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 2008

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Forest Certification

The 1997 Revision of the Land and Resource Management Plan (Forest Plan) 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 eleventh season of implementing plan goals and objectives. Lessons learned from these eleven years of monitoring and evaluation point how to better conduct interdisciplinary resource management and monitoring and evaluation of plan implementation by Forest and Grassland personnel. Monitoring and evaluation carried out by the Monitoring and Evaluation Team has resulted in no significant problems or reasons for change to the Revised Forest Management Plan at this time.

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Introduction

Location and History:
The Arapaho and Roosevelt National Forests (ARNF) include 1.9 million acres of public land 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 the 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 214,000 acres of primarily short-grass prairie in two units located approximately 30 miles east of Fort Collins, Colorado. Elevations range from 4,300' on the prairie to 5,500' at the summit of the Pawnee Buttes.

The Pawnee National Grassland was transferred to the US 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.

Eleven 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 eleven years, staffing was reduced and projects were not implemented. The Forest Plan was optimistic in its funding predictions and, therefore, predictions for program objectives (Chapter 1, Forest Plan) were 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, more acreage of wildlife habitat improvement has occurred than funding would have allowed. In addition, the wildlife program, as have other programs, has been successful in increasing funds through both internal and external partnerships.

The Forest Plan was overly optimistic in predicting future Recreation budgets (Base, Experienced or Full) as shown in the S-Tables. Funding has come to the Forest that has gone to accomplishing other priorities than the Forest Plan stated objectives on pages 7 and 8. However, there are many accomplishments in the recreation program since the 1997 Revised Forest Plan was approved. In 2000 the first round of National Visitor Use Monitoring surveys conducted by the Forest Service resulted in the ARP being the second most visited National Forests and Grassland in the country at 6.2 million visits. Another survey was

conducted in 2005 and the next survey for the ARP is scheduled to begin in Fiscal Year 2010 (FY 2010). The latest compilation of 2000 and 2005 data show that the ARP is still in the top 3 of the most visited National Forests in the country.

Developed recreation has been somewhat invigorated through the Capital Investment Program since 1998. The most recent of the ARP's developed sites to have been reconstructed to bring them up to the standard our camping visitors expect include: Sunset, Willow Creek, West Lake and Dowdy Campgrounds; West Lake Fishing and Dowdy Day Use Areas; and Lions Gulch, Hewlett Gulch, and Berthoud Pass Trailheads. In addition, a Recreation Facility Analysis was completed in 2007, enabling the ARP to align management of facilities with expected budget levels and to reduce costs by eliminating little-used recreation facilities and focus appropriated and other funds toward reducing deferred maintenance.

The ARP campground concessionaire permit is working well and the operation of our 49 campgrounds is running fairly smoothly. Recreation fee collections through the Federal Lands Recreation Enhancement Act of 2004 (REA) allow the ARP to sustain and enhance our more heavily used recreation areas such as Mt. Evans and the Arapaho National Recreation Area. We are able to maintain these areas to high standards and expand interpretation and education programs through partnerships and fee collections. The Dos Chappell Nature Center along the Mt. Evans Road was completed in 2006 and provides the public key information about the surrounding fragile environment as well as provides a top quality interpretive and recreation experience at that destination. In addition, recreation standard amenity fees at the Brainard Lake Recreation Area on the Boulder Ranger District help offset costs of managing the parking areas, cleaning and pumping the toilets, cleaning and trash service for the picnic areas, and information booth staffing and some limited trail maintenance for the Mitchell Lake and Long Lake Trailheads. In addition, a new recreation management/development plan for the Brainard Lake Recreation Area was completed in 2005 and is now being implemented.

Managing the scenery resource on the Forests during the past eleven years has been a challenge due in large part to the effects of the mountain pine beetle infestation of mainly our lodgepole pine forests. Extraordinary widespread mortality of the mature lodgepole pine forest began several years ago on the west side of the Continental Divide and has moved onto the eastern side of the Divide in recent years. As a result, the existing condition of the scenery resource in many areas of the ARNF has become incongruous with the Scenic Integrity Objectives described in the Forest Plan. Management activities designed to protect or improve forest health, or reduce or mitigate the potential for large-scale, high-intensity, wildland fire or to protect the safety of forest visitors, have created noticeable changes to the scenic landscape. And though the management activity-induced changes to the scenery have not always been met with immediate support from the public, these changes have been consistent with management direction provided in the Forest Plan.

The National Fire Plan approval in 2000 led to increased awareness of the increasing wildfire risk to communities and support infrastructure including power lines and water supply. In 2002, the ARP joined with the Pike National Forest, the Colorado State Forest Service, the Forest Service Rocky Mountain Region, and the Forest Service Rocky Mountain Research Station to form the Front Range Fuels Treatment Partnership. The goals of the partnership are to reduce hazardous fuels and restore ecosystem health. In 2004, the partnership in concert with other interested parties helped create the Front Range Fuels Treatment Partnership Roundtable. The Roundtable is a diverse group of stakeholders that strive to build consensus to reduce the risk of wildland fire to communities and to restore lower montane forests. Through increased public and congressional awareness, the ARP is receiving increased 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. Our ranger district personnel are actively working with local communities, county and state governments to plan treatment projects in potential hazardous fuels

areas. In Fiscal Year 2008 (Oct 1, 2007 - September 30, 2008) the ARP treated over 17,900 acres of hazardous fuels including both Forests and the Grassland.

Mountain pine beetle (MPB) populations began increasing west of the Continental Divide (a.k.a. Divide) on the Sulphur Ranger District in the late 1990s. MPB populations reached epidemic levels within the Sulphur Ranger District in the period from 2001 to 2003 and have continued to exist at epidemic levels. In 2007 MPB began occurring in larger numbers east of the Divide. By 2008, populations had reached epidemic levels in a number of areas east of the Divide. The ARP has joined with the Colorado Bark Beetle Cooperative and Northern Front Range Mountain Pine Beetle Working Group to collaboratively address issues that have arisen from tree mortality associated with the MPB epidemic. Hazard trees along roads, trails, power lines, and in campgrounds are an increasing issue. Timber harvest has been as important tool in addressing these issues. The timber program was able to offer and sell almost 1,350 acres of timber in FY 2008. There was a continuation of accelerated harvest on the Sulphur Ranger District to address mortality created by mountain pine beetles.

Approximately 355 acres of timber stand improvement was accomplished in FY 2008. This is below the maximum Forest Plan objective of approximately 700 acres per year. However, thinning has occurred in many acres of older stands to reduce hazardous fuels. Thinning in these older stands amounted to 770 acres. In many cases this activity improves the stand as well. In stands of lodgepole pine and spruce fir, thinning has been limited to some extent by the need to protect snowshoe hare habitat in an effort to recover the listed lynx. This may limit forest productivity in the future.

The lands program has met or exceeded most Forest Plan objectives. Applications continue to be submitted for access across FS administered lands, at a rate of approximately 12 per year. Most are requests for access to private parcels on the eastern Rocky Mountain front (east of the Continental Divide), where the land pattern is the most fragmented due to mining claims. The workload has increased over the past 8-10 years, because many banks and mortgage companies are now requiring that sellers and buyers obtain legal access over NFS lands to private properties before a loan can be obtained for the parcel.

For encroachment cases the Forest Plan projected that 378 cases on file would be resolved (at base budget levels) in the 10 year period to 2007. Over the past 11 years, 93 cases have been resolved, but some of these were newly discovered in that 11-year period. On average, 10-12 cases are discovered yearly. Many of those encroachment cases are resolved through removal, authorization or land adjustment. The Forest Plan projected that 10,050 acres of lands would be consolidated through ownership adjustment. In the 11-year period, 10,275 acres were consolidated, mostly through exchange with an additional 13 Small Tract Act cases being completed in 2008.

