2004 ANNUAL MONITORING AND EVALUATION REPORT

GRAND MESA, UNCOMPAHGRE, AND GUNNISON NATIONAL FORESTS

The *Land and Resource Management Plan* for the Grand Mesa, Uncompahgre, and Gunnison National Forests (the Forest Plan) was adopted in 1983, and underwent significant amendment in 1991. The statutory 15-year period for Forest Plan revision ended in September, 1998. In the intervening years, the resources and people of the Western Slope of Colorado have changed in important ways. Population growth, increases in recreation use, advances in scientific understanding of ecosystems, and new demands for natural resources, are only a few of the important changes and trends affecting the region. The Forest Plan needs to be revised to account for these changes and to reflect our improved understanding of forest plan utility and decisions.

The Forest planning team, as well as many other Forest employees, are developing information and working with the public to move forward with Forest Plan Revision. A Notice of Intent to prepare an EIS for Plan Revision was published in the Federal Register on September 28, 1999. The notice lists preliminary revision topics and discussed the process. The comment period on this notice, indicated as January 31, 2000, has been extended to allow the Forest Service and the public to engage in a comprehensive pre-NEPA collaborative process in the many communities across the Forest. By conducting this collaborative effort upfront, we will focus the revision effort on the plan elements and decisions where improvement is most needed. We intend to summarize the results of this work in geographic area assessments and also in an amended Notice of Intent.

While revision is needed to improve and update the existing Forest Plan, it is my finding that the current standards and guidelines and management prescriptions continue to provide adequate direction to guide management of the Grand Mesa, Uncompahgre, and Gunnison National Forests during the time in which the Plan is being revised.

/s/ Charles S. Richmond _September 22, 2004_

CHARLES S. RICHMOND DATE

Forest Supervisor

INTRODUCTION

MONITORING ACTIVITIES

Monitoring closes the loop between planning and implementation. This report assesses how well we are implementing the Forest Plan, whether Forest Plan direction is effective at achieving management goals, whether implementation of the Forest Plan is achieving the predicted effects, and whether the assumptions made in developing the plan remain valid. Monitoring provides the foundation on which we will build the Forest Plan revision. Monitoring is not a special, one-time, activity or emphasis item. Rather, it is an integral part of every project and manifests itself most successfully in the day-to-day administration and documentation of each project.

Monitoring on this Forest consists of a range of activities. Plan objectives and standards are reviewed as part of NEPA analysis and decision-making. Ongoing projects are reviewed in the field in the context of this continuing awareness. Interaction with the public through contact in the field and in field offices, and through public comment also serves as effective feedback to staff.

The actual preparation of this report consisted of the compilation of respective staff observations for their areas of responsibility.

Monitoring results are reported under three headings: Implementation Monitoring, Effectiveness Monitoring, and Validation Monitoring. These categories and the questions asked and answered are taken directly from the GMUG Monitoring Plan (pages IV- I through IV- 16 of the Forest Plan).

A. Implementation Monitoring

Are projects being implemented in accordance with Forest Plan direction?

1. Outputs and Activities

Are outputs and activities shown in the Forest Plan being accomplished?

In addition to the standards, guidelines, and management prescriptions it establishes, the Forest Plan includes projections of certain outputs and activities as an indicator of the effects of management direction. These projections do not represent Forest Plan decisions or commitments; actual accomplishments reflect the annual appropriations available to the Forest to accomplish needed work. Accomplishments in 2004, as in prior years, were substantially below Forest Plan projections in many areas.

Table I was developed from annual Management Attainment Reports (MAR) for 1991-2000 and Table III- I of the Amended Forest Plan (pages 111-6 through III-8). Many of the outputs reported in MAR are not directly comparable with projections described in the Forest Plan. Table I displays those accomplishments which are comparable between the two.

Table I - Outputs of Goods and Services

Outputs & Services	Units	FY 2004 Accomplishments	FY 1991 - 2004 Avg Annual	Forest Plan Projection
Recreation				
Trail Construction & Reconstruction	Miles	142	24	50
Wilderness				
Wilderness Mgmt	M Acres	555	555	515
Lakes Restored	Acres	7		
Non-Structural Wildlife Improvements	Acres	2181	3440	2,000
Range				
Grazing Use (Livestock)	MAUM	231	N/A	300
Non-Structural Improvements	Acres	1300	1365	2500
Timber				
Conifer Sawtimber	MMBF	1.8	6.2	21.0
Conifer POL	MMBF	0.1	0.6	2.4
Aspen POL	MMBF	0.5	5.4	15.0
Firewood & Other	MMBF	2.2	3.3	7.0
Total Offer	MMBF	4.6	15.5	45.4
Reforestation	Acres	1639	1373	870
Timber Stand Improvements	Acres	297	410	200
Minerals				
Leases and Permits	Operating Plans	100	N/A	189*
Locatable Minerals	Operating Plans	13	N/A	100
Protection				
Fuel Treatment	Acres	11,261	3,673	2,000
Lands				
Land Exchange	Acres	4,934	1,482	240
ROW Acquisitions	Cases	40	N/A	8
Landline Location	Miles	199	18	20
Soils				
Soil/Water Improvements	Acres	40	65	76
Facilities				
Road Construction & Reconstruction	Miles	33	11	61
Revenues				
Returns to Treasury	M	$1,226	N/A	
Costs				
Total Budget	M	$14,513	N/A	

**Increase based on pending lease/license applications*

2. NEPA Compliance

Are NEPA documents in compliance with the Forest Plan? Are the projects being implemented in accordance with the documents

All NEPA documents for which the Forest Supervisor is the responsible official, are reviewed by the Forest Environmental Coordinator prior to approval to ensure compliance with NEPA procedures. Decision documents are reviewed for consistency with the Forest Plan, and deficiencies are corrected prior to approval. The current quarterly Schedule of Proposed Actions lists projects under way in terms of NEPA analysis. Each of these is evaluated in terms of consistency with the Forest Plan at the time of decision (documented either in a Record of Decision, a Decision Notice or a Decision Memo). A positive declaration of conformance with the Plan is required. If such declaration cannot be made the project is not implemented or the Plan is amended.

3. Recreation

Are visual quality objectives being met?

One fuel reduction project was field reviewed in respect to visual implications in 2004. Concerns regarding visuals and impacts in surrounding developed sites and the recreation residence permitted area were actually enhanced with project implementation. This fuel reduction project is completed and monitoring of effects discontinued at the end of 2004.

A Capital Improvement Project to reconstruct Jumbo Campground, Sunset Day Use Area and Beaver Day Use Area continued through 2004. VQOs (Visual Quality Objectives) were studied during project analysis. Monitoring over the life of this project's construction will continue to assure VQOs are being met.

The Williams Creek Campground rehabilitation project was initiated in 2004 to include improved road access, campsite placement and recreation improvements. Continued monitoring of the project and its impacts to visual quality will occur through the life of this project.

No negative public comments have been received concerning visual impacts related to activities on the National Forest.

Are ROS recreation settings being retained?

The monitoring requirement for semi-primitive recreation opportunity is a 10% sample of completed vegetation and ground disturbing projects. No timber sales were reviewed in the field during the year to determine the effects of road construction and timber cutting on the ROS.

Earlier concerns regarding the loss of semi-primitive non-motorized acres have been addressed as a result of the National roadless issue. Generally, most new roads proposed for timber sale areas are closed and/or obliterated after sale closure. Analysis of timber sale proposals usually addresses the need to close excessive existing roads within the timber sale analysis area. This assists in restoring some of the semi-primitive non-motorized opportunities lost in the past.

Discussions throughout the GMUG NF Forest Plan revision process addresses the significance of all ROS classes and their relationship to other proposed activities when defining the future desired condition in an attempt to reduce the loss of any further semi-primitive, non-motorized acres.

We continue to have significant concerns regarding the impact to ROS from the pioneering of routes and access into previously inaccessible areas by ATV's. Lower class trails and what might have been user-created paths are being discovered due in part to the sheer number of recreation users. This is having a significant impact on the character of these areas and is resulting in "ROS creep" towards the more developed/impacted settings of roaded natural and rural and away from the semi-primitive end of the spectrum. The Gunnison Travel Management Plan, the Grand Mesa Travel Plan, and the Uncompahgre Travel Plan addressed this. The Grand Mesa Travel Plan has been in effect for 12 years and has been effective in providing recreation opportunity for all users while substantially reducing the effect described above. The Uncompahgre Travel Plan has been in effect for two years and is making a significant difference. ATV and motorcycle use is being limited to designated routes. Compliance from users is improving, but we are still experiencing intrusions into closed areas by motorized vehicles primarily during the hunting season. The Gunnison Travel decision restricted travel to existing routes, is in its second year of implementation, and has produced similar positive results in terms of reducing the amount of off-route use and new route establishment. Route by route planning for the Gunnison District has yet to be done.

Are the cultural resources being protected?

The Plan standards for protection of cultural resources include: completion of inventory before ground-disturbing activities; avoidance, if possible, to protect all listed or National Register eligible properties either historic or prehistoric; collection of data from sites when there is no other way to protect their values; and issuance of permits to institutions or agencies for research. In addition, sites should be maintained so as to prevent deterioration and damage from natural and human causes.

All ground-disturbing projects receive cultural resource inventories prior to implementation. All heritage resources in a survey area are recorded and eligibility for the National Register of Historic Places is determined. Reports and site records for all projects are sent to the State Historic Preservation Officer (SHPO) for concurrence with the eligibility determinations. All sites considered eligible, or that need further data to determine eligibility, are avoided during ground disturbing activities except in special circumstances, like low-severity prescribed burning, in which it has been determined that the activity will not damage certain kinds of sites. If avoidance is not feasible, sites may be mitigated, for example, through data salvage excavations or photo-documentation. Mitigation plans are approved by the SHPO and the National Advisory Council, and are accompanied by consultation with appropriate interested parties, such as Native American tribes.

In 2004, the Forest re-visited approximately 37 sites, recorded 143 new sites and isolated finds (19 eligible for the National Register) and conducted new archaeological inventory on about 27,400 acres. Inventory and monitoring of heritage resources, including some of the forest's highest-priority archaeological sites, was conducted outside of the requirements for project clearances, mainly by means of volunteer projects of which there were four major ones in 2004. Eligible sites located in potential impact areas were protected. No sites were found to require mitigation through data recovery. No permits for research were issued.

Is unauthorized use or are natural agents damaging or destroying cultural resource properties?

Heritage resources exposed to wind, water, and other natural agents are continually receiving impacts that vary in degree according to the amount of exposure. Prehistoric and historic subsurface deposits

tend to be naturally protected until exposed by erosion or vandalism, and surface remains can be protected if under a rock shelter or overhang. Standing historic buildings and features are impacted by moisture, weather, and animals (both wild and livestock). Humans impact sites directly through vandalism, theft, fires and illegal excavation, and indirectly through wear and tear, littering, and compaction in popular areas.

In 2004, the Forest revisited and inspected conditions at approximately 37 sites. No ongoing damage from the project activities has been identified through this monitoring. Several highly significant prehistoric and historic structure sites are informally monitored every year for new impacts from vandalism and erosion. This monitoring suggests that a small number of sites are negatively impacted each year from natural and human causes, such as erosion, decay, fire, and illegal vandalism.

Wilderness

There are approximately 39,375 acres of wilderness on the Forest (about 7% of the total) that do not have wilderness management prescriptions assigned to them. These include the Fossil Ridge Wilderness – 33,000 acres, the Oh-Be-Joyful addition to the Raggeds Wilderness – 5,500 acres and the Bill Harelson Creek addition to the Uncompahgre Wilderness – 815 acres. All of these areas were designated by the Colorado Wilderness Act of 1993 and post date the Forest Plan amendment of 1991. In addition, the Roubideau and Tabeguache Special Areas, currently being managed to maintain a wilderness character, do not have management prescriptions assigned to them. These will be addressed in the Forest Plan revision.

