of special uses has helped make processing of cases more efficient.. Full interdisciplinary teams for fuels projects have been hired, relieving other specialists of fuels-related duties, allowing them more time to devote to supporting Lands activities.

Many accomplishments in land ownership adjustments were made during the five-year reporting period. The most significant include:

- In FY 2002, initial funding was received for the first phase of the Beaver Brook Watershed Acquisition on the Clear Creek Ranger District. In FY 2003, 610 acres of this area were purchased. The Beaver Brook Watershed is a 2,700-acre parcel that serves as an important wildlife refuge and as one of the last remaining intact low-elevation, forested ecosystems along the Front Range of Colorado.
- A major multi-party exchange involving Winter Park, the City of Fort Collins, State of Colorado, and four private parties area was completed in 2001. Approximately, 13.5 acres of federal land located at the base of Winter Park Ski Area valued at $3,820,000 were exchanged for 1,773.21 acres of non-federal land valued at $4,289,500.

Permit Review, Cost Recovery	Have the Forest and Grassland made progress toward working with potential permittees to insure that benefiting parties assume the costs of permit review and administration? How has this been accomplished? (Land Uses & Ownership, Permit Review - Goal #2)

Cost recovery is not yet implemented at the National level. Whenever possible, collection agreements are made with project proponents which allow the collection of certain costs to the government from the proponent. Collections agreements are used to their maximum extent to fund Lands work. Efforts at recovering (collecting) costs for permit processing, appraisals, specialist reviews, etc. have been successful.

Collection agreements are being set up with our ski area permit holders for work generated outside regular permit administration duties. So if any projects are proposed that require NEPA or specialist review, the collection account is used to cover the specialist's time on the project. In addition, when working with Grand Huts Association (GHA), the Sulphur Ranger District discussed scheduling of NEPA for GHA's project proposal to replace Second Creek Cabin, given ARP budget and staffing constraints. The proponent, GHA, decided to fund most of the NEPA with an outside private contractor, while the ARP agreed to provide the specialist reports for Scenic Resources and Recreation. The combined NEPA project took only 9 months to complete, at very little comparative cost to the ARP.

Public Involvement	How and to what extent have the public and stakeholders been involved in assisting implementation, monitoring and evaluation of the Forest Plan.

In recreation, stakeholders have primarily been involved in the implementation of trail maintenance, noxious weed removal, and information and education work across the Forest. Many volunteer groups contact visitors, patrol wildernesses and summer/winter trails, restore watersheds, improve stream habitat, and record specific data for monitoring purposes.

All the Ranger Districts have extensive public involvement such as presentations to schools, outreach (scooping) during project planning, coordination of volunteer projects and so on.

Emerging Issues	Have changes in agency management activities resulted in unforseen issues that the ARNF and PNG need to address? How were needed changes determined and what recommendations or solutions did the public [or ARP personnel] offer?

RECREATION

Ongoing or Emerging Issues

- The "300 foot rule" allows motorized use 300 feet off any designated Forest Road for dispersed camping purposes. Some forest visitors have been extending unauthorized roads beyond the 300-foot limit causing a cumulative creation of new unclassified roads where none were planned.. This has created sanitation and erosion problems, and also creates confusion resulting in users not knowing where the travel route legally ends.

- Renewed emphasis in inventory and data management (INFRA database) of Developed Recreation Sites, Trails, Wilderness Areas and General Forest Areas, as well as real property inventories for all Recreation Facility assets has created a higher than expected workload and cost to the agency, both in terms of dollars and opportunity cost of not doing other necessary work.
- The Recreation Fee Demo (RFD) program brought some positive effects to the public, as described above, but it also created some negative issues. A small but very vocal segment of the public has used the program as a poster child for protesting fees, government management authority over public lands, taxes, and general fairness issues. Internally, lack of permanent authority has created uncertainty of the future for investment in personnel & infrastructure, commitment, support, etc.
- The Forest Service Regional Office commitments made through Memorandum of Understanding (MOU) with groups like the Continental Divide Trail Alliance and the Colorado Fourteeners Initiative establish partner expectations for funding, planning, and project implementation that the Forest or Districts may or may not be capable of upholding. Certain negotiation aspects are outside local control and we are faced with timing issues, funding issues and issues of other higher priority work which often conflict with partner expectations.