The Forest Plan projected that for the first 10 years (1998-2007) of Plan implementation, that 64 special use applications which were on file would be processed. For the most part, those have been processed and authorized or rejected due to the 36 Code of Federal Regulations (CFR) 251 screening process. The ARP continues to receive special use applications, some of which can be processed with little time and effort, but many that require extensive environmental analysis (National Environmental Policy Act – NEPA) and several years to bring to conclusion. For special use applications, other than for access across ARP lands, the lands program continues to average processing 35 applications per year including backlog.

Abandoned mines occur throughout the ARP but are especially concentrated on the Boulder and Clear Creek Ranger Districts. In 2008 important progress was made in reducing and rehabilitating physical hazards of abandoned mines. The West Gold Mine safety closure and restoration project is located two miles southwest of Idaho Springs- along Chicago Creek which is a tributary to Clear Creek. This was a

cooperative project involving multiple Forest Service programs: the Colorado Division of Reclamation, Mining and Safety; U.S. Environmental Protection Agency; Clear Creek Watershed Foundation; Historical Society of Idaho Springs; and several private landowners. The primary objectives of the project were to a) remove the physically hazardous deteriorated ore loading bin from the unstable waste rock pile above private property structures, b) stabilize the waste rock pile through the construction of retaining walls and revegetation, and c) reduce erosion of the waste rock pile onto private property and into Chicago Creek. The materials removed from the project site were given to the Idaho Springs Heritage Museum and Visitor Center, which will be used in an interpretive display about the West Gold Mine to educate the public and preserve these pieces of history

The soil, water, and air program experienced dramatic budget reductions for 2008. Because of the reductions, no watershed improvement projects were accomplished with direct soil and water funding. However, projects funded by other resource areas, including the fisheries, range, engineering, and recreation programs accomplished 46 acres of integrated watershed improvement. These projects included: road decommissioning on the Canyon Lakes, Clear Creek and Sulphur Ranger Districts; continuing restoration and travel management in the Left Hand off-highway vehicle (OHV) area on the Boulder Ranger District; and wetland fencing on the Canyon Lakes District. The ongoing work in the Left Hand OHV area has been accomplished cooperatively through the watershed, recreation, and wildlife programs on the ARP. External partners have been essential to the project, and include: OHV user groups; the James Creek Watershed Initiative, who have obtained hundreds of thousands of dollars in grants for restoration; and Wildland Restoration Volunteers, who have provided hundreds of days of volunteer efforts. Fencing of the Bull Pond wetland on the Canyon Lakes Ranger District was accomplished by the range program. Bull Pond is a bulrush wetland. While bulrush is a fairly common wetland species in lower elevation wetlands along the Front Range, it is a rare wetland plant in the higher elevation wetlands. The fencing included a water gap, so that livestock and wildlife could continue to use the pond as a water source while protecting the wetland.

Soil, water, and, air monitoring on the ARP has continued and evolved in response to ongoing and emerging issues. In 2008, a prescribed fire monitoring program was developed and implemented for prescribed fire on the Pawnee National Grassland. In partnership with US Forest Service Rocky Mountain Research Station, a burn-pile mitigation treatment effectiveness study was developed. With support from the Forest Service Regional Office, Rocky Mountain Research, and San Dimas Technology Development and Transfer, a soil disturbance classification monitoring program was implemented on the ARP.

For rangeland management most ranchers were able to run a majority of their permitted cattle numbers. Some ranchers have not yet fully replaced all of their herds sold off in earlier years, taking partial non-use for resource protection. Some ranchers put their cattle on a little later than normal, some took their cattle off earlier. All of these efforts are good examples of proper rangeland vegetation management techniques – reducing livestock commensurate with the level of forage production and water availability, and allowing rangelands to recover from previous drought conditions. Allotments were stocked at about 75% of capacity.

Of the nearly 418,000 acres in 177 active grazing allotments, 80% were administered to standard in 2008. Long-term inventory and analysis efforts have now been completed on all but three allotments. For FY 2008, specific monitoring data were collected for about 47,000 acres. As of the end of the fiscal year, allotment/NEPA planning efforts were completed for 94% of the allotments on the ARP.

The Pawnee National Grassland has utilized prescribed fire to improve mountain plover habitat and reduce hazardous fuels. Over the last 11 years, the Grassland has been considered a world class birding

destination. The Grassland has been diligently working with its range allotment permittees to improve range condition through better cattle distribution and improved grazing systems. The Grassland staff continued to implement the Black-tailed Prairie Dog Management Plan and continued working with private landowners (ranchers/farmers), grazing permittees, the environmental community, and other agencies during implementation. 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 botany program has had significant growth and accomplishments across the ARP. The Forest and Grassland has identified seven Threatened or Endangered plants, about 40 US Forest Service Region 2 Sensitive plants, and about 100 other rare plants or plant communities of local concern that occur on the ARP or that may be otherwise impacted by management activities. When encountered during Forest projects, these species are typically avoided or impacts to them are minimized. Proactive surveys have occurred since 2002 for rare plants and for specialized wetland ecosystems called "fens," which are of high biological value in Colorado and often harbor rare plants. In 2005 and again in 2007, two species of moonworts (primitive fern-like plants), new to science, were discovered on the Forests. One appears restricted at this time to subalpine areas of Colorado, while the other recently has been documented to occur in South Dakota, Wyoming, New Mexico, and Canada. The Forest Botanist is assisting in formally describing these species. A working herbarium housing all of the Forest's plants is planned for completion in 2010.

Noxious weeds are a problem in some areas on the ARP. To move proactively ahead in reducing this problem, a Forest- and Grassland-wide noxious weed management plan was developed. Overall in 2008, about 1300 acres of noxious weeds were treated.

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, building trail bridges and water control structures, counting birds, working in our offices, and ad infinitum; these volunteers provide a tremendous service to the public and helped provide services that would otherwise not have been completed due to limited ARP program budgets. Our volunteers and partners provided approximately 71,245 hours of volunteer work in 2008, valued at $1,330,700.

In 2003 the Chief of the Forest Service identified unmanaged recreation, and specifically OHV use, as one of the 4 major threats to sustainable forest health. As a result, on November 9, 2005 the "Travel Management: Designated Routes and Areas for Motor Vehicle Use Rule" (aka Travel Rule) was finalized in the Federal Register. This rule requires the Forest Service to designate a system of roads, trails, and areas open to motor vehicle use by season and vehicle type. The public has had, and will continue to have, full review of preliminary inventory and maps. This designation is completed via publication of a Motor Vehicle Use Map (MVUM), which will be printed annually and updated as often as necessary. After MVUM's have been printed, it is a violation of Forest Service regulations to use or possess a motor vehicle anywhere not designated on the MVUM.

Several of the ranger districts on the ARP began work on their road/trail inventory in FY07 and continued into FY08. Their actual and projected completion dates are as follows:

Sulphur	September 2007 (completed)
Pawnee	May 2008 (completed)
Canyon Lakes	September 2009
Boulder	December 2009

Forest Closure Order No. UFC-01-06 (Urban Front Country Occupancy & Use, approved on 1-1-07) prohibits "using a motor vehicle off of National Forest system roads except snowmobiles operating on at least six inches of snow." and "using any type of vehicle on any National Forest system road or trail except those vehicles that are allowed by signing on that road and trail." The order also lists, by Ranger District, specific roads and trails closed to motorized vehicle travel, year-round and seasonally. Districts are implementing the above closure order, as well as working on the MVUM and planning for any needed additional closures and opportunities for motorized travel.