Observation reported in the FY96 Monitoring report concerning prescribed natural fire, obsolete standards and guidelines, campsite conditions, and the implementation of special orders are still valid.

Special Orders for several GMUG Wilderness Areas were reviewed for consistency and to determine if they reflect current needs. A new order for the shared LaGarita Wilderness Area was implemented in 2004. New orders for the Raggeds and Lizard Head Wilderness Areas were initiated with coordination with adjoining forests. Completion of orders is expected in 2005. Changes include smaller group size limits, restricting recreation stock use near water, and pet restraint specifications. Similar changes to special orders in other Wilderness Areas are expected in the near future.

In 2004 the mandatory self-registration program for the GMUG NF side of the Maroon Bells/Snowmass Wilderness Area continued in an attempt to monitor wilderness use levels. The Forest Service expects to implement the self-registration program in additional wilderness areas over the next few years.

Air & water quality monitoring occurred in the West Elk Wilderness.

Noxious weed identification, control and mapping continued in the West Elk and Raggeds Wilderness Areas.

Monitoring of websites continued in an attempt to find advertised geocache locations in Wilderness Areas on the GMUG NF. Geocache sites are sought out and removed when discovered.

4. Wildlife

Are capability levels being achieved to sustain desired populations for vertebrate wildlife species?

For most management indicator species for which data is available to make this determination, populations are supported at sustainable levels across the Forest. Mule deer populations continue to be below desired levels in some Data Analysis Units (DAUs), with local exceptions (though in no danger

of loss of viability). Elk populations are near population objective levels in most Data Analysis Units as delineated by the Colorado Division of Wildlife. Some units within the Forest are slightly below population objective levels while others are slightly above population objective levels. Rocky Mountain bighorn sheep populations remain stable overall, however, Desert bighorn sheep populations are declining due to a disease outbreak. Black bear populations are stable and estimated to meet desired levels with the limited information available. Data is limited to determine population levels for the pine marten. Goshawk surveys continue on each ranger district.

The Forest has completed a Management Indicator Species Evaluation and Monitoring Analysis for 12 of the 17 designated MIS species. The remaining five MIS are not commonly used in project analysis because of their rare occurrence in project areas, their poor susceptibility to observation and monitoring, their ability to tolerate and adapt to changes in habitat conditions both on and off national forest, or their population changes and trends are largely due to factors other than management actions and habitat changes on the National Forest. A non-significant Forest Plan amendment is being prepared to eliminate species from the current MIS list that are not easily monitored and do not represent the habitat requirements of other species found in similar habitats. Reports have been completed for the Lewis' Woodpecker, Colorado River Cutthroat Trout, Abert's Squirrel, Pine Marten, Northern Goshawk, Mule Deer and Elk. These reports contain information concerning biology and distribution, specialized habitat requirements, limiting factors, Forest-wide habitat condition and trends, population numbers and trend analysis for some species, and monitoring protocol and strategy.

The forest-wide MIS assessment has been updated to reflect habitat changes that have occurred since June 2001.

Five projects were reviewed specifically to document changes in habitat capability population information. On the Gunnison Ranger District habitat capability for the Ridgestock Timber Sale on the Alpine Plateau was reviewed. Habitat capability values for a variety of species including MIS species were evaluated. Results are documented in the Long Draw Vegetation Management Project file on the Gunnison RD.

An intensive monitoring program continues on the Forest for small forest owls. This monitoring effort has been ongoing for 12 years and has resulted in the gathering of important population data primarily for the boreal owl, saw-whet owl, and flammulated owl.

Are the minimum habitat needs for vertebrate wildlife species being met? Are seral stages, edge index, and spatial habitat requirements being achieved?

All projects comply with Forest Plan direction, including standards for old growth, edge, snags, down woody material, and vegetative composition and structure. Most such requirements apply at the diversity unit scale; to the extent that each diversity unit meets standards for old growth, snags, etc., we can be assured that they are met at the Forest level. However, habitat and diversity standards in the Forest Plan are primarily associated with vegetation management treatments. The implementation of Uncompahgre Plateau big game habitat improvement projects on the Forest will substantially increase the acreage of vegetation manipulation on the Forest.

Is existing or created habitat providing the most effective use by big game within desired objectives?

Habitat effectiveness is limited primarily by open road density. Some Forest areas are still open to travel by off-highway vehicles and user-developed routes continue to be created. Some areas, particularly on the Uncompahgre Plateau, are at less than the objective of 40% (or higher for specific management areas) for habitat effectiveness for elk and deer. An approved travel plan on the Uncompahgre Forest will greatly improve this situation.

On the Grand Valley Ranger District photo reference points were established around the perimeter of wildlife habitat improvement projects on the north end of the Uncompahgre Plateau. These projects are being done to rejuvenate big game winter range. This project was completed in 2004 as part of the North Uncompahgre Wildlife Enhancement Project and will be monitored to determine habitat improvement effectiveness using this method of treatment.

Individual MIS species monitoring activities on the GMUG N.F. in 2004

Goshawk

2004 Northern Goshawk/Other Raptor Nest Monitoring Summary

Goshawk nest monitoring and broadcast surveys combined with foot surveys were conducted following Forest Service Northern Goshawk management guidelines established by Reynolds et al. (1992), and inventory protocols developed by Bosakowski (1999) and Kennedy (2003). The table below summarizes nest monitoring efforts on the GMUG for 2004.

Date	Nest Site	Observer/s	Nest Status*
4-27	Homestake nest	M. Vasquez, S. Borthwick	**Active, heard goshawk alarm call near nest.** This nest was also active in 2003 and 2002.
5-19	North Pass nests 1, 2, 4	M. Jackson	**Nest #4 active, female goshawk aggressively defending.** Nest #2 was active in 2001 and 2000. Nest #2 was abandoned in mid-June 2001 due to weather (snow storm). Nest #3 blew down in spring 2000.
5-20	Millswitch nests 1, 2, 3, 4, 6, 7	M. Jackson, M. Vasquez	**Nest #1 active, adult goshawk incubating.** Nest tree is located within 50m of a road/ATV trail. This nest was last observed active in 2000.
5-20	Carlson nest 3	M. Jackson, M. Vasquez	Inactive
5-24	Carolson nest 1, 2	Gunnison Ranger District Fire Crew	Fire crew observed **adult cooper's hawk vocalizing defensively** near these two nest sites (nests are 300 ft apart)
June	Boston Peak nests 1, 2	M. Vasquez	Inactive. Nest #2 was active in 2003. Nest #1 was active from 1996 - 2000.
June	Mill Creek nests 3, 4	M. Vasquez	Inactive. Nest #4 was active in 2003. Nest #3 was last active in 2000. The nests are less than 50m apart.
6-5	Red Creek nest 1	M. Vasquez	Inactive. Nest blew down.
6-22	Red Creek nest 2	M. Jackson, M. Vasquez	Inactive
6-23	West Antelope nests 1, 2, 3, 4	M. Jackson, M. Vasquez	Inactive. Nests 2 and 3 are gone.

Date	Nest Site	Observer/s	Nest Status*
6-15	Mingo Box nest 6	M. Vasquez	**Active, adult goshawk (possibly female based on size and aggressive defensive behavior) defending nest from about 200 ft from the nest tree.** Found a large downed tree that was used as a plucking post - pile of gray jay feathers beside log and lots of whitewash. The plucking post and feathers were at the edge of a small natural opening about 1/8 acre in size. A larger 1 acre opening exists about 500 ft from the nest tree. Nest was also active in 2003.
6-28	Alpine (Long Draw Diversity Unit) nest 8, 10, 12	M. Vasquez	Inactive
6-29	Killdeer nests 1, 2, 3, 4, 5	M. Jackson, M. Vasquez	**Nest #2 active, adult male goshawk defending, female incubating or brooding.** Nest #2 was active in 2001 but abandoned in mid June due to weather (snow storm). Nest #3 was active in 2000. Nests 1-4 are within eyesight of each other (alternate nests).
7-6	Homestake nest	M. Jackson	Nest re-visit following April 27. **The nest in inactive.** Red-tailed hawks were heard about ¼ mile south of nest. A goshawk adult alarm call was heard on April 27 near the known nest.
7-6	Millswitch nest 1	M. Jackson	Nest re-visit following May 20. **Observed 2 nestlings.** They were fully feathered and almost as big as the adults.
7-6	Daly Gulch Nests 1, 2, 3	M. Vasquez, L. Spicer	Inactive
7-7	North Pass Nest 4	M. Vasquez, L. Spicer	Nest re-visit following May 19. **Observed adult goshawk defending nest. Unable to see nestlings.**
7-8	Samora (Wolverine Gulch) nest	M. Vasquez, L. Spicer	Inactive
7-12	Salaya nest	M. Vasquez, L. Spicer	**Active, observed adult goshawk defending nest.** This nest was found during the winter of 2000. This is the first year the nest has been seen active since found. The nest was not visited during 2003. The Colorado Trail lies approximately 30 meters from the nest. The nest is in a lodgepole pine snag with no canopy overhead.
7-13	Blue Creek nest	M. Vasquez, L. Spicer	Inactive
7-13	McDonald Reservoir Golden Eagle nest	M. Vasquez, L. Spicer	**Active, observed fledgling eagle on nest, fully feathered, eating a prey item.**
7-22	Buffalo Fork nest 5	M. Vasquez, L. Spicer	The nest tree fell in 2003. We **observed 1 adult and 2 juvenile Red-tailed hawks** in the vicinity of where nest #5 used to be. There is likely another nest in the area.
7-22	Mingo Box nest 2	M. Vasquez, L. Spicer	Inactive

Date	Nest Site	Observer/s	Nest Status*
7-26	Buffalo Fork nest 1, 3, 4	M. Vasquez, L. Spicer	Inactive. Nest #3 blew down. Nest #1 is inactive, only a few sticks remain of the nest. Nest #4 is a Red-tailed hawk nest, egg shell fragments were found at the base of the nest tree and there were brown needles in the nest but no birds were seen or heard.
7-26	Mingo Box nest 6	M. Vasquez, L. Spicer	Nest re-visit following June 15. No goshawks were seen or heard. An adult goshawk was seen defending the nest on June 15. Prey remains (stellar's jay) and juvenile goshawk feathers were found at the base of the nest tree.
7-27	Salaya nest	M. Vasquez, L. Spicer	Nest re-visit following July 12. **Observed 1 adult and 3 juvenile goshawks. The juveniles were approximately 600 meters from the nest, on an upper third slope position, eliciting the food begging call.**
7-28	Daly Gulch nest 4, 5	M. Vasquez, L. Spicer	Nest #4 has fallen down. Nest #5 is active, heard a juvenile Red-tailed hawk vocalizing near the nest. Found egg shell fragments at the base of the nest tree. Observed 3 juvenile Red-tailed hawks approximately 1.5 miles northeast of nest #5.
7-29	Killdeer nest 5	M. Jackson, L. Spicer, M. Vasquez	Nest re-visit following June 29. **Observed 1 juvenile and 1 adult close to nest.**
7-29	North Pass nest 4	M. Jackson, L. Spicer, M. Vasquez	Nest re-visit following July 7 and May 19. **Observed 1 juvenile goshawk approximately 400 meters from the nest in a drainage bottom.**
7-29	McDonald Reservoir Golden Eagle nest	M. Jackson, L. Spicer, M. Vasquez	Nest re-visit following July 13. **Juvenile observed on nest on July 13 has fledged. Two dead nestlings were found in the nest.** The remains of prey items consisting of marmots, bushy-tailed woodrats, and other unidentified prey items were also found in the nest and at the base of the cliff beneath the nest.
2004	Goat Creek Timber Sale	Norwood District	**800 acres surveyed using taped call - one adult response (June), no active nest**
2004	Galloway Timber Sale	Norwood District	**Old nests within analysis area checked. Calling surveys completed on 250 acres within analysis area.**
2004	Busted Arm Rx Burn	Norwood District	**Active nest located by RMBO surveyor. USFS monitored nest through July. Observed adult female and 2 goshawk fledglings.**

Abert's Squirrel

Objective: Search

Overview: The Abert's squirrel is a Management Indicator Species for Ponderosa Pine within the GMUG National Forest. Surveys for Abert's squirrel began in the late 1990s and continued the summer of 2004. Abert's squirrels, nests and feeding signs were located on both FS and BLM lands.