Recommendations

- The "300 foot rule" stated on the Forest Map needs to be re-evaluated on a regional basis.
- Capacity issues, in some areas, need to be addressed.
- Travel management planning and decision-making needs to occur.
- The new Scenery Management System needs to be amended into the Forest Plan and officially supersede the Visual Quality Management System.
- Additional Wilderness management elements need to be attained as well as additional Wilderness areas managed to standard.
- Special-use permits need to be administered to minimum standards, and more need to be administered fully.
- INFRA databases for Wilderness, Developed Recreation and Trails should be fully populated and operating at a functional level. INFRA for General Forest Areas will most likely be in some phase of implementation.

- More "field presence" is needed to educate the public and enforce regulations. The Forest Service "field presence" personnel should have training to be certified as Forest Protection Officers.
- James Peak Wilderness issues and obligations need to be met.

TRAVEL MANAGEMENT

Ongoing or Emerging Issues

- Hazardous fuels reduction projects and wildfires can open up forest stands and facilitate motorized vehicle access to areas previously inaccessible due to the dense nature of the pre-burned or pre-thinned stands. When appropriate, travel management effects from thinning and other fuels reduction prescriptions need to be fully considered in the environmental analysis for hazardous fuels reduction projects. Recreation/ transportation monitoring after completing hazardous fuels reduction projects or wildfires is necessary to ensure that the increased access caused by the opening of forest stands are mitigated.
- The cost and time to complete travel management planning is higher than expected. This is due to the high levels of public interest and opposing viewpoints on what type and how much of a travel system is needed to serve public and administrative needs. Concern is developing about meeting Forest Plan objectives due to higher planning costs and having to "re-close" previously closed roads and trails. Many new travel routes are being established through "social" use and illegal travel activities. In some instances, users are constructing trails and then coming to the forest and asking that the forest add the new trails to our "system" and demanding that we maintain the trails. Many times, these requests are the first we know of the "new" facilities. . The increasing cost of planning is diverting funding from on-the-ground transportation system improvement, maintenance and decommissioning.
- New national performance measures are being developed that will be better indicators of transportation system management. The measures may result in new or different method of travel/transportation management.
- The Forest Service has declared itself a public road agency and is taking steps to identify previous non-public roads as public. The Public Forest Service Road program will have a significant affect on the management of the Forest and Grassland roaded transportation system.
- Upkeep of transportation system inventory information, including needed, planned and accomplished annual and deferred maintenance will require more time and effort. National deferred maintenance protocols require inventory and deferred maintenance surveys be performed on 20% of all inventoried roads each year (100% in 6 years). The cost of surveys and data management will take funding from on-the-ground maintenance activities.

Recommendations

- Include mitigation measures in any NEPA decisions, which include travel management decisions or when there is increased access caused by the opening of forest stands by hazardous fuels treatments and provide sufficient mitigation funding by the project.
- Continue to follow the Roads Analysis Process (RAP) for travel management recommendations.
- The Forest Plan made a commitment to transportation planning. Forest management should make transportation planning a priority to complete. On a forest- and grassland-wide basis,

prioritize the areas, which will address travel management in association with landscape analysis or on broad project areas. Incorporate travel management planning and the RAP process with other area or project level assessments and analyses for efficient utilization of limited funding. Proceed with planning and implementation based on those priorities.

- Continue to improve relationships with volunteer groups and aggressively seek out challenge cost share projects.
- Establish road and trail signing protocols and coordinate consistency across Ranger Districts.
- Fully sign that roads and trails to minimize public confusion, which can at times lead to creation of unclassified roads.
- For roads that are decommissioned, an explanation of why this is necessary should be clearly displayed in the field to help deter future trespass.
- Minimize illegal use through expanded law enforcement and field presence. There is need for aggressive law enforcement and follow up on the districts where the transportation system is being actively signed and managed. The "closed unless designated open" regulation should be actively enforced.
- Work with the public and adjacent landowners to inform them of ARP travel regulations.
- Establish a method to more adequately plan and track accomplishments and utilization of funds allocated for "ongoing" activities. This might be accomplished by consolidating Forest travel management oversight (objectives, emphasis areas, budget, workload analysis, and staffing recommendations) into a 3-person core team of representatives from Recreation, Engineering and Ecosystems Support.