Limited recreation management and law enforcement funding have maintained only minimal Forest Service employee presence on the Forests and the Grassland. This puts an undue 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. While 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, some progress was made in our General Forest Areas (GFA) by emphasizing efforts to provide uniformed Forest Service presence in the field during critical high-use periods.

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 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 legally required monitoring per NFMA. This is the eleventh year of the Revised Forest Plan monitoring and evaluation. The monitoring items that will be addressed in this report are only the ones shown as listed ***Annualy*** in the M&E Report column, below, therefore, there are far fewer questions to be addressed of the 11 questions from the table, below. 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 our monitoring activities. 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. 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 2008, almost 7500 acres of natural regeneration have been certified as satisfactorily restocked and 175 acres have been planted. The need for regeneration of forested stands has dropped since 2000. The primary reason for this is that reduced levels of timber harvest in the mid to late 1990s create reduced need for stand

regeneration. It is anticipated that the current mountain pine beetle mortality will increase the need for regeneration activities in the future. Funding regeneration activities that require seedlings grown in nurseries, such as campgrounds, will be a challenge.

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.*

In the late 1990's an increase in mountain pine beetle (MPB) activity in lodgepole pine (LPP) stands was noted in the Williams Fork on the Sulphur Ranger District. In 2000-2001 the MPB began to expand rapidly in the Williams Fork and increased activity was noted on other areas of the District especially near Grand Lake. District personnel began analysis to try to improve the resistance of LPP stands to MPB, reduce hazardous fuels associated with the MPB killed trees and salvage MPB killed trees. In addition the District conducted spraying operations in campgrounds to limit MPB caused mortality of LPP. Mountain pine beetle has also infested ponderosa pine where it is mixed with lodgepole pine stands. By 2007 the MPB epidemic had spread throughout LPP on the Sulphur Ranger District. All efforts to improve resistance to MPB had been unsuccessful. Spraying in campgrounds and other recreation facilities continued to protect most trees; however, it has become apparent that this will not be a long-term solution. It is hypothesized that the length of the epidemic and the high MPB numbers were primarily responsible for the failure of mitigation techniques.

There are approximately 183,000 acres of LPP on the Sulphur Ranger District (SRD). As of 2008 the epidemic has affected all of those acres. It is estimated that approximately 80 percent of the LPP over 4" in diameter have been killed by the MPB on these acres. It is likely that at least 90% of the LPP over 4" in diameter on the District will eventually be killed by MPB.

Mountain pine beetle impacts on the Canyon Lakes Boulder and Clear Creek Ranger Districts east of the Continental Divide continued to increase in 2008, but are not yet as extensive as west of the Divide. However, it appears that the MPB are spreading and over the next 5 years it is anticipated that tree mortality will occur in substantial areas of the LPP stands on these districts.

The mountain pine beetle can also affect limber pine, bristlecone pine and ponderosa pine. Mortality has been observed in these species and as the MPB epidemic moves east of the Continental Divide the acres affected is expected to increase. There has also been some mortality of spruce caused by the high MPB population density west of the divide. Although spruce is not a host for MPB it can be attacked and subsequently killed when no suitable LPP are available.

This MPB epidemic is resulting in an altered age structure of LPP stands on the SRD and now east of the Continental Divide. Initially substantial numbers of LPP snags are created. These snags will slowly rot, generally at the base and the dead trees will fall over in the next 20+ years. The actual rate of snag fall can be influenced by several factors. The regeneration of the forest will also begin. Lodgepole have both serotinous and non-serotinous cones. For seed to be released from serotinous cones a heat source is required. This can either be from a wildland fire or once the trees fall the cones can be sufficiently heated by radiation from the sun on the ground. Therefore, without intervention, reforestation in areas with serotinous cones will occur over time as the trees fall. Lodgepole pine regenerates well after stand

replacement events so it is anticipated that adequate regeneration will occur over time. Timber harvest of the dead trees can speed regeneration by placing the cones near the ground. Also, in areas with existing aspen clone stands, these aspen should be able to expand due to the LPP mortality.

Fire hazard may also be modified to some degree by the mortality caused by the MPB. The year after a tree is attacked by MPB the needles die and turn red. These dead needles do not contain the same level of moisture as do green needles and are more easily ignited by a heat source. The dead needles tend to persist on the trees for several years. Also, not all trees in a stand or watershed are attacked and die at the same time. This is a multi-year event. Therefore, the period of increased flammability can last for a number of years after the initial tree mortalities from MPB. It should be noted that LPP of the size and age being killed by MPB often experiences stand replacing wildland fire. So, it is not that there was not a fire risk prior to the MPB, it is that the effect of the MPB epidemic initially will make it more likely that a stand replacing wildland fire could occur under more moderate conditions. Once the needles fall from a majority of the trees the wildland fire hazard should be reduced for a few years. Then as a majority of the dead trees fall the fire hazard will increase again. Under this situation the type of wildland fire would more likely be a ground fire, which could result in increased damage to soils due to the heavy fuel concentration close to the ground.

Dwarf mistletoe is wide-spread throughout lodgepole pine and ponderosa pine stands on the ARNF. Some removal of dwarf mistletoe infested lodgepole pine trees within timber sale contract areas has been done.

The occurrence of both of these organisms occurs naturally in forested areas and has not been shown to be a result of management activities.

Spruce beetle populations and related mortality continue to increase on Canyon Lakes, Boulder and Clear Creek Ranger Districts. Areas of bark beetle infestations include; the Rawah Wilderness, Buckeye and Tennessee Mountain, Loveland Ski Area, Berthoud Pass, and Peaceful Valley. White pine blister rust was observed for the first time on the Boulder Ranger District in 2005.

The Forest continues to experience a small isolated outbreak of *Ipps* beetle on hazardous fuels reduction projects on the Canyon Lakes Ranger District. The primary area of infestation appears to be adjacent to the Bobcat wildfire.

Comparison Of Projected And Actual Outputs – 36 CFR 219.12(k)1

This CFR requires a quantitative estimate of performance comparing outputs and services with those projected by the Forest Plan.

WILDLIFE:
There has been a downward trend from FY 1998 when 'more-than expected' acres of treated wildlife and Threatened, Endangered or Sensitive species (TES) habitat were accomplished, to FY 2008 when 'near-expected' acres were accomplished relative to budget levels. The following describes aspects that comprise the habitat treatment acres.

- Improved habitat treatments 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 objectives are

adequately designed into hazardous fuels treatments. The ARP has anticipated the increased fuel treatment program well and has correspondingly increased and maintained biology staff to assure favorable outcomes for wildlife.

- Old growth of all conifer types has been largely retained over the past 11 years, except in areas of the MPB epidemic. 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. Since 2002, an average of 7,600 acres of hazardous fuels have been treated. 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 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. However, with the MPB epidemic, old growth lodgepole pine forests may be at risk. There are approximately 183,000 acres of LPP on the Sulphur Ranger District (SRD). As of 2008 the epidemic has affected all of these acres. It is estimated that approximately 80 percent of the LPP over 4" in diameter have been killed by the MPB on these acres. It is likely that at least 90% of the LPP over 4" in diameter on the District will eventually be killed by MPB.
- Mountain pine beetle impacts on the Canyon Lakes, Boulder and Clear Creek Ranger Districts east of the Continental Divide increased in 2008, but are not yet as extensive as west of the Divide. However, it appears that the MPB are spreading and over the next 5 years it is anticipated that tree mortality will occur in substantial areas of the LPP stands on these districts.
- TES habitat improvements have mostly achieved the expected Forest Plan objective of 3 (minimum number of) annual projects per year.
- Riparian/habitat restoration, as well as road closures and obliterations, have increased due to hazardous fuel reduction funding opportunities. Internal partnering with the watershed and soils programs has also increased our capacity to achieve results in these areas.
- Expectations of structural improvements and habitat protection have not been fully realized due to limited funding and other priority habitat treatments.
- Aspen regeneration and reduced conifer encroachment in openings have mostly been realized as expected through design of fuels/timber management projects.