The emphasis for the summer of 2004 was to survey Ponderosa Pine stands on the Norwood Ranger District. The following is a summary of areas surveyed. Due to the lack of a current map locating all Ponderosa Pine on the forest, this list may be incomplete. Revisited areas on Forest Service lands with previously confirmed Abert's squirrel activity. Determined if previously located nests were active/inactive.

Comments:

There appears to have been a decline in the abundance of Abert's squirrels in the past year. This statement is based solely on the "no-activity" found in previously active areas as determined by finding current used nests and/or feeding sign. The Gunnison Basin has been in a drought (summer and winter) for the past three years. This is the primary suspected contributory factor regarding the apparent decline in the Abert's squirrel population.

Abert's Squirrel Surveys conducted on the Norwood and Ouray Ranger Districts in 2004

A combined spring feeding index method described by Dodd et. al. (1998) was used to sample Abert's squirrel activity within ponderosa pine forest habitat on the Uncompahgre Plateau. The Pike - San Isabel and San Juan National Forests are also using this sampling method to estimate Abert's squirrel activity.

Habitat analysis using ArcGIS was conducted to identify potential Abert's squirrel habitat on the Plateau. The attribute table for ponderosa pine cover type was queried to identify stands of ponderosa pine that were > 60 acres in size and structural stages 4A, 4B, and 4C. This resulted in the identification of 394 sites.

Sampling was conducted within two proposed project areas. Random sampling sites were selected within the Iron Horse fuels management project on the south end of the Uncompahgre Plateau, and the Love Mesa timber sale/fuels management project area on the north-central portion of the Plateau. Fifteen survey sampling plots (60 acre plots) were completed in May of 2004 within 6,570 acres of potential habitat.

Evidence of feeding was detected in all but one of the areas sampled. Estimated squirrel density appears to be relatively low and varied with structural stage and observed structural habitat features. The lowest densities were in intensively managed even-age pine stands with no interlocking tree crowns and little to no vertical structure (intensively managed 4A stands). The highest densities were in stands of uneven-age pine having clumpy distribution or groups of mature trees with interlocking crowns (structural stages 4B and 4C). These findings appear to validate the habitat models developed by Dodd and Patton for southwestern ponderosa pine.

Neotropical Migrant and Other Bird Species

Sargents Mesa diversity Unit Neotropical Migrant Bird Survey for 2004-Gunnison R.D.
4B Engelmann Spruce-Subalpine Fir Cover Type

Species	Total Count	Comments
American Robin	5	
Brown Creeper*	1	*Seen in Project Area, but not associated with point-count bird surveys.
Chipping Sparrow	2	
Clark's Nutcracker	3	
Dark-Eyed Junko	24	
Golden-crowned Kinglet	3	
Gray Jay	18	
Hairy Woodpecker	4	Management Indicator Species
Hermit Thrush	35	
Hummingbird	2	
Mountain Chickadee	21	
Northern Flicker	1	
Pine Grosbeak	1	
Pine Siskin	111	
Red Breasted Nuthatch	15	
Red Crossbill	8	Management Indicator Species
Ruby-crowned Kinglet	21	
Townsend's Solitaire	1	
Three-toed Woodpecker	2	Sensitive Species
Unknown**	8	
Yellow-rumped Warbler	17	
Total Individuals:	**303**	
Total Species:	**20**	** Total species count does not include unknown species.

Perfecto Diversity Unit Neotropical Migrant Bird Surveys for 2003 to 2004-Gunnison R.D.
Total Species and Individuals Observed in all Habitat Types

Habitat	Species	Total 2003 Count	Total 2004 Count	Comments
s-f, rip	3-toed Woodpecker	1	4	Sensitive Species
s-f, rip, o-p	American Robin	16	10	
rip, o-p	American Tree Sparrow	23	0	
rip	Brewer's Blackbird	0	17	
rip, o-p	Brewer's Sparrow	1	5	Sensitive Species
s-f	Brown Creeper	1	4	
s-f, rip, o-p	Chipping Sparrow	5	23	
rip	Cooper's Hawk	0	1	
s-f, rip, o-p	Dark-eyed Junco	8	47	
s-f	Golden-crowned Kinglet	2	1	
s-f, rip, o-p	Gray Jay	1	22	
rip	Green-winged Teal	15	1	
s-f	Hammond's Flycatcher	1	0	
s-f, rip, o-p	Hermit Thrush	19	46	
rip	House Wren	1	1	

Habitat	Species	Total 2003 Count	Total 2004 Count	Comments
rip, o-p	Lincoln's Sparrow	0	31	
o-p	MacGillivray's Warbler	0	1	
rip	Mallard	0	1	
rip, o-p	Mountain Bluebird	4	5	
s-f, rip	Mountain Chickadee	16	22	
s-f, rip, o-p	Northern Flicker	5	23	
s-f, rip	Olive-sided Flycatcher	0	2	Sensitive Species
s-f, rip	Pine Grosbeak	0	7	
s-f, rip, o-p	Pine Siskin	8	205	
s-f, rip, o-p	Red-breasted Nuthatch	5	11	
s-f, rip, o-p	Red Crossbill	0	37	Management Indicator Species
rip, o-p	Red-naped Sapsucker	1	5	
rip	Red-winged Blackbird	0	1	
s-f, rip, o-p	Ruby-crowned Kinglet	84	53	
s-f	Swainson's Thrush	5	0	
rip, o-p	Song Sparrow	14	14	
rip, o-p	Tree Swallow	0	25	
s-f, rip, o-p	Unknown	11	35	
rip, o-p	Unknown Hummingbird	2	0	
rip, o-p	Unknown Sparrow	16	5	
s-f, rip, o-p	Unknown Swallow	22	0	
rip	Unknown Teal	5	0	
s-f, o-p	Unknown Woodpecker	4	0	
rip, o-p	Vesper Sparrow	0	34	
rip, o-p	Violet Green Swallow	3	6	
s-f, rip	Warbling Vireo	1	4	
rip	White-crowned Sparrow	0	3	
rip, o-p	Western Wood Pewee	14	11	
rip	Yellow Warbler	1	0	
s-f, rip, o-p	Yellow-rumped Warbler	23	27	
	Total Individuals:	**338**	**750**	
	Total Species:	**28**	**35**	Total species count does not include unknown species.
Total Species For 2003 and 2004:		**39**		

s-f : spruce-fir

rip : riparian

o-p : open park

** Vocalizations and sightings heard and identified from transect lines were recorded for all species, consequently some species were recorded that were occupying habitat edges and may not be indicative of the habitat type they were actually recorded in.*

Breeding Bird Surveys

The Norwood and Ouray Ranger Districts continued to conduct breeding bird surveys on five survey routes located on the Uncompahgre Plateau. The routes were established in 1998 with the goal of surveying them annually. This year we were unable to complete all five routes but did survey 3 of

them; the Dave Wood road Aspen route, Divide road spruce/fir route, and the Pinyon BBS Atlas route, which includes P/J, oak, ponderosa pine, aspen and spruce-fir habitat.

One of the purposes of the surveys is to sample various habitats on the Forest for the presence of MIS including the pinyon jay, red crossbill, hairy woodpecker, and Lewis' woodpecker. This year the hairy woodpecker was the only MIS detected on the Dave Wood road aspen route. The hairy woodpecker and red crossbill were detected on the Divide road spruce/fir route. The hairy woodpecker was the only MIS detected on the Pinyon survey this year.

Pine Marten

Detection Surveys on Proposed timber sale areas on the Gunnison Ranger District

During the summer of 2004, the Gunnison District continued surveys to determine the presence/absence of American martens (Martes Americana) in proposed timber sales and surrounding diversity areas. American martens are listed on the R2 Regional Forester's Sensitive Species List as a MIS species for the GMUG N.F. Therefore, if presence is detected, the potential effects of the timber sale on the martens must be addressed.

The protocol described by William J. Zielinski (1995), which used track plate boxes (photos 1 & 2) to detect the presence of American martens, was used as the basis for this survey. Once the boxes were constructed, six boxes (1-6) were set up in the most suitable habitat (see attached GIS maps). In the Perfecto diversity area, the most suitable habitat generally falls to the east. The boxes were placed at least one-half mile apart. They were checked every 2-3 days and picked up on day 13. The boxes were baited with meat scraps. Boxes 1, 2, and 3 were all within the timber sale boundary.

American Marten Track Plate Box Location/Detection Summary
Sargents Mesa Diversity Unit- Gunnison R.D.

Set up date for boxes 1-3: 8/10/04
Set up date for boxes 4-12: 8/23/04

Station	Dates Run	UTM E	UTM N	Elev. feet	Dom. Cover	Structural Stage	Track Plate Type	Marten Detected Date/method	Other Species Detected
1	8/11-8/23	3825994	4238813	11139	spruce/fir	4B	box & camera	NA	mouse, chipmunk, G.M. ground squirrel
2	8/11-8/23	381932	4239958	11011	spruce	4B	box & camera	8/20-8/23, tracks on contact paper	mouse, chipmunk G.M. ground squirrel
**3	8/11-8/23	382535	4239445	10981	spruce	4B	box & camera	8/17, photo	mouse, chipmunk G.M. ground squirrel
4	8/24-9/7	383181	4239100	11015	spruce	4B	box	NA	Mouse, chipmunk G.M. ground squirrel
5	8/24-9/7	383134	4239979	10860	spruce/fir	4B	box	NA	mouse, chipmunk, rabbit G.M. ground squirrel

Station	Dates Run	UTM E	UTM N	Elev. feet	Dom. Cover	Structural Stage	Track Plate Type	Marten Detected Date/method	Other Species Detected
6	8/24-9/7	381787	4239075	11300	spruce lodgepole	4B	box	NA	mouse, chipmunk, red squirrel G.M. ground squirrel
7	8/24-9/7	381274	4239618	11200	spruce lodgepole	4B	box	NA	mouse, chipmunk, rabbit G.M. ground squirrel
8	8/24-9/7	381136	4240620	11122	Spruce	4B	box	8//26-8/30, tracks on contact paper	mouse, chipmunk, G.M. ground squirrel
9	8/24-9/7	381510	4241516	11096	lodgepole	4C	box	9/3-9/7, tracks on contact paper	mouse, chipmunk, red sq. G.M. ground squirrel
10	8/24-9/7	383064	424092	10835	spruce	4C	box	NA	mouse, chipmunk, red squirrel G.M. ground squirrel
11	8/24-9/7	381917	4240827	10910	spruce	4B	box	NA	mouse, chipmunk, G.M. ground squirrel
12	8/24-9/7	382763	4241483	10840	lodgepole fir	4C	box & camera	NA	mouse, chipmunk, G.M. ground squirrel

** Am. Pine Marten scat was found on the ground, 8/5/04 by wildlife personnel while conducting snag surveys. UTM E: 382532 4239428. Track plate box #3 was placed near this location due to the scat finding.