WILDFIRE/HAZARDOUS FUELS TREATMENT

Ongoing and Emerging Issues

- There are many management issues related to the interweaving of public land and private property. This public land/private property intermixing is commonly known as the Wildland-Urban Interface (WUI). One of the most public issues is the danger of wildfires. Since 2000 three of the largest wildfires for recorded ARP wildfire history have occurred. The sizes of these fires can be related to the severe drought and the increased build-up of dead, woody material (hazardous fuels) in the forested ecosystems. The high losses of personnel property is due to the increasing inroads into these forested environments by private landowners and mountain communities.

Recommendations

- Congress has recognized this problem through increased funding and the ARP's hazardous fuels treatment program has expanded with the objective of reducing hazardous fuels; in the WUI, around domestic water supplies and watersheds, and to protect threatened and endangered wildlife/plant species. The ARP should continue all efforts to work with our neighbors (private property owners and public agencies) towards achieving reductions of hazardous fuels. Emphasis on the National Forest Plan and the Front Range Fuels Treatment Partnership should continue.

WATERSHED

Ongoing and Emerging Issues

- Meeting the needs for instream flows on streams in the Forest continues to be an issue. Increased interest in additional water development in response to the continuing drought has the potential to push this issue to the forefront. There continues to be tension concerning State and Federal authorities with regard to water development on Forest lands.
- Off-highway vehicle use, including mountain bikes, continues to increase. Unauthorized travel is a continuing source of watershed damage that continues to grow. Recreational use of designated roads and trails increases the controversy of travel management and can limit our ability to decommission and obliterate roads and trails for resource protection and recovery.
- The anticipated continuing increase in land area treated to reduce fuels could lead to cumulative watershed impacts. The cumulative impact could increase as treated areas are retreated in the future to maintain acceptable fuels profiles.

Recommendations

- Continue to seek innovative methods of providing for municipal and agricultural water supply while fulfilling our responsibility to provide for streamflow for Forest uses.
- Additional research is needed to provide tools to better quantify instream flow needs.
- Explore ways to provide for desirable OHV recreational experiences while protecting resources. Determine whether developed OHV trail systems such as the Stillwater OHV area have applicability elsewhere on the Forest.
- Explore methods for better analyzing, disclosing and mitigating the cumulative watershed impacts of landscape scale vegetation management, and for comparing the risks of no treatment alternatives with regard to wildfire with the impacts of fuels treatment.

SOILS

Ongoing or Emerging Issues

- There have been some substantial impacts to smaller fen/wetland habitat areas in various projects.
- The practice of burying slash in open pits, without proper topsoil salvage or restoration plans may be an unacceptable soil impact.
- Soil quality monitoring transects on timber sales have indicated that conventional harvesting and site preparation techniques may cause detrimental soil compaction exceeding the Forest Plan standard of 15%. Harvest and site prep activities using feller bunchers and dozers for machine trampling on frozen soils and/or wet soils may be resulting in excessive detrimental soil impact, primarily compaction and loss of organic matter. Operations on the some units (primarily winter operations) appear to have resulted in significant displacement, compaction and erosion. Harvest on wet soils in some clear cut units have resulted in excessive compaction.

- Lead testing in shooting areas confirms extremely high levels of lead in soil and water samples. Active management of recreational shooting areas on the Forest should be discussed, particularly for areas like Coal on the PNG and Left Hand Canyon on BRD.
- Riparian areas and wetlands are inconsistently being marked on the ground with sufficient buffers (or any buffers), nor are they identified on maps for some timber sales.

Recommendations

- Replace the monitoring question concerning "Ecological Land Units" (Table 4.2 of the Forest Plan, p. 395) with something more related to soil health across the forest. This question and objective #6 (Forest Plan, p. 5) has no methodology for assessing a baseline condition of ecological units, let alone whether we are moving towards this goal. Something needs to substituted that can be measured. The recommendation at this point is that the ARP institute a forestwide Water Conservation Practices (WCP) implementation monitoring program, with random sampling of various activities. The objective would be to improve implementation of WCP's and Regional Soil Quality Standards.
- Use/develop standard protocols for soil quality monitoring. Work with regional office personnel if necessary to ensure protocols used are acceptable, develop forms as necessary to aid in field data collection.
- Develop a database or if possible utilize NRIS Terra to store monitoring data.
- Project planning, implementation and resource management should focus more attention on fen/wetland habitats.
- Work with district personnel responsible for project implementation and help them recognize soil/water resource issues and develop good working relations so that they involve resource specialists as needed when implementation problems arise.
- Collect additional monitoring data to determine the significance of site preparation technique effects on soils. Review the application and applicability of the 15% standard to assure that it is appropriate. Develop mitigation measures to avoid and/or mitigate detrimental soil compaction.
- Mitigation measures should be planned as part of the KV
- Harvest operations on wet soils should be discontinued.