FORESTED RESOURCE:

The Allowable Sale Quantity (ASQ) for the first decade is approximately 67 mmbf (135,000ccf). Timber sold in the first decade was approximately 135,000 ccf. Over 92,000 ccf was sold on the Sulphur Ranger District with over 75,000 ccf of salvage associated with the mountain pine beetle epidemic. Future timber harvest on the Sulphur Ranger District is anticipated to primarily be salvage of lodgepole pine killed by MPB. Once the merchantability of the MPB killed lodgepole pine is reduced the volume sold on this district will diminish substantially. In FY 2008, 21,440 ccf of timber salvage was sold on the Sulphur Ranger District.

Timber volume sold on the Front Range Districts, primarily the Canyon Lakes Ranger District has been at levels below the ASQ. This continued in FY 2008 with approximately 1350 ccf sold. This is primarily due to the low value of timber and current timber market conditions. From 2004 through 2008, sales with

approximately 40,000 ccf of volume were offered, but received no bids on the Canyon Lakes Ranger District. At this time there is no reason to revisit the ASQ.

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. In addition, lack of accomplishments in these areas reflects other higher priorities.

- Recreation Special Uses, Heritage, Interpretation and Visitor Information Services, Landscape/Scenery Management., and Accessibility programs are also subsets of the overall recreation program as are Developed Recreation, Wilderness and General Forest Areas.
- Maintenance activities were not recognized as high importance (no objectives) but new construction, reconstruction, and rehabilitation were. However, funds for new construction are very limited. A lot of the work of the Recreation program involves maintenance, yet it has no Forest Plan connection for tracking these accomplishments.
- 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 has been funded at less than one half of the Forest Plan projections. Yet, the ARP is one of the top three most heavily visited National Forests/Grassland in the Nation.

RANGELAND RESOURCE:

1. Cattle Grazing (thousand AUMs)

Planned and actual livestock use during 2008

	Use (in thousands)	Planned Level	2008 Level	Percent of Planned Level
National Forest				
Active Allotments	**Allotments**	**31**	**31**	**100%**
Cattle Grazing	Head-Months	9.5	6.4	67%
	AUMs	11.4	8.1	71%
National Grassland				
Active Allotments		**146**	**146**	**100%**
Cattle Grazing	Head-Months	60.1	43.5	72%
	AUMs	79.3	57.3	72%
TOTAL NFS				
Total Grazing	Head-Months	69.6	49.9	72%
	AUMs	86.6	65.4	76%

Most ranchers were able to run a majority of their permitted numbers; some did not put on full numbers, taking partial non-use for resource protection. Many cattle had to come off early, especially on the Grasslands, due to very limited and spotty spring/summer rains. Allotments were stocked at about 75% of capacity.

2. Grazing Permits – the Forest Plan projected issuance of 56 livestock grazing permits. The Forest currently has 45 active grazing permits. The Grassland has two Grazing Agreements issued to the two grazing associations, who in turn issue permits to their 87 members; the Pawnee Ranger District also issues 13 direct permits on the Grassland. The number of current term grazing permits issued by all Units is 60.

3. Grazing Allotment Planning

Goal: By the end of 2010, complete environmental analyses on 95 to 100% of National Forest System grazing allotments, and reauthorize grazing permits where consistent with other resource considerations. The following table portrays the cumulative planning efforts (active and vacant allotments) since 1995.

Allotment Management Planning

Area	Total Number of Allotments	Allotments Completed 1995 - 2008	Percentage Completed Through 2008
Forest	52	40	77%
Grassland	146	146	100%
TOTAL	198	186	94%

The remaining twelve allotments are currently scheduled to be completed in 2009 and 2010.

4. Rangeland Vegetation Management

Rangeland vegetation inventory and re-analysis efforts have now been completed on all but 3 (all vacant) of the above 198 allotments, including for all 417,967 NFS acres in the 177 active allotments on the Forest and Grassland.

5. Rangeland Inventories

A total of 32,600 rangeland acres were inventoried and analyzed in 2008 in preparation of allotment/NEPA decisions scheduled for completion for 9 allotments in 2009.

6. Allotments Analyzed and Decisions Implemented

Allotment/NEPA decisions were completed on four allotments in 2008; the decision for Greyrock allotment on the Canyon Lakes Ranger District is under review, and the decision is expected in 2009 instead.

Allotment/NEPA decisions were implemented on 34,718 acres.

7. Allotments Administered to Standard

Allotment Management and Administration

Area	Total Number of Active Allotments	NFS Acres in Active Allotments	Allotment Acres Administered to Standard -- 2008	Percentage Completed in 2008
Forest	31	220,311	190,975	87%
Grassland	146	197,656	141,403	72%
TOTAL	177	417,967	332,378	80%

8. Rangeland Monitored and Evaluated

Rangeland Vegetation Monitoring

Area	Acres with Rangeland Vegetation Objectives	Rangeland Acres Monitored in 2008	Percentage Monitored in 2008
Forest	95,460	26,651	28%
Grassland	196,289	20,045	10%
TOTAL	291,749	46,696	16%

All but 396 acres of the 46,696 acres monitored in 2008 (99.2%) were meeting or moving toward desired vegetation conditions identified in the Forest Plan. Resultant management adjustments will be made for these isolated occurrences for the 2009 season.

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. Again, because this is the eleventh year of Revised Forest Plan monitoring and evaluation, the questions which will be addressed in this report are only the questions with: 1) a *measurement frequency* listed as *annually* or 2) if the *measurement frequency* is listed as either *Annually or As Needed*, then the determination of whether to address the monitoring question in this report will be made by the Monitoring and Evaluation team member, who has program responsibility that the monitoring question references. The determination whether to address the question or not in this report will be based on the meaningfulness the response has on Forest Plan monitoring if reported annually or at another longer timeframe. Therefore, there are eleven topics to be addressed, below, of the 21 topics from Table 4.2.

Biological Diversity, Ecosystem Health, Sustainability

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 annual acres listed in the Forest Plan objectives. Annual accomplishment in FY 2008 was 46 acres. As noted earlier, due to watershed program funding reductions, no projects were accomplished with watershed funding. Instead, watershed improvement was accomplished through projects funded through the engineering, recreation, range and fisheries programs, as well as projects accomplished with cooperators and volunteers. Roads are a significant source of non-point source pollution on the ARP and road decommissioning is an effective means of treatment. Thirty of the 46 acres of watershed improvement were accomplished through road decommissioning, primarily on the Sulphur Ranger District.