American Marten Track Plate Box Location/Detection Summary
Millswitch Diversity Unit-Unit 1

Set up date for boxes 1-6: 9/23/04
Set up date for boxes 7, 9, 10, 11, 12: 10/12/04 box 8: 10/13/04

Station	Dates Run	UTM E	UTM N	Elev. feet	Dom. Cover	Structural Stage	Track Plate Type	Marten Detected Date/method	Other Species Detected
1	9/23 10/5	391094	4248266	10849	Spruce	4C	Box	9/29-10/5 two detections on paper	Red squirrel, chipmunk, G.M. ground squirrel
2	9/23 10/5	391160	4247309	10791	Spruce	5	Box	10/1-10/5 on contact paper	chipmunk
3	9/23 10/5	391096	4246511	10964	Spruce	4C	Box	NA	Red squirrel, chipmunk

Station	Dates Run	UTM E	UTM N	Elev. feet	Dom. Cover	Structural Stage	Track Plate Type	Marten Detected Date/method	Other Species Detected
4	9/23 10/5	390565	4246187	10882	Spruce/fir	4C	Box camera	10/2 by photo only	chipmunk G.M. ground squirrel
5	9/23 10/5	390365	4246963	10504	Spruce/fir	4C	Box camera	9/27-10/5 three detections on paper & photos	chipmunk
6	9/23 10/5	389549	4246867	10690	Spruce/fir	4C	Box camera	Detected every time box checked (4) on paper & photos	chipmunk
*7	10/12 10/26	388543	4248124	10000	lodgepole	4C	Box	10/12-10/20 two detections on paper	mouse, chipmunk, G.M. ground squirrel
**8	10/13 10/26	389284	4247855	10000	Spruce/fir	5	Box camera	Detected every check (5) times	mouse, chipmunk, G.M. ground squirrel
9	10/12 10/26	388373	4246799	10880	lodgepole	4B	Box	NA	mouse, chipmunk, red squirrel, G.M. ground squirrel
***10	10/12 10/26	389128	4246813	11000	spruce	5	Box	10/14-10/26 detected every visit (4) on paper	chipmunk, red squirrel
11	10/12 10/26	388371	4246051	10900	Spruce/fir	5	Box	NA	mouse, chipmunk, red squirrel
12	10/12 10/26	389189	4246022	11413	spruce	5	Box	10/20-10-/26 on contact paper	mouse, chipmunk,

* marten scat on the plate 10/18 – box 7, scat also found approximately 150 meters below the box on 10/20
** marten scat was found at the site on 10/20. Scat had been under the snow. Melting snow revealed the scat. – box 8
***marten tracks found in the snow .17 miles WSW of box 10 on 10/14. No marten tracks at the box on this day.

American Pine Marten Detection Survey Summary Table – Unit #3
Millswitch Diversity Unit
Boxes 25 – 30 Nov. 2 – 10, 2004

Start date: 11/1/04
End date: 11/10/04 (boxes were removed on this date due to detection at all 6 boxes on 11/8/04)

Station	Dates Run	UTM E	UTM N	Elev. feet	Dom. Cover	Structural Stage	Track Plate Type	Marten Detected Date/method	Other Species Detected
25	11/1 to 11/10	389450	4250753	10742	Lodgepole	4B	Box	11/5 – 11/8 track plate	Chipmunk mouse, red squirrel
26	11/1 to 11/10	388466	4249021	10050	Lodgepole spruce/fir	4C	box	11/5 – 11/8 track plate	Chipmunk

Station	Dates Run	UTM E	UTM N	Elev. feet	Dom. Cover	Structural Stage	Track Plate Type	Marten Detected Date/method	Other Species Detected
27	11/1 to 11/10	389300	4246035	10211	Spruce/fir lodgepole	4C	Box	11/5-11/8, 11/8-11/10 track plate	Chipmunk
28	11/1 to 11/10	389854	4249620	10240	Lodgepole	4B	Box	11/1-11/3, 11/5-11/8 track plate	Chipmunk
29	11/1 to 11/10	389210	4249940	10315	Aspen lodgepole	4C	Box	11/1-11/3,11/3-11/5,11/5-11/8 track plate	None
30	11/1 to 11/10	388550	4249789	10312	lodgepole	4C	box	11/3-11/5, 11/5-11/8 track plate	Chipmunk mouse

There was snow cover on the ground for the duration of the survey. New snow fell during the survey period. Snowshoe hare and red squirrel tracks were observed near all box locations. Marten tracks were observed in the snow near and at the box locations. Other species tracks observed near box locations were bobcat, deer, elk, cottontail and coyote.

American Marten Track Plate Box Location/Detection Summary - 2004
Perfecto Diversity Unit- Gunnison R.D.

Station	Start Date	Observers	Track Plate Box, Camera Station, or Both	Marten Dec	Date Method	Other Species
10	9/9/2004	LS MV	open track plate camera	Y	Sept9-13 photo	elk chipmunk rabbit GM ground squirrel red squirrel
11	9/9/2004	LS MV	track plate box	N	NA	bushy tailed woodrat chipmunk rabbit mouse red squirrel Gm ground squirrel
12	9/9/2004	LS MV	track plate box	Y	Sept 13-15 tracks	chipmunk mouse red squirrel Gm ground squirrel
13	9/9/2004	LS MV	track plate box	N	NA	chipmunk red squirrel Gm ground squirrel
14	9/9/2004	LS MV	track plate box	N	NA	bear chipmunk mouse Gm ground squirrel
15	9/9/2004	LS MV	track plate box	N	NA	chipmunk rabbit mouse Gm ground squirrel

Detection survey for American marten in the Robin Red Breast Mine project area, Middle Fork of Big Cimarron Creek, Ouray Ranger District.

The protocol described by William J. Zielinski (1995), using track plate boxes to detect the presence of American martens, was used as the basis for this survey. The survey area included a four square-mile block of mature and old growth spruce-fir forest habitat that includes the proposed mine operation. Six track plate boxes were placed within the survey area, and sampling was conducted from 8/24/04 to 9/7/04. Each of the track plate boxes were placed one half mile apart in suitable habitat and baited with chicken. All boxes were checked every 2 days, and the boxes with marten tracks were removed each time.

American marten were detected at 5 of the 6 track plate boxes, as well as mice, red squirrel, and snowshoe hare.

5. Fisheries

Are we managing habitat for the needs of trout and macroinvertebrate species? Are we meeting standards and guidelines?

Currently 22 7th level HUCs contain stream reaches (approximately 96 miles) supporting Colorado River cutthroat trout on or immediately adjacent the Forest. Twenty of these populations are considered Conservation Populations under the Regional Conservation Strategy. A Conservation population consists of individuals that demonstrate little or no hybridization with other trout species. In 2004, all streams supporting Conservation Populations were surveyed to determine stream habitat conditions and to assess potential impacts of prolonged drought (2004 year was the sixth year of declared drought in Colorado). Two of the populations established in recent years by the Colorado Division of Wildlife in two lakes on the Grand Mesa and 5 naturally occurring stream populations experienced significant declines in the numbers of fish.

Stream habitat surveys have been completed on 61 stream reaches on nearly 10 miles of CRCT streams from 2001-2004. A more detailed discussion about population and habitat status and trends is available in the Forest MIS Assessment (James & Speas, 2005). A summary of this report is included below. The vast majority of CRCT populations occur in steeper gradient, small channels in headwater reaches. These headwater reaches tend to lack good quality spawning gravels, forcing CRCT to use marginal habitat thus limiting egg survival. Geometric particle size from 13.8 to 15.9 mm or larger yield the best chance of survival for CRCT. Pebble count samples indicate these size classes make up approximately 30% of the substrate composition in CRCT streams. However spawning gravel groupings of this size 1 meter or larger were rare in most streams surveyed. Fine sediment less than 2mm comprise a high percent of spawning habitat in low gradient reaches (< 2 percent), which could be reducing egg survivorship.

Water temperature data from surveyed streams indicate CRCT stream temperature requirements are generally met from June-September, but drop dramatically after September and remain near 0^{o}C from November thru March. Low water temperatures during the winter limits growth and activity and may result in poor embryo survival. The extent of the effects to CRCT populations is not known.

Pool density and depth play an important role in CRCT survival, particularly during low flow periods. Pools comprise 41% of the area and 58% of the pool volume during late summer low flow periods. Pool depth is also a critical element for CRCT. Most occupied habitat on the Forest have residual pool depths ranging form .2 and .5m.

6. Stream habitat

Are we meeting standards and guidelines for minimum flows?

Not as stated in the current Forest Plan. The current Forest Plan standard prescribes bypass flows as a primary means of protecting flow dependant values that are impacted by diversions on the Forest. This has been a very contentious issue, which has had major ramifications regarding State versus Federal jurisdictional questions. In FY04 the Forest did not condition any special use permits for water diversion with bypass flow requirements. As a component of the Forest Plan revision, the GMUG has championed a collaborative effort involving a cross-section of stakeholders with interests in water resources on the Forest. Representatives of water user groups, state resource agencies, environmental and conservation groups have been working since FY00 on various methodologies, strategies and processes that could potentially achieve instream flow protection on NFS lands.

This effort is known as the Pathfinder Project and a Steering Committee representing the various stakeholders has developed a preliminary matrix of strategies and processes. These strategies and processes would provide for instream flow protection by relying on coordination and cooperation to utilize existing regulations, procedures, and programs. In this way, water resources could be managed without relying solely on bypass flow requirements. The Steering Committee has completed an outreach effort, meeting with water-user groups, boards, organizations, and the public to obtain comments and concerns on the preliminary matrix of strategies for instream flow protection. A final report to the Forest Supervisor from the Pathfinder Project Steering Committee was completed in early FY04.

One key component of the Pathfinder Project strategies is reliance on the Colorado Instream Flow Program administered through the Colorado Water Conservation Board to obtain instream flow water rights for streams. During FY04 the Forest completed the field work, data analysis, and a report recommending an instream flow water right for a stream segment on the GMUG. This pilot effort resulted in an instream flow recommendation that is scheduled to be heard by the CWCB in early FY05.

The Forest is anticipating that a number of water diversion permits will be coming up for renewal in the next several years for which minimum flows will be at issue. The subject of instream flows and how to manage water uses on the National Forest will be critical element in the Plan revision process that is now underway and it is expected that the Pathfinder Project Steering Committee report will provide useful recommendations that can be adopted or will influence how instream flows are managed and the standards that will be developed for the Forest Plan to address instream flow protection. The Region's Watershed Conservation Practices Handbook (Standard No. 7) as well as Departmental and Agency policies and direction will also provide direction for instream flow management and protection standards.

Across the GMUG, and particularly on the Grand Mesa, private parties hold many senior water rights, some pre-dating establishment of the national forests. Coordination with water right holders represents the single greatest challenge to achieving minimum flows for riparian ecosystems.

7. Threatened, Endangered, and Sensitive Species

What is the status of threatened and endangered plant and animal species?

The U.S. Fish and Wildlife Service has identified the following species as threatened, endangered, and candidate species for the Grand Mesa, Uncompahgre, and Gunnison National Forests:

Uncompahgre Fritillary Butterfly (UFB) – Endangered

Population Monitoring is and has been an essential part of the UFB Recovery Program. In 2004 population monitoring was again implemented in two forms. The most general included all known colonies and simply involved confirming the presence or absence of adult UFB during the flight period. Transect data to estimate actual abundance was gathered for colonies on three major sites on the Forest.

Quantitative Results - In 2004, a field crew of four observers conducted multiple sample inventories of the Uncompahgre Fritillary Butterfly at three locations on the Forest. A total of six subpopulations were monitored.