AIR

Ongoing or Emerging Issues

- Nitrogen deposition due to human-caused emissions may be of concern to higher elevation ecosystems.
- Increased smoke emissions from prescribed and wildfire could affect sensitive receptors and Class 1 areas on and off the Forest.

Recommendations

- Continue with synoptic lake sampling program and possibly modify sampling protocols to achieve a more cost-effective methodology.
- Continue to work with the Forest Service Regional and Washington offices air specialists and other agencies to change management if necessary in order to protect Class I airsheds on the ARP.
- Continue to work with NRIS Air Module Developers to incorporate data needs for smoke and emissions tracking in addition to migrating existing water quality data sets.

WILDLIFE/BOTANY

Old Growth Ongoing or Emerging Issues

- Knowledge and use of Forest Plan old growth direction was lacking in some project planning and implementation. Some planning/implementation teams had not sought direction in the Forest Plan, or followed basic planning steps in proper sequence.

Old Growth Recommendation

- This issue was corrected by informing the planning teams of the problem. However, it is always necessary that awareness and application of Forest Plan old growth direction should become a primary objective in any forest treatment project, during both planning and implementation.

Databases Ongoing or Emerging Issues

- Basic inventory data are needed to adequately manage and monitor almost all resources within the ARP. Assuring reliable data and updates is necessary for Forest Plan implementation. Currently, resource condition data updates are not adequate to ascertain whether expected Forest Plan outputs and effects are on track. Forestland and grassland structural stages and roads/trails databases (as well as other databases) are not reflecting existing condition, which makes quantifiable comparisons of habitat effects on wildlife difficult (if not impossible) to determine.

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Databases Recommendation

- Updating of basic resource databases should be a priority in the next few years to meet Forest Plan commitments by year 10. For example, once databases updates are complete, the mandatory comparisons of MIS population trends with habitat conditions will be possible.

Biological Diversity Ongoing or Emerging Issues

- Opportunities, including working with partners, restoring riparian areas, and better/increased access management in TES habitat have not been fully implemented.

Biological Diversity Recommendation

- Given the high emphasis for biological diversity committed to in the Forest Plan, increased effort in this area should occur.

Travel Management Ongoing or Emerging Issues

- Off-road vehicle use is increasing and unconstrained in sensitive areas on the ARP.

Travel Management Recommendation

- Increase emphasis on travel management planning and implementation, which will enable better management/protection of wildlife and TES. This will include updating roads/trails databases and will also enable the public to better assist as stewards of the land by having a well-planned, well-signed and well-managed travel system.

LAW ENFORCEMENT/FIELD PRESENCE

Ongoing or Emerging Issues

- Funding allows one law enforcement officer for every 700,000 acres. On average each officer covers 850 incidents per year. Many more incidents are occurring that are going unrecorded and are not prosecuted due to lack of adequate coverage.
- In the past when out in the field, Forest Service personnel would greatly supplement the law enforcement staff by monitoring regulations, talking to the public, and reporting incidents. Due to a reduction in workforce, office requirements, and a lack of Forest Protection Officer training, this important monitoring is occurring at much reduced levels. For example there is limited ability to enforce travel management direction across the ARP due to the lack of field presence (seasonal and permanent employees).
- In an era of tight budgets and personnel downsizing, there is an increased dependence on volunteers to meet program needs. While these people do an excellent job, they lack the authority to enforce regulations. Another example is contracting with a concessionaire to manage Forest Service campgrounds rather than Forest Service employees interacting with campers.

Recommendations

- Minimize illegal use through expanded law enforcement and field presence. There is a need for follow-up on the districts where the transportation system is being actively signed and management. The “closed unless designated open: regulation should be actively enforced.
- When out in the field Forest Service personnel need to reestablish their law enforcement responsibilities attitude such as talking to the public and recording incidents. Currently the fire organization has the person-power and can be an excellent resource for field presence by enforcing forest regulations as well as fire regulations. Taking Forest Protection Officer training and carrying an incident book in their gear can accomplish this.
- There needs to be adequate funding and personnel to accomplish the lands related part of conflict free boundaries with regards to trespass, encroachment, small tracts, rights-of-way, and land exchange.