Determining the effectiveness of improving State-listed streams is more problematic. The State lists stream segments that are not fully supporting State-designated uses in a biennial report 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 2006 303(d) list, only 6 stream segments that occur on the Forest were listed. On the 2008 303(d) list, the most recent list, 10 stream segments that are located at least partially on the Forest were listed. However, the changes in number of listed streams are mostly an effect of changes in the State's listing criteria as well as increased monitoring by the State to identify impaired streams, rather than significant new sources of pollution emanating from Forest lands. The most common reason for impairment for listed streams on the Forest is metals pollution, often a legacy of historic

mining on the Clear Creek and Boulder Ranger Districts. While the Forest continues efforts to rehabilitate abandoned mine sites and reduce pollution on National Forest System lands, many old mines that serve as pollutant sources are located on patented mining claims, private lands that are inholdings within the Forests. While abandoned mines on Forest lands certainly contribute to metals loading in impaired streams, and reclamation of these mines reduces metals pollution, it is unlikely that the ARP efforts alone will be sufficient to reduce pollution to levels that would cause streams to be de-listed, particularly in watersheds with high concentrations of historic mining activity, such as Fall River or Leavenworth Creek on the Clear Creek District, or Left Hand Creek or Gamble Gulch on the Boulder District.

Various abandoned mine reclamation projects were completed in 2008. One of these the West Gold Mine project had three primary tasks: 1) remove the physically hazardous deteriorated ore loading bin from the unstable waste rock pile, 2) stabilize the waste rock pile through the construction of retaining walls and revegetation, and 3) reduce erosion of the waste rock pile across private property and into Chicago Creek. The West Gold Mine site is located southwest of Idaho Springs along Chicago Creek, which is a tributary to Clear Creek

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 forested acres annually using mechanical and prescribed fire treatments.

The annual average accomplishment for the 11 years of the Forest Plan is almost 4700 acres/year and falls within the Forest Plan stated objective . Planned accomplishments were higher for most fiscal years but were not achieved due to a variety of reasons in some years. Most notable were a moratorium on prescribed burning during a portion of FY 2000, not having suitable weather and fuel conditions to execute prescribed burns in 2003, and the commitment of personnel to fire suppression assignments. However, since 2003 with the development of the Front Range Fuels Treatment Partnership hazardous fuels reduction has averaged almost 8300 high fire hazard acres per year. In FY 2008 almost 11,200 acres were treated on the ARNF.

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. However, the Forest will fund an effort for summer of 2009 to use a National Wilderness Area rapid assessment campsite inventory process to meet the Chief's Wilderness Challenge Element #6.

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 eleven years, the following campgrounds were reconstructed: Ansel Watrous, Narrows, West Lake, Sunset (new), Willow Creek, Stillwater, and Dowdy Lake Campground. Many other individual campsites were brought into standard for disabled accessibility and several 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 and trails in a few developed campgrounds were hardened

The ARP toilet replacement contract has contributed to at least sixteen new toilets across the Forest. Within the past few years the Sunset Boat Ramp and parking facility were reconstructed and the boat ramp was extended twice and a sailboat "gin" pole was installed at the Stillwater Boat Ramp. A new kiosk was installed on Mt. Evans and the Dos Chappell Interpretive Nature Center building was constructed and opened at the Mt. Goliath Natural Area along the Mt. Evans Scenic Byway.

Within the past several years, West Branch, Rawah, Hewlett Gulch and Lower Maxwell Falls Trailheads were rebuilt. A bridge replacement was installed at Buffalo Creek. The Waldrop Trail bridge in the Brainard Lake Area was reconstructed. A new trail bridge designed for four-wheel drive vehicles on Trail Creek Trail, a new bridge on Sunken Bridges Trail, and a new bridge on the Bakerville-Loveland Trail were installed. Twenty-four miles of new Continental Divide Trail, one mile of new trail on the Grays and Torreys Peaks trail were constructed and a rerouted trail on the Chicago Lakes Trail was completed (FY 2005 project). Over the past few years, roadside recreation/travel management kiosks were installed at Stillwater East, Stillwater West, North Supply, Cabin Creek, Young's Gulch and Herman Gulch.

Finally, the ARP Recreation Facility Analysis, part of a national process, was completed in FY 2008, identifying and stratifying top recreation facilities eligible for Recreation Site Improvement funding to maintain and improve key sites, and to identify what level of deferred maintenance exists across all ARP recreation facilities and describe which facilities are potentially not essential to maintain into the future.

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 over the past few years. 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 ARP 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; Brainard Lake Recreation Area, Left Hand Canyon, Lefthand OHV Area, and South Saint Vrain Canyon of the Boulder Ranger District; the Mt. Evans Road corridor, Barbour Forks area 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 and Shadow Mountain Reservoir. 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 designated dispersed campsite boundary.

In addition, in 2005 the Boulder Ranger District completed the Brainard Lake Recreation Management Plan and Environmental Assessment for Brainard Lake Recreation Projects. Implementation design began in 2006 and continues.

The Front Range Sport Shooting Partnership was established in 2007. This Partnership with the ARP as a founding member, has a mission to develop and expand a framework of cooperation among federal, state, and local partners to enhance shooting sports opportunities in a safe and environmentally sound way along the Front Range of Colorado.

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 Area has provided the public with a substantially enhanced recreation experience. The additional funding enabled by the standard amenity recreation fees via the Federal Lands Recreation Enhancement Act of 2004 (REA) has provided for: toilets cleaned to high standards and at greater 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 interpretive and nature center at Mt. Goliath; and other facilities maintained to high standards.

Within the Arapaho National Recreation Area standard amenity fees have provided increased service patrols; interpretive day events for first and fifth graders; boat safety patrols on Lake Granby and Shadow Mountain Lake; cleaned and maintained toilets and trash service in the ANRA picnic areas; and law enforcement patrol in the ANRA for enhanced visitor safety and security. The Christmas Tree special recreation permits 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 has 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 within the past few years. At the Clear Creek Ranger District's Visitor center a new interpretive kiosk was recently built. New wildlife mounts and natural wood furniture for the Sulphur Ranger District visitor center have enhanced the visitor's experience. The Boulder Ranger District Visitor Center has also seen improvement with additional available maps, furniture and information racks. A substantial visitor center was designed and constructed for the Forest Supervisor's Office and the Canyon Lakes Ranger District's new office building. Interpretive displays for recreation trip planning and outdoor safety were created as were maps and displays regarding basic location and orientation.

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. Also, the Forest Campground Concession Permit provides for concession-

managed developed campground (and some picnic areas) operations, maintenance, host staffing, and interpretive programs.

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, visitor contacts at district VIS centers and in the field and interpretive signage for our kiosks and bulletin boards. In addition, the ARP has invested in upgrading and hiring visitor services personnel to increase service to the public.

Finally, the 2005 National Visitor Use Monitoring survey estimates approximately 4.6 million annual visits to the ARP, and relatively few complaints occur each year. The overall estimate is that the ARP is meeting and probably far exceeding our 70% satisfactory recreation experience objective in the Forest Plan.

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 29 miles per year in the eleven 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. Boundary location work is now performed by a mix of service contracts, force account and through agreements with the Bureau of Land Management. The ARP program is managed by a Forest land surveyor who accomplished 30 miles of boundary line identified while maintaining 24 miles in 2008. This exceeds the maximum Forest Plan objective for identifying boundary line.

In most cases land adjustments are multi-year projects. Progress has been made toward Forest Plan Objectives though land adjustment 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. With the emphasis on the fuels reduction program, funding to process complex encroachments is not available. However, easy to resolve encroachments, such as fences, are being removed in conjunction with the fuels projects.

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)

More progress has been made to reduce the special uses backlog in 2008.

Accomplishments in land ownership adjustments made in FY 2008 included:

- Hahn Land Exchange
- Estes Park Administrative Site Conveyance
- York Small Tracts Act Project (includes 14 parcels)
- Northern Colorado Water Conservancy District/BLM/USFS Exchange on the Sulphur Ranger District

Ongoing work in land ownership adjustment for FY 08 included:

- Cervi Land Exchange on the Pawnee District
- Poudre Canyon Land Exchange on the Canyon Lakes District

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 was implemented nationally in FY 06 and is now fully implemented. The ARP anticipates collecting approximately $5000 to $10,000 per year in categories 1-4 (smaller proposals) and $15,000-$25,000 in categories 5-6 (major projects).