Qualitative Results- Qualitative sampling for persistence at all known sites was accomplished during the 2004 UFB flight period. There were some sub-colonies also where persistence was not detected,

however, persistence was evident at least at some sub-colonies. Numbers of butterflies were typically low at all sites and may be indicative of a decline in the odd year populations. Long term data regarding most populations is still unavailable since most of these populations were discovered in the last six years.

Recommendation for future monitoring: It is recommended that monitoring continue into the future to develop long term records that will enable the hopeful recovery of this species.

Bald eagle – Threatened

The Bald Eagle is primarily a spring and fall migrant and a winter resident. Some nesting occurs in the basins, but all nests found to date are located on lower elevation lakes and streams just below the Forest boundary. Bald Eagle populations are monitored by the Colorado Division of Wildlife.

Mexican spotted owl – Threatened.

Surveys for this species are limited to proposed project areas in areas mapped as potential habitat on the Forest. Mexican Spotted owls are suspected to be on the west side of the Uncompahgre Plateau but no species or nests have been found.

Boreal Western Toad – Candidate

Several boreal toad populations have been found on the Forest. In addition, in the fall of 2004 approximately 15,000 tadpoles, metamorphs, and 3-week-old toadlets were released in three ponds on Kannah Creek in a re-introduction effort conducted by the Colorado Division of Wildlife in cooperation with the GMUG National Forest. The table below lists the sites and monitoring efforts in 2004 on the Forest.

Southern Rocky Mtn. Boreal Toad Breeding Locality Monitoring Summary – 2004; Known Active Sites: 5

Mountain Range Locality Name	Site ID	Adequate Monitoring	Active Breeding	Minimum Adult Toads	Number of Yearlings	Number of Sub-adults	Minimum # Egg Masses	Number of Tadpoles	Number of Meta-morphs
Elk & West Elk									
West Brush Creek	GU02	No	No	*	*	*	*	None	None
Grand Mesa Area									
Buzzard Creek		No	Unk	1	Unk	Unk	Unk	Unk	Unk
Mesa Lakes (Kannah Creek)		No	Unk	Unk	Unk	**	Unk	**	**

* No breeding activity

** This amount includes tadpoles, metamorphs, and 3-week-old toadlets

Canada lynx - Threatened.

Canada lynx populations are increasing statewide as a result of the CDOW's reintroduction efforts. Lynx are being intensively monitored by this agency. Lynx are now known to occur in many areas on the Forest.

Uintah Basin Hookless Cactus – Threatened.

No populations of this species have been found on the Forest. Known occurrences of this species are found on the Grand Mesa but at low elevations on Bureau of Land Management lands.

Gunnison Sage Grouse – Candidate

The Colorado Division of Wildlife completed lek counts on all known leks on and adjacent to the GMUG in 2004. Research continued on the Miramonte grouse population near Norwood. CDOW researchers captured and radio collared adult birds to determine reproductive success and dispersal within the study area. Forest Service technicians also completed walk-through surveys of sage grouse habitat on the Naturita Division and Iron Spring Mesa to assess habitat conditions and search for sign of grouse use.

Sage grouse nesting occurs on only one area of the Gunnison Ranger District on the GMUG N.F. These nesting grounds or leks are surveyed each spring by the Colorado Division of Wildlife. Forest personnel assist in these surveys and conduct habitat improvement in the area to enhance habitat for the sage grouse.

Additional Species

Four additional endangered species of fish occur downstream of the GMUG, and could be affected by management activities on the Forest:

Colorado pike minnow - endangered
Bonytail chub - endangered
Humpback chub - endangered
Razorback sucker – endangered

Small populations of these species have been located downstream, well outside the National Forest Boundary. Additional inventories are being conducted to determine population size and distribution within selected drainages.

All projects on the Forest now must comply with analysis protocols considering the effects of proposed actions on potential lynx habitats. A federal recovery plan is being developed.

In addition to species listed by the Fish and Wildlife Service, the Forest Service maintains a list of sensitive species, for which maintenance of viability is a particular concern. Sensitive species which may be found on the GMUG are listed in the Table below:

R2 Regional Forester's GMUG Sensitive Species

ANIMALS	
MAMMALS	
Corynorhinus townsendii	Townsend’s big-eared bat
Cynomys gunnisoni	Gunnison’s prairie dog
Cynomys leucurus	white-tailed prairie dog
Euderma maculatum	spotted bat
Gulo gulo	wolverine
Lontra canadensis	river otter
Martes americana	American marten
Myotis thysanodes	fringed myotis
Vulpes macrotis	kit fox
BIRDS	
Accipiter gentilis	northern goshawk
Aegolius funereus	boreal owl
Ammodramus savannarum	grasshopper sparrow

Amphispiza belli	sage sparrow
Athene cunicularia	burrowing owl
Botaurus lentiginosus	American bittern
Buteo regalis	ferruginous hawk
Centrocercus minimus	Gunnison sage-grouse
Circus cyaneus	northern harrier
Coccyzus americanus	yellow-billed cuckoo
Contopus cooperi	olive-sided flycatcher
Cygnus buccinator	trumpeter swan
Cypseloides niger	black swift
Falco peregrinus anatum	American peregrine falcon
Lagopus leucurus	white-tailed ptarmigan
Lanius ludovicianus	loggerhead shrike
Melanerpes lewis	Lewis' woodpecker
Otus flammeolus	flammulated owl
Picoides dorsalis	American three-toed woodpecker
Progne subis	purple martin
Spizella breweri	Brewer's sparrow
Tympanuchus phasianellus columbianus	Columbian sharp-tailed grouse
AMPHIBIANS	
Bufo boreas boreas	boreal toad
Rana pipiens	northern leopard frog
FISHES	
Catostomus discobolus	bluehead sucker
Catostomus latipinnis	flannelmouth sucker
Gila robusta	roundtail chub
Oncorhynchus clarki pleuriticus	Colorado River cutthroat trout
INSECTS	
Speyeria idalia	regal fritillary
PLANTS	
MONOCOTS	
Calochortus flexuosus	
Carex diandra	
Cypripedium parviflorum	
Epipactis gigantea	
Eriophorum altaicum var. *neogaeum*	
Eriophorum gracile	
Kobresia simpliciuscula	
DICOTS	
Astragalus leptaleus	
Astragalus wetherillii	
Braya glabella	
Cirsium perplexans	
Drosera rotundifolia	
Gilia sedifolia	
Machaeranthera coloradoensis	
Parnassia kotzebuei	

Ranunculus karelinii
Salix arizonica
Salix candida
Salix serissima
Thalictrum heliophilum

Each proposed project on the GMUG requires a Biological Assessment (BA) of potential impacts to threatened, endangered, proposed, and candidate species, and a Biological Evaluation (BE) which is completed for all GMUG sensitive species. If the Biological Assessment concludes that a project "may affect" a threatened or endangered species, the Forest Service consults with the U.S. Fish and Wildlife Service before proceeding. Projects are being designed and implemented to improve/enhance habitat for these species where possible.

8. Riparian

Are we managing riparian habitat to meet the standards and guidelines in the 9A management prescription?

Most of the effort to assess riparian conditions has been done by range vegetation specialists as they undertake range analysis work in preparation for allotment planning. Monitoring efforts have focused on the collection of shrub canopy cover and abundance of riparian obligate species within the water influence zone. Some information is also collected using the proper functioning condition protocol in conjunction with monitoring of large grazing allotments. Range specialists rely on the line intercept, green line and cross section methodologies to collect this information.

Each project environmental analysis includes the relevant standards and guidelines for Management Prescription 9A as management requirements/mitigation measures.

In many cases, projects more than meet the standards set for Management Prescription 9A by incorporating more recent science, including design criteria from the Watershed Conservation Practices Handbook for the Rocky Mountain Region and assessments of Properly Functioning Condition (PFC). The Forest has recognized the Watershed Conservation Practices Handbook as the state of the art in terms of guidance for protecting watershed resources.

Are we managing riparian areas to reach the latest seral stage possible within the stated objectives?

Project decisions are applying criteria, which meet or exceed Forest Plan direction for management of riparian areas. At the same time, timber harvest and road construction are taking place at levels substantially lower than projected in the Forest Plan. Riparian areas are being managed for the latest seral stage possible within stated objectives.

9. Range

Are we meeting the utilization standard in the Forest Plan?

All recent Allotment Management Plans developed on the GMUG include standards at or above utilization standards set in the Forest Plan. Most recent AMPs set stubble heights for riparian vegetation that exceed Forest Plan standards. Environmental analysis has been completed on about 99

allotments on the GMUG since 1995 and includes standards that will improve long-term rangeland health Forest-wide.

In 2004, we monitored and evaluated approximately 500,000 acres for progress towards desired future condition defined in allotment management plans, and administered over 91 allotments to standard. Rangelands on the GMUG are generally stable or in an upward trend, with isolated instances of downward trend.

Range personnel monitor achievement of these standards by rereading and establishing permanent transacts in upland and riparian areas, measuring utilization and stubble height of residual forage, checking permittee compliance with annual operating plans, assessing properly functioning condition of riparian areas, and ensuring that AMP objectives are being attained.

What is the habitat condition and trend?

Current vegetation inventories show stable and upward trend in range condition Forest-wide. All show long-term improvement in range condition. We are collecting vegetation data to update allotment management plans using inventory methods defined in the Rangeland Analysis and Management Training Guide for the Rocky Mountain Region.

What is the level of noxious weed infestation and need for treatment by species?

Noxious weeds continue to be a significant source of concern on this forest and throughout the state. District personnel report increased numbers of weed species and occurrences on the forest each year. Information about noxious weed locations, species, and infestation size is being stored in the Forest GIS, as well as in project files, and USGS maps. The GMUG treats weeds through the Forest Noxious Weed Management Strategy, which provides for education, prevention, containment, and control, and emphasizes integrated pest management. Weed-free feed restrictions are enforced, and all districts are actively involved in biological control of thistles. All ranger districts have ongoing cooperative programs with their respective county weed boards to treat weed infestations in a planned and coordinated manner to ensure that we approach weed control in the most comprehensive manner possible. Treatment of utility lines, special use permit areas (such as ski areas and reservoirs), and ditches is done cooperatively with the owner/permittee. In addition, some inventory and treatment of noxious weeds in burned areas occurred in 2004. There is a significant shortfall in staffing and funding for both the treatment and inventory work that needs to be completed. We estimate that upwards of 25,000 acres on the GMUG are affected by 15-20 species of noxious weeds, including several on the State "A" list.

The following table lists the current invasive plant species inventory for the GMUG. Information is from a combination of Forest Service and county inventories. The majority of inventoried infestations occur along roads. Roads are one of the major pathways upon which invasive plant species are transported; however, roads also serve as the primary survey routes. As mentioned above, not all parts of the GMUG have been inventoried for invasive plant species.

Invasive Plants for GMUG NFs

Species	Total Acres	Species	Total Acres
Scentless Chamomile	2	Bull thistle	629
Mayweed Chamomile	11	Houndstongue	13,104

Species	Total Acres	Species	Total Acres
Common burdock	245	Russian olive	88
Cheat Grass (Downy Brome)	2,209	Leafy spurge	418
Plumeless thistle	11	Dame's rocket	11
Hoary cress (Whitetop)	448	Black henbane	31
Musk thistle	443	Perennial pepperweed	78
Diffuse knapweed	40	Dalmation toadflax-broadleaf	57
Spotted knapweed	121	Yellow toadflax	981
Russian knapweed	828	Scotch thistle	56
Yellow starthistle	25	Tansy ragwort	1
Oxeye daisy	1,111	Saltcedar (Tamarisk)	227
Canada thistle	1,651	TOTAL	22,826

Introduced ornamental species like yellow toadflax and oxeye daisy are a growing concern around private land inholdings, particularly in the Mount Crested Butte, Mountain Village and Powderhorn areas. The Soap Creek watershed, north of Blue Mesa Reservoir, has been designated as a weed management area because of the concentration of oxeye daisy. Similarly, oxeye daisy has expended markedly in the Dry Fork of Escalante beginning at a private in-holding known as the Lockhart Place. The Coal Creek watershed has been identified as a weed management area because of yellow toadflax infestations found there, many of which occur in the West Elk Wilderness.