LANDS

Ongoing or Emerging Issues

- Funding issues continue to be a factor in meeting Forest Plan objectives for conflict free boundaries.
- The organizaton of the Lands Service Team did not produce the results expected. Reorganization back to the district level will improve customer service and provide consistency on our business management practices related to lands and realty work. Numerous internal processing improvements made by the team will continue to be used.
- The utilization of a Zone Boundary and Title Management team has been a way to accomplish increased targets and support to other functions relative to the level of funding.
- On the horizon is the implementation of cost recovery regulations. Cost recovery is the assessment and collection of administrative fees from applicants and holders to pay for administrative costs incurred by the Forest Service in processing an application and monitoring a special use for compliance with the terms and conditions of an authorization. The fees collected will be retained at the forest level.
- There are significant additional miles of boundary survey and rights-of-ways needed in support of the National Fire Plan (NFP) and Front Range Fuels Treatment Partnership. How this will be funded while maintaining normal Lands programs will be a challenge.
- Increased accomplishments in survey in support of the NFP will create additional opportunities and needs to resolve encroachments, Small Tracts Act (STA) cases and boundary disputes.
- With the increased population, the demands for recreation and quality of life, the Forests and Grassland are experiencing increasing problems of trespass, encroachment and loss of access by the Public.
- The easy cases for acquisition, exchange and STA have been completed. Casework is becoming more complex and time consuming. High accomplishment numbers during the past ten years may not be met in future years.
- Performance measures are being developed that will more accurately describe accomplishments in program areas. Forest Plan objectives and the S-Tables may have to be revised to reflect these new national performance indicators.

Recommendations

- Surveying and location of boundary lines is only a part of the solution, there needs to be adequate funding and personnel to accomplish the lands related part of conflict free boundaries with regards to trespass, encroachment, small tracts, rights-of-way and land exchange.
- Revise the outputs in Table 1.6 for *NFS Lands Without Adequate Access* to something that can be more easily measured without extensive GIS analysis.
- The S-Tables need to be updated to reflect BFES and MAR outputs so measurements of progress can be coordinated with national reporting requirements.
- Discrepancies between Plan Objectives and outputs in S-Tables need to be resolved.
- Boundary Management - The S-Table should show base as 30.0 miles of new, 3.0 miles maintenance; Experienced as 40.0 miles of new, 8.0 miles maintenance and Full as 50.0 miles of new and 10.0 miles of maintenance.
- Review the proposed outputs in Plan Objectives and S-Tables to ensure that the proposed outputs recognize the complexity of land ownership on the front range, particularly BRD and CCRD.

- Continue to emphasize elimination of the special use and STA backlogs.
- Use the new 36 CFR 251 regulations to eliminate inappropriate proposals before large amounts of time are spent analyzing permit applications.
- Continue to require proponent financing until cost recovery regulations are in place.
- In order to fully support the increasing Boundary and Title Management workload, the vacant Forest Cadastral Surveyor position should be filled at a journeyman level.

HERITAGE RESOURCES

Ongoing or Emerging Issues:

- An important emerging issue related to our heritage compliance continues to be the new implementing regulations for the NHPA, 36CFR Part 800. These new regulations greatly expand the Forest's requirements to seek out and involve Indian Tribes and interested parties during project planning and analysis. While we are still working to interpret the new regulations, they have already changed the way that we do business. Generally, they are much more rigorous than the old regulations, and require extensive documentation showing potential appellants that we have followed the process to the best of our ability. One of the more evident changes is the requirement to consult with Certified Local Governments (CLGs) on our compliance projects. This has required the addition of a third compliance report (NEPA Specialist report, 106 Compliance Report and a modified NEPA Specialist report for the CLG). More Governmental entities are becoming CLGs, at this time CLGs associated with the Forest include the cities of Boulder, Central City, Fort Collins, George Town, Idaho Springs, and Boulder County. Because Boulder County is a CLG all projects on the Boulder Ranger District must have additional consultation with the Boulder County Historic Preservation Advisory Board that is very labor intensive and requires additional Heritage staff time. As more counties become CLGs the workload for the heritage staff will increase for the entire Forest.
- Compliance work is currently being accomplished on *most* projects in a timely fashion. However, there have been instances when NEPA decisions have been signed by the Line Officer without the completion of the Section 106 process.
- Lack of reliable and easily accessible baseline heritage data continues to be a nagging problem that hampers the efficient execution of compliance work. In order to help establish accurate baseline heritage data, and to more effectively and efficiently accomplish our compliance obligations, we have been working to move all of the Forests and Grassland heritage site and survey data into GIS layers.
- There are no goals, objectives, standards or guidelines for the heritage resource. Law dictates much of what guides the work done in this area. However, laws do not cover all aspects of the heritage resource program and it is left up to the individual line officer to decide what work will be done.
- Funding for project monitoring has not focused on the heritage resource, thus, it has not been determined how well mitigation direction is being followed as stated in the project NEPA documents.