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 environmental education programs including presentations to schools and in 2008 the Recreation Program manager worked with Fort Collins Natural Areas Program and Poudre School District representatives to apply for and secure a “More Kids in the Woods” grant to help improve the Poudre School District’s 6th Grade Eco-Week program.

Before any ground-disturbing project can be implemented, NEPA requires analysis of effects on our natural/human environment, and it also requires full involvement by the public during the analysis and decision process. The ARP has over 100 proposed projects that are in the analysis/decision process at any one time. The public is given all opportunities to get involved. The ARP’s Schedule of Proposed Actions (SOPA) lists these proposed projects and provides a contact person for the project. Our publics get involved at that point or later as public notices, newspaper articles, or a direct mailing let them know about the project. This public involvement can include field trips, public meetings, comment periods, and

various other methods. After the project has been approved and implemented, many of the Ranger Districts hold public field trips to review implementation of the project.

Implementing new or updated allotment management plans (AMPs) in order to meet or move toward desired vegetative conditions, including plant composition and vegetation structure guidelines, are important components of the rangeland management program.

A national MOU exists between the Public Lands Council (PLC) and the Forest Service (as well as the BLM) for cooperative rangeland monitoring with grazing permittees. The number of grazing permittees who are assisting in collection of allotment monitoring data is increasing each year. Cooperative Extension Service personnel from Colorado State University as well as Agricultural Research Service (ARS) personnel from the Central Plains Experimental Range are actively involved in conducting training and working with producers.

The Colorado Cattlemen's Association has been instrumental in urging their members to be involved in allotment monitoring efforts and in training and coordination efforts with Forest Service permittees. The Crow Valley Livestock Cooperative (CVLC) and the Pawnee Cooperative Grazing Association (PCGA) on the Grassland have been heavily involved through their Boards of Directors with training their members and in collecting monitoring data on the allotments that they jointly administer with the Forest Service.

Through the initiative and leadership of Pawnee National Grassland personnel, a permittee monitoring school was conducted in June 2008 and was attended by approximately 60 grazing permittees, agency personnel, and other interested community members. In addition to CLVC and PCGA Boards of Directors and members, attendees included FS, NRCS, ARS, and CSU personnel as well as Weld County Extension and West Greeley Conservation District representatives. Another school is being planned for the summer of 2009.

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" currently allows motorized use 300 feet off any designated Forest Road for dispersed camping and other recreational purposes. Some forest visitors have been extending unauthorized roads beyond the 300-foot limit causing a cumulative creation of new unauthorized 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. In addition, enforcement is currently based on adequate road and trail signing in the field and has not proven effective to stop motorized incursions into the National Forest System lands because signs are easily damaged or entirely removed. The national Motor Vehicle Use Maps (MVUM), as they are developed, will help to direct visitors to the designated, legal system of motorized roads and trails.
- 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.

- Prior to December 8, 2004, the Recreation Fee Demo (RFD) program brought some positive effects to the public but it also created some negative issues. Now, since the Federal Lands Recreation Enhancement Act of 2004 (REA), 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.
- The Forest Service commitments made through Memorandum of Understanding (MOU) with groups like the Continental Divide Trail Alliance and the Colorado Fourteeners Initiative can establish partner expectations for funding, planning, and project implementation that the ARP 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.
- Costs of providing safe drinking water that meets State standards and regulations are rising sharply. Microscopic Particulate Analysis testing for all water systems is now on a 3- year cycle and costs between $1,500 - $2,000 each test. Some campgrounds and picnic areas do not collect enough revenue to offset these costs and must be covered by appropriated funding sources
- Carrying capacity determinations for specified recreation areas that are undergoing planning processes are needed to help plan for existing and future human use, especially where there is demand for outfitter and guide services.
- Recreation use in the urban front country is increasing, as are the corresponding impacts and conflicts between users. Urban front country areas need to be assessed for their capacity to provide specified recreational experiences in certain areas and not to provide certain recreation experiences in others. This assessment should then lead to management changes on the ground in the future.
- Epidemic conditions of the mountain pine beetle (MPB) have created very dire conditions in many of our developed site campgrounds and picnic areas. In 2008, the ARP Recreation Program Manager was part of a Region 2 Team to assess impacts of the MPB on developed recreation sites, dispersed and wilderness areas, trails, and special use sites like Ski Areas and Recreation Residences on the Arapaho-Roosevelt National Forests, White River National Forest, and Pike-San Isabel National Forests. The team made recommendations for consistent approach to hazard tree definition, identification and process for mitigation of such widespread impacts in these specified recreation areas.

Recommendations

- The “300 foot rule” stated on the Forest Map has been incorporated into the 2005 Travel Rule, however, the ARP needs to do site-specific decisions in areas of concentrated dispersed use.
- Travel management planning and decision-making needs to occur as the ARP is doing the Motorized Vehicle Use Map for lands in its jurisdiction.
- 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.

- Consider converting some small campgrounds and day-use areas to dry-sites (no developed water system) as circumstances allow and follow through on ARP Recreation Facility Analysis recommendations for decommissioning of certain developed recreation sites.
- Plan to address carrying capacity as part of management planning and/or environmental analysis for recreation areas undergoing some kind of existing planning process or potential planning based on need or demand.
- Assess ARP urban front country areas for their capacity to provide specified recreational experiences and determine what experiences are better provided in other locations on the ARP or on other lands.
- We need to increase protection measures for existing stands of healthy trees in our developed sites and begin vegetation management planning for eventual stand vegetation replacement and in some cases, catastrophic vegetation loss replacement.

TRAVEL MANAGEMENT

Ongoing or Emerging Issues

- 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. The increasing cost of planning is diverting funding from on-the-ground transportation system improvement, maintenance and decommissioning.
- 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. Some liability issues could be associated with these new, illegal facilities.
- Upkeep of transportation system inventory information, including needed, planned and accomplished annual and deferred maintenance will require more time and effort.
- The Forest Service published the Travel Rule in November, 2005. This rule directs that motorized use will be allowed only on designated forest system roads or trails on all National Forest lands as shown on published Motor Vehicle Use Maps for each Ranger District.
- The mountain pine beetle epidemic and related lodgepole pine mortality is creating an extensive need for hazard tree removal along roads on all Ranger Districtds.

Recommendations

- Continue to make the implementation of the Travel Rule an ARP priority.
- Continue to follow the Travel Analysis Process (TAP) for travel management recommendations.
- Continue to improve relationships with volunteer groups and aggressively seek out challenge cost share projects.
- Continue to sign roads and trails for the types of uses allowed.
- For roads that are decommissioned, an explanation of why this was 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 a need for aggressive law enforcement and follow up on the districts where the transportation system is being actively signed and managed and where MVUM's have been published.