10. Timber

Are regeneration survival and stocking standards being met?

Regeneration surveys are being conducted one, three, and/or five years after final harvest on sites that are to remain in a forested condition. Of 2781 acres surveyed in 2004, 1904 acres were certified as meeting or exceeding regional standards for successful regeneration. In addition, 572 acres were first and third year surveys on stands not appropriate for fifth year certification. While conducting regeneration surveys, forest personnel noted some poorly stocked aspen stands that were harvested in the early 1980s on the Black Mesa. These stands were appropriately certified as stocked within five years after harvest. The forest conducted regeneration surveys in 2004 to assess the extent of stocking which revealed that 64 acres no longer met stocking requirements. A landscape assessment is planned for the Black Mesa in the near future. These stands will be reviewed within the landscape assessment to determine any appropriate additional cultural treatments.

Planting continued on lands where catastrophic events such as fire and mountain pine beetle occurred. Surveys were conducted on 630 acres after the first or third growing season. There were no fifth year surveys conducted in 2004 and were therefore not timely for fifth year certification. After the first year following planting ponderosa pine, 81 percent survival was attained. After the third year following planting of ponderosa pine on different sites, 3 percent and 22 percent survival was attained.

The seedlings were changed to containerized planting stock a few years ago which increased the survival rates. Shade tubes have also been implemented, which appears to have marginally aided in increasing survival rates. Reforestation personnel believe the drought over the past few years has kept survival rates below the average potential for containerized planting stock. However, the harsh planting conditions magnify the advantages of various planting procedures. The forest has moved away from mechanized tree planting with bare root planting stock that was common at the beginning of the Forest Plan period in favor of hand planting containerized planting stock (with or without shade

tubes) in both spring and fall plantings. Comparisons will continue as planting land affected by catastrophic occurrences continues.

11. Soil and Water

Are standards and guidelines being implemented on projects with the potential to impact soil and water resources?

The Forest is continuing to incorporate appropriate standards and guidelines into the management of all ground disturbing activities, with special emphasis on the effects of roads, water development facilities, unmanaged recreation and livestock use in our watersheds. For livestock-related actions this is being done as grazing plans are updated and Forest Service officials and operators agree to the details of annual operating plans. The management of the existing road network continues to be a challenge to the National goal of maintaining and restoring healthy watersheds. Also the watershed improvement program and road maintenance funds have been targeting roads which are resource problems for either closure or correction of problems, i.e., surfacing, adding drainage, replacing drainage crossing, etc.

Recent road construction incorporates the standards and guidelines into design and mitigation. Review of these activities on the ground confirms that soil and water protection measures are being implemented on the ground. During 2004 a number of service trips and reviews of the Taylor River Canyon Federal Highway improvement project were conducted. These trips involved Forest Service specialists and staff and were done with the full participation of Federal Highway personnel. Methods and techniques to prevent sediment delivery to the Taylor River and achieve long-term stabilization were evaluated. The consensus was that this project has been fully successful at implementing protection measures as designed. While no definitive data has been collected observations indicate that only minimal sediment reach the stream.

During 2004 several harvest units within the Crooked Creek timber sale area were inspected by the Forest Hydrologist and Soil Scientist to evaluate effectiveness of Best Management Practices. Evaluation sheets were completed for both skid trails and temporary roads. In all instances, the applied practices resulted in the full safeguarding of both water quality and soil health.

The other monitoring efforts of note include monitoring water quality effects associated with expansion of the Telluride Ski Area which was extended into 2004. The Rocky Mountain Research Station has not yet produced a final report, but preliminary indications are that the disturbances associated with creation of new runs and lifts, along with changes to vegetation in the sub-alpine and alpine zones, did not result in any effects to water quality. Monitoring plots were revisited in 2004 for both the Burn Canyon and Bucktail Fires in order to assess changes that result from fire salvage operations planned to begin in late 2003. Harvesting operations were completed at several monitoring sites for the Burn Canyon Fire, but no harvesting has yet occurred on Bucktail Fire. An issue that was addressed through monitoring was protection of corridors adjacent to surface drainages. This was accomplished during unit layout and from the monitoring conducted during 2004; those requirements were followed and fully successful. A full report for this monitoring prepared by the Forest Hydrologist is on file at the Norwood Ranger District and Supervisor's Office (Almy, February 2005). The Regional Watershed Conservation Practices Handbook continues to be the foundation on which watershed protection measures are based. It represents the most current strategy for watershed protection and is based upon the state of our knowledge.

It is recognized that many Forest Plan standards and guidelines are becoming outdated or are not sufficiently well defined. New approaches and tools have been developed since the Forest Plan was adopted which better serve our current understanding of physical/ecological processes, reflect public values and respond to political and legal requirements.

12. Minerals

Are operating plans being followed and reclamation completed to meet management requirements and standards and guidelines?

Yes, operating plans are being followed and reclamation is being completed to meet management requirements and standards and guidelines. Forest plan standards are effective and objectives are being met. If the District Ranger determines that significant disturbance of the surface resources will likely result from the operations, the District Ranger will inform the operator of the requirement to prepare a plan of operations. Proper implementation, administration, and enforcement of mineral operations are contingent upon a plan of operation. Review and approval of the reclamation plan ensures that mitigation measures are in compliance with Forest Plan standards and guidelines.

A plan of operations must adequately describe the approved operation with sufficient quantitative information to verify and enforce compliance with the plan, include a termination date, identify the mining claim or mineral lease with an accurate location and site map, list the claimants and/or operators, include a detailed reclamation plan with quantitative and measurable reclamation standards, and document the costs of a reclamation bond, if applicable.

Documentation is essential for proper administration and enforcement. Monitoring intensity varies in accordance with the complexity of the project being administered. Case files contain field exams, personal contacts, verbal and telephone conversations, e-mails, field notes and photos. District lands/minerals personnel are making a conscientious effort to properly administer their mineral operations.

The Paonia Ranger District began administering multi-year methane drainage projects for two of the three coal mines in 2001. During the summer field season, the methane drainage drill sites are inspected several times per week, or as needed depending on activity level. Inspection reports, findings, and follow up needed and photos are prepared and kept in the project files. Although there are isolated instances of non-compliance with operating plans, the companies have generally responded in timely fashions to correct the situations. Contemporaneous reclamation practices on exploration and methane venting drill sites functions well. Satisfactory reclamation success is being observed. The District also manages the requirements for wildlife monitoring associated with projects. Reports are kept in the District files. The District also has on-going field inspections of coal exploration drilling for all three mines. These drill sites are also visited several times per week. In 2004, some issues related to road reconditioning and maintenance work arose, and required action on the part of the permittee to correct. The District also monitors on-going operations at twelve active natural gas wells, and three presently shut in wells. These sites are inspected several times during the summer field season, and once during the winter. Items needing correction are sent to the operators after initial inspections, and follow up inspections are conducted to ensure corrections have been made. During 2004, gas operators were advised about general site maintenance, noxious weed control, and one incidence of a petroleum hydrocarbon spill of less than ten gallons which was successfully cleaned up.

The Grand Valley Ranger District monitors six shut in natural gas wells. During 2004, the operators were notified about general site maintenance, signing needs, and noxious weed control. Items needing correction are sent to the operators after initial inspections, and follow up inspections are conducted to ensure corrections have been made. The District also monitored the construction of a drill pad, surface water monitoring and road reconditioning associated with a new gas well. No issues needing correction were identified. In general, the GMUG has experienced some difficulties with gas operators responding and correcting items noted during routine inspections in a timely fashion.

13. Transportation System

Are newly constructed local roads closed? If not, is reason documented?

All local roads require a Road Management Objective worksheet (RMO) as part the process of implementing decisions made through the NEPA process. The RMO reflects the short and long management goals for the road and displays whether or not the road should remain opened or be closed after the Forest land management activity is completed.

In FY2004 2.0 new miles were constructed. Of the 2.0 miles, 1.0 miles were constructed by non-FS funds and 1.0 miles by appropriated funds. No new Timber Sale roads were constructed in FY2004. All new roads in the Methane Drainage area of the coal had road closure gates installed as part of the lease requirements. Roads no longer needed for the drainage wells are rehabilitated as soon as practical. Approximately 8.5 miles of road were improved in FY2004. Thirty-nine miles were improved using stewardship dollars to address road maintenance issues causing resource problems.

The Forest decommissioned 33 miles of classified and non-classified routes. Twenty percent of the roads decommissioned were scarified and seeded as part of the process to bring the land back into natural production. The remaining eighty percent were closed using informational signing and natural barricades.

The West Elk Mine reconstructed 1.0 miles of exploratory roads for methane gas venting. The roads were constructed for temporary use and will be decommissioned at the conclusion of the venting process.

Are we meeting standards and guidelines rehabilitation of temporary roads?

With the sharp reduction in timber harvest contracts, temporary roads have been reduced significantly. Temporary roads have been replaced with skid trails. When specified in a contract or part of the permit (lease) plan, rehabilitation of temporary roads is very successful. The rehabilitation is most effective if the road entrance is re-contoured and entrance discouragement techniques are utilized. Successful techniques in discouraging road use include positioning of selected trees at the entrance and placing slash in the roadway. The recent work on the Paonia, Norwood and Grand Valley Ranger Districts are excellent examples of rehabilitation.

Are we meeting standards for non-use of obliterated roads?

During FY2004 the Forest District Road Engineers monitored the effectiveness of road obliteration. If obliteration is attempted more than a year after a road's initial construction, a permanent closure is

increasingly difficult to implement with each year of public use. Observations in the field indicated that hunting season shows the greatest effect of people wanting to use closed routes. Motorized and mechanized (mountain bikes) users do go around barriers and do keep closed routes "open." This has been part of the clear need responded to in recent and upcoming travel planning efforts.

We implemented a commercial radio/newspaper media program during the hunting season to reduce the number of new routes. The media campaign was very successful based upon the incidents reported in FY2004 versus previous years. The Forest also had a hunter patrol program that allowed the public to have personal contact with a Forest or Colorado DOW employee.

B. Effectiveness Monitoring

Is Forest Plan direction effective in achieving Forest Plan goals?

1. Riparian

Are vegetative treatments providing desired results?

Monitoring observations indicate that our riparian areas are healthier now than in the past. Vegetative measurements, photo points, and ocular observations reveal improved bank stability, denser vegetation, and cleaner streambeds. For four years, monitoring of streams using Properly Functioning Condition methodology has assessed the basic physical and hydrological characteristics of stream channels. The majority of streams checked are properly functioning.

Are we reaching the upper mid-seral stage in riparian areas? How does this relate to aquatic habitat condition?

Surveys associated with project analysis indicate that riparian condition has improved in recent years and appears to continue in an upward trend. As riparian condition improves, we expect to see a corresponding improvement in aquatic habitat, but no studies have been conducted to date which correlate seral stage to aquatic habitat condition.

2. Range

Are forage utilization standards realistic and achieving the intended objectives?