Recommendations

- The heritage staff should be fully integrated into the NEPA process on large projects, and on smaller projects should be involved much earlier in the planning stages to ensure Section 106 compliance has been completed before NEPA decisions are signed.
- Continue to seek out new and effective ways (e.g., Challenge Cost Share Agreements, university partnerships, volunteers, grants) to fund heritage resource program activities in an era of flat and declining budgets.
- Provide adequate project funding to do full implementation monitoring.
- Continue to enter data into the GIS Heritage Layers and INFRA Heritage Database.

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)

Ongoing or Emerging Issues

- Mitigation measures are not developed in an interdisciplinary fashion leading to project implementation difficulties due to conflicts between these mitigation measures.
- Mapping needs and database management (GIS) is proving to be a roadblock in moving planning projects through the NEPA process and then to implementation.
- Implementation does not always follow the NEPA decision.
- A streamlined NEPA process (only for Categorical Exclusions) to reduce the backlog cases for special-use permits was developed and is being utilized and appears to be working.
- Travel management decisions are lagging compared to its emphasis in the Forest Plan. Some of the possible reasons for this may be lack of funding, other priorities, and the difficulty of decisions with polarized publics.

Recommendations

- Interdisciplinary Teams (IDTs) should have a meeting to discussion mitigations each team member has developed to have a truly interdisciplinary process. This meeting should lead to one unified list of mitigations per alternative.
- Some of the GIS roadblock is being relieved by the placement of GIS specialists on most of the Ranger Districts. However, technology transfer (training) is lacking, which would improve understanding and utilization of the ARP corporate databases to all project planning specialists and land managers.
- Project interdisciplinary team members should review project sites during project implementation to ensure mitigation measures are carried out. This will also require mitigation funding be included in the project implementation.
- Continue to monitor the streamlined NEPA process.
- Consider developing transportation planning team(s) similar to fuels planning teams.

FOREST PLANNING

Recommendations

Complete Forest Plan Amendments

- Revise the Management Indicator Species List
- Incorporate the Williams Fork Area into the Forest Plan
- Incorporate James Peak Wilderness/Protection Area legislation changes into the Forest Plan
- Replace the Visual Management System with the Scenery Management System in the Forest Plan

LIST OF PREPARERS

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List of Acronyms

ADA: Americans with Disabilities Act
ANRA: Arapaho National Recreation Area
ARNF: Arapaho and Roosevelt National Forests
ARP: Arapaho and Roosevelt National Forests and Pawnee National Grassland
ATV: All terrain vehicle
BFES: Budget Formulation and Execution System
BLM: Bureau of Land Management
BRD: Boulder Ranger District
CCRD: Clear Creek Ranger District
CDOT: Colorado Department of Transportation
CDOW: Colorado Division of Wildlife
CFR: Code of Federal Regulations
CLG: Certified Local Government
CLRD: Canyon Lakes Ranger District
CO: Colorado
EA: Environmental Assessment
EIS: Environmental Impact Statement
FP: Forest Plan
FPO: Forest Protection Officer
GIS: Geographic Information System
IDT: Interdisciplinary Team
KV: Knutson-Vandenberg
MAR: Management Attainment Report
MIS: Management Indicator Species
MOU: Memorandum of Understanding
NEPA: National Environmental Policy Act
NFMA: National Forest Management Act
NFP: National Fire Plan
NRIS: National Resource Information System
OHV: Off-highway Vehicle
PNG: Pawnee National Grassland
RAP: Roads Analysis Process
RFD: Recreation Fee Demo
SIA: Special Interest Area
STA: Small Tracts Act
TES: Threatened, Endangered, Sensitive Wildlife or Plant Species
VIS: Visitor Information Services