- Work with the public and adjacent landowners to inform them of Arapaho and Roosevelt National Forests and Pawnee National Grassland travel regulations.
- Establish a method to more adequately plan and track accomplishments and utilization of funds allocated for "ongoing" activities.
- The Forest and Grassland should make a commitment to transportation planning and facilitate its completion. On an ARP-wide basis, prioritize the areas where the ARP will address travel management in association with landscape analysis or on broad project areas. Incorporate travel management planning and the TAP process with other area or project level assessments and analyses for best efficiency. Proceed with planning and implementation based on those priorities.
- Evaluate Human Uses Objective #6 (Forest Plan, p. 8) for applicability to present National Policy and the transportation needs of the Forest and Grassland. National policy leans more toward decommissioning unauthorized roads than converting them to authorized roads. Decisions should be based on sound TAP procedures.
- Evaluate Human Use Objective #9 (Forest Plan, p. 8) for applicability to present National Policy and the transportation needs of the Forest and Grassland. National Policy leans more toward reconstructing and maintaining our existing transportation system. Most of the areas of the Forest and Grassland in need of open road access already have that access. Decisions should be based on sound TAP procedures.
- Revise Objective output measures to match those of Road Accomplishment Report and INFRA so reportable objective accomplishments and annual accomplishments are measuring the same thing. This will also make monitoring and evaluation reporting easier.
- Assess hazard tree removal along roadsides and develop a plan to address vegetation management treatments

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, four of the largest wildfires for recorded ARP wildfire history have occurred. The sizes of these fires can be related to the severe drought at that time 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.
- The mountain pine beetle epidemic and related lodgepole pine mortality is creating an extensive need for hazardous fuels treatment on all mountain Ranger Districts. Forest Supervisor's hazardous fuels treatment emphasis items include 1) scale of treatments (landscape versus defensible space), 2) watershed versus site specific, and 3) transmission line and infrastructure protection.

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.

- Assess increasing amounts of hazardous fuels and emphasis items while developing plans to address fuels and vegetation management needs.

SCENERY RESOURCE

Emerging Issues

- There were no unforeseen issues which emerged as a result of changes in agency management during FY 2008. Issues pertinent to scenery resource management were foreseen and are related to ongoing agency management (e.g. vegetation management treatments targeting the mountain pine beetle infestation). Looking toward the next fiscal year, issues may arise as the Forest contemplates utilizing tools such as higher intensity and larger scale prescribed burning in mountain pine beetle-killed areas of the forest.

WATERSHED

Ongoing and Emerging Issues

- Meeting the needs for instream flows on streams in the ARNF continues to be an issue. Increased interest in additional water development in response to the expanding urban and intermix populations and the potential for drought, have 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 National Forest System lands. In 2005, the ARP completed a plan amendment to change two standards and one guideline related to streamflow as directed by a discretionary review by the Agriculture Deputy Under Secretary for Natural Resources and Environment.
- Off-highway vehicle and mountain bike use continue 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 and to treat mountain pine beetle killed trees 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 ARP 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 ARP.
- 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.
- Focus implementation on identifying and completing sufficient watershed improvement within priority watersheds so that improvement in watershed condition can be demonstrated. Priority

watersheds, and watershed improvement needs within the watersheds, have been identified for all Ranger Districts on the ARNF, and development of a prioritization method suitable for the Pawnee National Grassland is continuing.
- Assess the increasing amounts of hazardous fuels and develop plans to address fuels reduction to protect watersheds.

SOILS

Ongoing or Emerging Issues

- Monitoring indicated that occasionally design criteria and relevant/recommended watershed conservation practices were not applied in some activity areas. When these are discovered, actions are taken to mitigate effects and to prevent future occurences.
- Monitoring indicates operations on wet soils resulted in compaction and excessive soil disturbance on some activity areas.
- Accumulation of high soil burn severity effects and noxious weed establishment is an ongoing issue on some activity areas, particularly where burn-pile density is high.
- Monitoring indicates operation of heavy equipment involving multiple passes and turns off designated skid trails has created excessive soil disturbance in some activity areas.
- Although these activities are no longer common, site prep activities using dozers and/or rollers for machine trampling and site prep would likely result in excessive detrimental soil impacts. When this activity was common, Forest Plan activity area standards were not met in some project areas.
- Chipping and masticating activities are creating heavy fuel loadings in some activity areas with unknown long-term ecological consequences.

Recommendations

- Continue to work with the Regional Office, the Forest Service Research Branch, and other Soil Scientists to develop standardized and repeatable measures for soil quality and at-risk soils.
- Continue to use the Soil Disturbance Classification Protocol, first applied on the forest in 2008, for soil quality monitoring. Continue to work with regional office personnel to ensure protocols, standards and measures used are acceptable and applicable.
- Continue to work with marking crews, silviculturists, engineers, and CORs on soil/water resource issues and solutions.
- Continue to apply, and possibly incorporate, new and ongoing research projects of Rocky Mountain Research Station personnel and other forests/institutions with ongoing monitoring of management activities on the ARP.
- Continue to restore watershed conditions by re-contouring and de-compacting heavily impacted areas. Where appropriate soil conditions exist, use a winged subsoiler to de-compact landings, skid trails, and roads. A bulldozer with ripping shanks and/or an excavator or backhoe may be a more appropriate tool to recontour and decompact shallow, rocky soils.
- It is recommended that decompaction and revegetation of landings, skid trails and burn piles be implemented during operations before timber sale contracts close out.

AIR

Ongoing or Emerging Issues

- Ambient ozone concentrations during the summers of 2003 and 2004 were exceedingly high at Rocky Mountain National Park and could potentially be affecting human well-being and ecosystems on the Arapaho and Roosevelt National Forests. Currently, parts of the Front Range Air-shed exceed public health standards for ozone.
- Nitrogen deposition due to off-forest, anthropogenic emissions might be detrimentally affecting higher elevation ecosystems.
- Increased smoke emissions from prescribed and wildfire could affect sensitive receptors and Class 1 areas on and off the ARP.

Recommendations

- Continue AQRV and Ozone sampling programs
- Continue to work with the Forest Service Regional, Washington Office, and RMRS air specialists and other agencies (i.e. Rocky Mountain National Park) to change management or modify emission sources off-forest, if necessary to protect Wilderness, Class I areas, and human health on the Forest.
- 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/FISH

Mountain Pine Beetle Epidemic Ongoing Issues On Wildlife And Habitats.

- Loss of mature habitat/old growth will affect wildlife that depend on this type of habitat
- Increased fire danger/wind damage could change wildlife habitat
- Increase in snags/early successional stages affects different wildlife and their habitats. Some wildlife species will be benefited while others will be negatively affected.

Old Growth Emerging Issues

- Given the on-going loss of old growth lodgepole pine due to MPB, there may be a need to re-evaluate all of our existing and future old growth designations and management

Aquatic Nuisance Species Emerging Issue

- Quagga mussle larvae has been found in the three lakes system (Sulphur Ranger District). These are non-native organisms that appear to be spreading throughout the country. These organisms have caused problems in lakes and rivers in the Midwest

Aquatic Nuisance Species Recommendations

- Continue work with the Colorado Division of Wildlife and other partners to limit the potential for spread of these aquatic nuisance species.

Greenback Cutthroat Trout Genetics Emerging Issue

- Recent advances in genetic testing have created uncertainty in the purity of some populations of greenback cutthroat trout. Reconsideration of the purity of several populations on the ARP is being undertaken. The ARP is working with the Recovery team to understand the issue of genetic

purity and to make appropriate decisions regarding the management and protection of these populations.

Noxious Weeds Ongoing or Emerging Issues

- Funding has been flat in recent years for the Forest-wide noxious weed program, and outside funding sources are being increasingly relied upon. As a result, desired program targets are compromised. Additionally, inventory and treatment monitoring program components are minimal. Capacity for desired program accomplishments is expected to remain at decreased levels commensurate with reduced budget.

Fen Ongoing or Emerging Issues

- Fens, which are uncommon specialized wetland ecosystems often harboring rare plants, are being adversely impacted by unauthorized off-road vehicle use, or "mud bogging." Monitoring shows that one fen per year on the ARNF has been severely impacted by such use since 2003. Restoration of one fen has been attempted, but is difficult to achieve, and damage can take hundreds of years to heal. Currently, there is a lack of adequate protection or law enforcement measures to remaining sites across the ARNF. Resource damage to fens are expected to increase.