The GMUG has been using the Rocky Mountain Region Rangeland Analysis and Management Training Guide to supplement and enhance standards and guidelines in the Forest Plan for several years. This guide identifies several methods for rangeland monitoring, including production/utilization; stubble height; ocular methods; grazing response index; and line transects, such as rooted nested frequency and cover frequency. Our observation is that in most cases, shorter duration grazing periods and managing for plant growth and re-growth as well as intensity and frequency of grazing provide better measures of sustainable forage use and rangeland health than utilization standards alone. Based on these observations, we expect to add additional monitoring guidelines in the upcoming Forest Plan revision.

3. Water

Is implementation of the 9A prescription preventing non-point sources of sediment and meeting Colorado Best Management Practices?

Non-point source sediment pollution is not 100% preventable when considered in the context of land management disturbance activities distributed over a range of climatic, geologic and topographic conditions. It is very difficult to separate sediment contributions related to natural watershed processes from that contributed by human activities.

We have been successful in our efforts to incorporate and implement best management practices into all facets of activity on the National Forest. However, our ability to monitor the effectiveness of those practices is limited by funding, staffing and the difficulty associated with conducting meaningful sediment monitoring.

Overall the quality of the water on the Forest is considered to be excellent. It is our observation that the constraints imposed by the 9A Management Direction does effectively protect streams, water quality and fisheries habitat. The only stream located on National Forest land, which is listed by the State as an impaired stream is Marshall Creek, which is a tributary to the San Miguel River, near Telluride, Colorado. Zinc is the contaminate, with the cause being historic mining. In 2004 Coal Creek near Crested Butte was listed as an impaired stream due to heavy metals contamination originating from the Standard Mine. Collaborative planning between the Forest Service, EPA, and a citizen's group that will lead to cleanup of this abandoned mine is now underway.

During fy2004 efforts were made towards completing projects within degraded watersheds, which are intended to improve watershed health. These restoration activities were directed at road maintenance and decommissioning, wetlands restoration; reducing soil loss by improving groundcover; and abandoned mine cleanup. The Forest is experiencing a decline in funding available for restoration treatments. This decline began in 2002 and is expected to continue into the foreseeable future. By fiscal year 2006 the Forest may be unable to provide any NFVW appropriated funds to restoration projects on the Forest. This will significantly impact outputs. A similar decline in Engineering funds will also have ramifications in the ability to correct existing projects or, in the case of road maintenance, prevent problems from developing.

During fy2004 the Forest continued an intensive water quality monitoring project associated with expansion of the Telluride Ski Area. The objective is to assess the effectiveness of Best Management Practices in minimizing detectable increases of nutrients and sediment in surface waters within and downstream of construction areas. The project is a multi-year effect being done cooperatively with this Forest; the Rocky Mountain Research Station; and the Telluride Ski and Golf Company.

Baseline erosion and groundcover monitoring plots were installed in 2003 on both the Burn Canyon and Bucktail fires. The objective was to determine whether or not planned salvage logging would contribute to impacts, which had already occurred due to the effects of wildfire. The findings from monitoring conducted in 2004 for these plots was addressed earlier in this annual report.

Are water yield increases causing channel and resource (fisheries) damage?

There is no evidence that our channels are being adversely impacted by increased water yields. Timber harvesting does have the capability of increasing water yields, however research has demonstrated that significant water yield increases require removal of 25 to 30% of the basal area within a forested watershed. Over the last decade, reduced timber sale activities, in combination with hydrologic recovery of older cutting units, has resulted in all of our forested watersheds being far below the 25 to 30% threshold.

4. Fire

Is our fire program cost effective?

The Forest fire program, due to budget reductions, was at less than 40% MEL in FY04. The Regional Office was able to secure some supplemental funding which allowed the Forest to fully staff all engines at the FY03 level. This allowed the Forest to still maintain the management oversight with the FMO, AFMO, and dispatch services but reduced the Production capabilities from 5 fully staffed (5 persons) Type 6 engines, 7-day coverage, to 3-person staffing and 5-day coverage. However, 7-day coverage was still provided with the use of BLM engines, but not all engines were staffed all 7 days but were available for dispatch if needed. All engines were properly staffed with an Engine and a Assistant Engine Foreman which provided proper supervision. There was one dispatch vacancy in the Grand Junction Interagency Dispatch Office that was filled. Direction from the Regional Office stated that the Units were to maintain IA preparedness to protect life and property commensurate with both fire danger and the national situation. The Forest was expected to pay salary and related expenses necessary to protect life and property. All other expenditures not meeting this mission were deferred. The Forest did this when possible and maximized every opportunity to work preparedness personnel on WFHF (hazardous fuels) projects while still being available for suppression.

The Montrose Interagency Fire Management Unit experienced a return to a more average fire season in 2004. While the drought has not ended, a good winter snow pack delayed the start of fire season, and allowed reservoirs to begin filling again. Most fires were small but low fuel moistures at site specific locations combined with dry windy conditions allowed for two large acreage lightning-caused fires to burn in June and July.

There was no fire restrictions imposed on federal lands within the unit, which was the first time in several years that conditions had been moderate enough to warrant unrestricted campfires. Press releases advised the public to continue to use fire carefully. Gunnison County implemented a new fire reporting system for agricultural and debris burning with an emphasis on tracking burn activity, and restricting burning on dangerous fire weather days. This was a highly successful program that resulted in fewer escaped fires, and reduced the number of unnecessary fire department responses and assists from the Federal Agency fire resources.

The McGruder fire involved wildland and urban interface near the town of Cedaredge, and a Rocky Mountain Area Type 2 (Mullenix) Incident Management Team (IMT) was mobilized. This multi-jurisdictional fire involved BLM, USFS, and private lands, and provided an excellent opportunity for the local community and county organization to interact with the IMT to meet incident objectives and maintain cost constraints. The team was then reassigned to the Saddle Mountain fire, which was a smaller incident, but had increased complexity due to inaccessible terrain and significant aerial resource commitment.

There were three Type 3 incidents (Firebox, Tappan, and Campbell) which the Campbell fire was the most challenging (2,865 acres burned on Forest Service land). The remaining acreage on Campbell and the other Type 3 incidents were all BLM land but support to these fires was provided by Forest Service resources. For the Campbell fire a Type 3 IMT (Richardson) was mobilized utilizing interagency resources from across the unit, and incident objectives were met and safety enhanced by implementing a confinement strategy. This resulted in significant cost savings over a traditional contain/control suppression response, and allowed the Type 3 team to develop additional organizational skills and operational experience.

The unit also provided resources to support the lengthy fire season in Alaska, and mobilized personnel to the Pacific Northwest and California during the peak of their fire activity. Additional unit resources responded to support the multiple hurricane relief efforts that FEMA managed in Florida.

The Forest ended up with 61 reportable fires for a total of 3,575.6 acres burned (51 lightning fires for 3,301.65 acres burned; and 10 human-caused fires for 273.95 acres burned).

Currently data for NFMAS and FUELS out-year planning for FY05 and FY06 is being gathered.

This is the ninth year that the Forest has operated under a unified budget process. The percent of Indirect costs of both WFPR and WFHF was substantially higher than in previous years therefore allowing less program dollars to the ground and to be able to operate efficiently as directed.

Are fuel treatments effectively meeting habitat improvement and fire suppression objectives?

The Fuels Management program on the GMUG continues to increase. The WFHF accomplishment included 7,232 acres of WUI (3,236 acres of prescribed burning; and 3,996 of mechanical treatment) and 4,029 acres of non-WUI (2,691 acres of prescribed burning and 1,338 acres of mechanical treatment) for a total accomplishment of 11,261 acres treated. All accomplishments by Project and treatment type are recorded in the National Fire Plan Operations and Reporting System (NFPORS). Given ongoing changes in the fire management organization, our skills base will continue to grow also. By jointly managing the fire management program with the BLM, the Forest is better able to share expertise and conduct burns needed to meet Wildland Urban Interface and ecological objectives.

Using the NFPORS database the Forest also kept track of other non-fuel (WFHF) funded projects that contributed to either change or improvement of Condition Class. In NFTM there were 659 acres of WUI and 533 acres of non-WUI, all mechanical treatment. In KV there were 198 acres of WUI prescribed burning. In SSSS there were 205 acres of WUI and 197 acres of non-WUI, all mechanical treatment. In NFWF there were 741 acres of WUI and 625 acres of non-WUI, all mechanical treatment. In RBRB there were 1000 acres of WUI and 223 acres of non-WUI, all mechanical treatment. A total of 2,803 acres WUI and 1,578 acres non-WUI for a grand total of 4,381 acres were treated.

All burn plans are current or have been revised to meet Forest Plan and policy direction and standards.

National direction is working to increase fuels treatment while maintaining the pre-suppression program. By increasing the fuel treatment program it is hoped that there will be a measurable reduction in wildfire intensity in the future. The Forest's Accelerated Watershed/Vegetation Restoration Plan (AWRP) is to program for 8000 acres of hazardous fuels treatment in FY04-06;

increase to 10,000 acres over the FY07-09 period and eventually increase to 12,000 acres for FY10-14. Efforts are to continue to concentrate on areas of Communities at risk (identified as Wildland Urban Interface (WUI)); Watersheds at risk; and Threatened and endangered areas.

5. Air

Is the Forest effectively complying with state air quality standards for prescribed burning?

The GMUG is required to apply for state burning permits for all prescribed fire planned or envisioned. The Colorado Air Pollution Control Division reviews all permits for compliance with permit standards. New standards have been developed and implemented of the Forest. Several permits were restricted to the types for burning to conduct. A total of 7,430 acres were prescribed burned on the Forest. All of these burns, conducted in 2004, were within smoke compliance guides as established in the burning permits.

Smoke plumes are monitored on site by the burn boss, and at times off-site by others to check drift into sensitive areas. No adverse reports were received.

6. Insects and Disease

Are our treatment activities effectively reducing or preventing increases in insects and diseases?

The primary tool for the treatment and management of areas affected by forest insects and disease is timber harvest. Reduced levels of harvest on this Forest have essentially resulted in the loss of a program for treating or reducing insects and disease. Natural forces except fire are predominant in forest stands across most of the GMUG, a part of these forces being the replacement of tree stands through loss to age, insects and disease. Trade offs include the preservation of these same stands from the impacts of timber harvest, including road building, and the gradual shift of forest structure to older aged stands of trees. This leaves large areas more susceptible to outbreak of insect and disease (as well as to catastrophic fire). This trend is expected to continue.

Aerial surveys for insect and disease damage that occurred in 2004 focused on 1) the Gunnison National Forest, from McClure Pass and extending south and east to include the West Elk Wilderness and the majority of the Gunnison Ranger District; and 2) areas where pinyon mortality was occurring, along lower elevations of the forest and mostly below the Forest in Plateau Valley, the foothills around the Grand Mesa, and both the east and west sides of the Uncompahgre Plateau, including the Naturita Division.

Some specific effects observed in this year (and previous years) include:

- Subalpine fir mortality is scattered throughout the West Elk Wilderness and northern half of the Gunnison District. This decline has affected high elevations across the entire GMUG. A study of causal agents and the characteristics of impacted stands is ongoing.

- Dwarf mistletoe of lodgepole pine continues to be very severe in many locations, especially in the Taylor Park area.

- Spruce beetle activity was observed scattered throughout the West Elk Wilderness and in the northern portion of the Gunnison District near Crystal Peak. Spruce beetle activity continues to increase on the Grand Mesa (Steven's Gulch), San Juan Mountains (High Mesa, Telluride Ski Area) and in areas of the Uncompahgre Plateau.

- Mountain pine beetle-caused mortality is continuing in ponderosa pine on the Uncompahgre Plateau, near Campbell Point and in Haley Draw. Mountain pine beetle-caused mortality in lodgepole pine is occurring in Taylor Canyon, East of Taylor Park, near Ohio City, and scattered from US Highway 50 southwest to CO Highway 114.