RANGELAND MANAGEMENT

Ongoing or Emerging Issues

- Dealing with drought in Colorado as well as much of the West continues to occupy a substantial portion of available time for rangeland managers. Drought strategies have been developed. Grazing permittees have been responsive in implementing voluntary reductions and restrictions to be flexible with annual changes in climatic patterns, the forage responses that result, and the need to properly manage rangelands affected by constantly changing conditions.
- There will be extensive changes to rangeland vegetation, livestock grazing patterns, permittee management and practices, and allotments and allotment infrastructure as a result of the mountain pine beetle infestations and resultant tree mortality and deadfall (this is specific to lodgepole pine stands at this point in time) on the ARNF.

  Probable changes/impacts to infrastructure (fences, water sources, access):
  - Trees falling on fences will make many of them useless in livestock control.
  - Removal of wire from fences flattened or buried from jack-straw timber will be difficult or impossible. This may create a future safety hazard.
  - Probable difficulty in accessing some water, dams, and spring developments.
  - Access roads and trails become impassable; safety is a continual concern.
  - Existing cattleguards in road prisms may not be stout enough or wide enough to allow log truck passage. "Side-fence" gates may not be suitable either.

  Probable changes/impacts to livestock management and permittee operations:
  - Routes for permittee management and livestock movement are going to change, sometimes continually – for access, for improvement maintenance, to reach feed and water, for salting, for livestock movements between pastures.
  - How grazing permittees prefer to manage – whether by horse or ATV – may radically change. Livestock husbandry practices may have to be altered.
  - Stocking rates and seasons of use are apt to change dramatically – up or down.

- Cattle are going to go lots of places they've not gone before – fences no longer work, stands of timber or downed timber may be less effective or more effective barriers.
- Increased cases of unauthorized use ("trespass") from private lands as well as permitted livestock moving onto adjacent private lands.

Probable changes/impacts to rangeland vegetation:

- There will be a substantial increase in transitory forage – both in number of acres and in forage production per acre.
- Cattle may not be able to access increased transitory forage, or even traditional use areas; in other cases, they may be able to reach extensive areas previously not accessible.
- Wholly different utilization patterns – and perhaps levels – can be expected.

Conclusions:

Infrastructure (fences, water sources, access):

- Replacing all Forest Service fences will be difficult.

Livestock management and permittee operations:

- All parties will need to adjust and be extremely flexible in management changes on the ground.
- Livestock management issues and complexity will intensify for Line Officers.

Rangeland vegetation:

- Seral stages and species composition on rangelands may change substantially.

Recommendations

- The situations will take many years to resolve. Flexibility, patience, and common sense will be required.
- Seek out any and all avenues for communication, cooperation, and funding.
- Inform permittees that they need to ask – and receive – permission in advance for such issues as felling trees to maintain access routes or improvements.
- Allow the use of native materials whenever possible in fence reconstruction.
- There may be a need to develop a modified policy on permittee non-use.

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.

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. 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 and scheduling of specialists' time continue to be a factor in meeting Forest Plan objectives for the Lands Program.
- One road access litigation case was filed in FY2007. This case has continued in FY 2008. Access across National Forest System land to private land will continue to be an issue.
- 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. The fees collected are retained at the Forest level. The regulations are in place and the ARP did implement cost recovery in FY 2008.
- 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. Increased requests for access to private land and use of NFS land are also associated with the demands.
- Boundary line surveying for fuels reduction projects has discovered encroachments on National Forest System (NFS) lands, which adds to the caseload in the Lands Program. A subdivision on the Canyon Lakes Ranger District was surveyed in 2004 revealing 12 lot encroachments. The ARP is working with the landowners towards a resolution.

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.
- Emphasize processing Alaska National Interest Lands Conservation (ANILCA) access cases to avoid litigation.

- Discrepancies between Forest Plan objectives and outputs in S-Tables need to be resolved.
- Review the proposed outputs in Forest Plan objectives and S-Tables to ensure that the proposed outputs recognize the complexity of land ownership on the front range, particularly on Boulder, Canyon Lakes, and Clear Creek Ranger Districts.
- Continue to emphasize elimination of the special use and Small Tracts Act (STA) backlogs. The Forest did not meet the elimination of backlog by 2007 as stated in Table 1.7 (*Forest Plan*, p. 9).
- Use the new 36 CFR 251 regulations and cost recovery to eliminate inappropriate proposals.
- Use the Lands Program Priorities to help establish a program of work for the district and supervisor offices.

MINERALS

Ongoing or Emerging Issues

- Energy continues to be a National priority. Short timelines to process oil and gas leasing nominations and applications for permit to drill may be a challenge as interest increases on the Grasslands.
- The Canyon Lakes District processed two mineral operations for exploratory diamond mining and anticipates additional plans of operations to be submitted.
- The Forest Service is requiring Mineral Administrator Certification for the locatable and leasable minerals. The certification requires training and approval by the Washington Office. This will require the Forest to change its administration and training opportunities in the minerals program.

Recommendations

- Mineral Administrator Certification: One District staff person is close to being certified.

HERITAGE RESOURCES

Ongoing or Emerging Issues:

- The changing needs for prescribed burning to reduce hazardous fuels is an emerging issue. Due to the Bark Beetle infestation and mortality of mature trees stands across the Forest, there is an increased need for very large prescribed fires to reduce hazardous fuel loads. The timing of the development plans and very early spring implementation of the burns generally does not meet the timing requirements for compliance with Section 106 of the National Historic Preservation Act and 36 CFR Part 800. The Heritage team has addressed this by negotiating a Programmatic Agreement (PA) with the Colorado State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation (ACHP). The agreement allows the Forest to proceed with burns immediately after survey and complete the compliance report and consultation after implementation provided that certain design criteria are met and monitoring after burns is completed.
- The requirements for post implementation report writing, monitoring and samples surveys outside the area of potential effect (burn units) are all new requirements that the Forest needs to complete in order to meet the stipulations in the PA.

Recommendations

- Compliance work is currently being accomplished on most projects in a timely and legal fashion. The heritage staff should be fully integrated into the NEPA process on large projects, and on smaller projects should be involved early in the planning stages.
- 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

- Occasionally, mitigation measures and/or design criteria agreed to and documented in NEPA decisions are not always carried through to contracts and implementation. When these are discovered, actions are taken to mitigate the effects and to avoid future occurrences.

Recommendations

- Continue communication with IDT members, marking crew, and contract administrator. Utilize a cross-walk system to insure all mitigation measures and/or design criteria are included during implementation.
- Perform field reviews during and after implementation

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LIST OF ACRONYMS

ADA: Americans with Disabilities Act
ANILCA: Alaska National Interest Lands Conservation
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
CNHP: Colorado Natural Heritage Program
CO: Colorado
DMS: Days Managed to Standard
EA: Environmental Assessment
EIS: Environmental Impact Statement
FP: Forest Plan
FPO: Forest Protection Officer
GFA: General Forest Area
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
NGO: Non-Governmental Organization
NRIS: National Resource Information System
OHV: Off-highway Vehicle
PNG: Pawnee National Grassland
RAP: Roads Analysis Process
RFD: Recreation Fee Demo
RMBO: Rocky Mountain Bird Observatory
SASEM: Simple Approach to Smoke Estimation Model
SIA: Special Interest Area
SOPA: Schedule of Proposed Actions
STA: Small Tracts Act
TES: Threatened, Endangered, Sensitive Wildlife or Plant Species
VIS: Visitor Information Services