- Douglas-fir beetle activity has been increasing wherever Douglas-fir occurs. Areas observed this past year include the Flatirons, Coal Creek and Anthracite Creek on the Paonia District. Areas affected on the Gunnison District include: Taylor Canyon, areas from Sargents to Archuleta Creek, areas south of the West Elk Wilderness in Curecanti Creek, Soap Creek, East Red Creek and Beaver Creek, and along the Lake Fork.

- Western spruce budworm defoliation of Douglas-fir and true fir is continuing in the Lake Fork drainage near Lake City, Cochetopa Dome area and Uncompahgre Plateau.

- The relatively uniform age of aspen makes cankers and stem decays a management concern throughout much of the GMUG. Areas of note include Grand Mesa and the Uncompahgre Plateau.

- Incidence of Armillaria root disease remains high in spruce-fir stands, particularly on the Grand Mesa. Susceptibility to this pathogen is also aged related. Older stand will continue to be vulnerable. This disease may contribute to windthrow, increased mortality, and spruce beetle.

The small sales timber program is being concentrated in areas with insect and/or disease activity, to minimize the effects to a limited extent. Harvest activities will continue to make a small impact on insect activity in high visibility areas and as other opportunities arise, but the overall forest health will continue to decline as mortality increases over the general forested area as a result of insect and disease activity in combination with aging trees.

7. Soils

Are standards and guidelines effective in maintaining soil productivity?

The effectiveness of our efforts to maintain or enhance soil productivity was monitored in a number of ways on a number of situations. This ranged from observations of soil conditions at various times of the year on the Burn Canyon timber salvage sale activity out of Norwood, Colorado, to continued observations and measurements of the effect of ski areas and ski area expansion activities on fens within the Prospect Basin area at Telluride Colorado. The Forest had 2 fires during the summer of 2004 (McGruder and Campbell) with soil observations being made and protective measures prescribed on each. Observations of soil and slope conditions were also conducted on a completed Aspen Timber sale on the Grand Valley Ranger District. Erosion and sediment control measures were monitored at the Jumbo Reservoir camp ground reconstruction activities with recommendations made to place silt fencing in additional areas. In summary these monitoring activities resulted in the following findings:

Burn Canyon Fire Timber Sale Salvage Activities;

A review of the affects of winter logging activities on the soil resource occurred in January of 2004. Observations in unit 11 of the Decker sale were documented in a report to the Norwood District Ranger. At the time that the observations were made there was 17 inches of snow on the ground. As the logging equipment traversed the area, this snow was spread around and compacted, often times this left a disturbed layer of snow that was 6-8 inches deep. In areas of undisturbed snow the soil was observed to be unfrozen. Areas that had the snow scraped off or had been distributed around were observed to be frozen to 6 inches or more. No deep ruts were observed during this observation. Some track marks in the snow looked like they may be into the soil surface, but upon examination were usually snow and organic material mixed together, with only slight indentations into the soil surface. It was estimated that at the site of these observations no detrimental rutting/ compaction/displacement or erosion was occurring as a result of these logging activities during this period of time.

Another review of soil site conditions occurred the first week of May, 2004. Observations during this site visit documented soil moisture conditions. Results of these observations were also documented in a report to the Norwood District Ranger. Areas visited included units #4 and #12 within the Black Salvage Sale area. Unit #4 had harvest activities occurring in it. This unit was traversed by foot with small observation pits being dug throughout the traverse. In most cases the soil was too dry to form a coherent ball or ribbon, with the surface 1-2 inches being loose and dusty. Moisture measurements were made with a "Speedy Moisture Meter" at three different areas. Values range from 3.5% moisture on an ovendry basis on the surface of one to 14% at a depth of 4-8 inches on another. It was estimated that overall the soil was below field capacity and the plastic limit on these sites. In other words the soil was dry enough to support logging equipment without causing detrimental rutting or compaction.

Wetland/ Fen Monitoring in relation to Ski Area expansion activities in the Prospect Basin area of the Telluride Ski area.

The monitoring of the Fens within prospect basin continued as discussed in our monitoring report for "03. An annual report has not been produced as of 3/05, but it is Dr. Cooper's intent to present a summary and evaluation of the past years data to the Fen Committee and the Communities and other groups that may be interested, sometime during the Spring of 2005. (Conveyed via phone conversation with the Forest Soil Scientist and Dr. Cooper 2/05) Preliminary findings indicate some affects on the Fen vegetation as a result of compacted snow conditions relating to grooming and use of the ski runs located over the fens. (Conveyed via same phone conversation between Dr. Cooper and Forest Soil Scientist 02/05.)

8. Fire

During the summer of 2004, the Forest experienced two fires, the McGruder and the Campbell fires. The McGruder fire occurred from 7/9/04-7/13/04 and burned over 411 acres of National Forest System lands. This fire started on lower elevation BLM and private lands in the Pinion Juniper vegetative communities and burned into the Forest land in the Oakbrush-Serviceberry plant communities. The Campbell Fire occurred from 7/30/04-8/23/04 and burned over 2885 acres of National Forest System lands. In each case the BAER process was conducted to evaluate the affects on the soils, water and vegetative resources. The identified risk on both fires was the risk of invasive plant populations greatly increasing at the exclusion of native species. This would be a potential decline in ecosystem function with a loss of soil productivity. Aerial seeding of theses fires with native species that

occurred before the fire was prescribed, funded and implemented on all Forest acres in both of these fires. It is estimated that this will prevent a large influx of non-native invasive species and will help the ecosystem recover and become productive quicker. This seeding effort should also help stabilize erosion and sediment production. These burns will be evaluated for the next 1-2 years to assess success of the treatments.

Monitoring of completed Aspen Harvest activities on Grand Valley Ranger District

The Forest Soil Scientist and Forest Hydrologist observed ground conditions on 9/27/04 on the Crooked Creek Aspen harvest area on the eastern portion of the Grand Valley District (former Colbran District). This area was harvested via clear cutting from 1998-2002. Units 1 and 2 were traversed on the ground. Aspen sprouting was very robust, very dense and at least 6-8 ft tall. Temporary roads were apparent but vegetated with grass and some sprouts, and they appeared well drained and stabilized. Crossings had been cleaned out and stabilized to natural grades. Skid trails were very difficult to locate. There was no indication of slope movement or accelerated slumping occurring. No soil cracks, leaning trees or small slips were observed. On what was observed, it appeared that the Watershed Conservation Practices had been applied and affective in protecting the soil and water resources.

Jumbo Campground reconstruction

On August 31,2004 the Forest Soil Scientist visited construction activities for the Jumbo Reservoir Campground. It appeared that the erosion control plan was being followed. Silt fencing had been placed around the perimeter as described in the erosion control plan. Staked straw bales had been placed on the down hill side of drainages. The perimeter was walked and no sediment was observed leaving the construction site. There were a couple areas noted where the silt fence was loose and sagging or where it was not in good solid contact with the ground. These were noted and recommendations were made for those areas to be fixed.

In general, assertive efforts are made in each project analysis and decision to protect the Soil Resource through understanding the soil characteristics involved and through the use of measures outlined in the R-2's Watershed Conservation Practices Handbook.

9. Transportation System

Is travel management effectively implemented to accomplish resource objectives? Travel management components are 1) roads; 2) trails; and 3) areas?

Currently the Forest has three Travel Plans, Grand Mesa (1994), Uncompahgre (March 2002) and the Interim Gunnison (4/6/01). In FY2004 the Forest was unable to make advances in the implementation of the three travel plans due to budget reductions in the appropriated road and trail funds. The Forest performed minimal custodial activity (fixing existing signs, replacing stolen/missing signs) during the year. The Norwood R.D. still is the farthest behind in implementation.

Funding of Travel Management continues to be very difficult because of the financial constraints placed upon the Forest Service. Only road and trail maintenance dollars can be used to implement TM implementation in a already marginally funded programs. Funding was further reduced by $200,000 from road and trail maintenance projects in FY2004.

How much and what type of recreation opportunity is being provided?

A wide variety of recreation opportunities are provided on the Forest ranging from urban developed recreation opportunities to wilderness primitive opportunities. Opportunities exist within all categories of the recreation opportunity spectrum (ROS). Those on the lower development spectrum such as semi-primitive, motorized and semi-primitive, nonmotorized are diminishing as a result of other Forest management activities, new route development and increased recreation demands.

C. Validation Monitoring

Do assumptions used in developing the Forest Plan remain valid?

1. Riparian

Is the upper mid-seral stage providing adequate protection for aquatic habitat quality?

Generally speaking, the upper mid-seral standard is providing adequate protection and improvement for riparian areas and attendant aquatic conditions.

2. Timber

Is data used in FORPLAN accurate?

The yield projection discussion expressed in previous Monitoring Reports continues to be moot in that the offer and harvest levels are significantly below Forest Plan projections and Allowable Sale Quantity. Yield projections will be evaluated again during Forest Plan revision.

The Forest continues to rebuild the backlog of environmental documentation to provide a stable timber program. Therefore, the overall timber program financial efficiency remains at a decreased level due to the extensive work on environmental documentation.

3. Facilities

Are road costs accurate?

Yes, however the average road costs have increased annually at a rate of 10 percent per year. The average reconstruction for a timber sale road is $30,000 per mile for a native surfaced road in moderate terrain. The average cost for reconstruction is about $18,000 per mile per lane native surface road. For aggregate surfaced roads are nearly $60,000 per lane mile. Road costs are dependent to the geographic location (Telluride-Crested Butte), topography, soil type, and availability of materials for construction (i.e., aggregate). When silt fences and armoring road dips with rock are added to the road construction package, cost rise significantly. The added costs increase the road construction costs by 20 percent.

ACTION PLAN

The Forest Plan revision effort is under way. The Forest is currently in the process of completing geographic assessments that will document scientific and technical information of land and resource conditions, as well as the results of the collaborative public involvement efforts. The forest planning team, working with other federal and state agencies, local governments, communities, and other public stakeholders, will consider new scientific information, changes in laws, regulations, policies, and new environmental, social, and economic conditions of the region. These elements will be addressed within the important context of current and projected public and community values, objectives for, and uses of this national forest.

Before the GMUG begins the formal plan analysis, as mandated by various laws and regulations, the Forest Service team has committed to a comprehensive pre-NEPA assessment of distinct geographic

areas encompassed by the Forest. Given the size, diversity, and complexity of the GMUG region, the Forest has been subdivided into five geographic areas: the Uncompahgre Plateau, the North Fork Valley, the Grand Mesa, the San Juans, and the Gunnison Basin. The identification of these smaller planning areas opens up opportunities for more focused assessments of ecological, social, and economic components. In addition, better opportunities are provided for community-based collaboration between the agency and public stakeholders. The pre-NEPA assessment will not result in any formal decisions, rather it will focus, inform, and expedite the subsequent analysis and decision-making phases.

The first phase of plan revision was completed in October 2003. This phase combined community-based stakeholder participation with analysis of ecological and socioeconomic conditions in the five geographic areas.

Over forty "landscape working group" meetings were conducted in fifteen different communities across the Forest. During these evening meetings, participants engaged in fruitful dialogue about their goals for the land and resources, as well as the challenges and issues we face in trying to attain those goals. Participants discussed current conditions and uses and compared those to desired future conditions and uses of forest lands surrounding their communities. They developed vision statements and objectives for future management. This stakeholder input is helping the Forest Service identify and prioritize the important changes to the forest plan.

The meeting notes from the Landscape Working Groups meetings for all geographic areas are now on the web in "Public Involvement" (www.fs.fed.us/r2/gmug/policy/plan_rev).

Preliminary Proposed Actions (PPA) or initial recommendations for the Plan Revision have been developed incorporating public input from the landscape working groups, key findings and agency synthesis of all this information. At this time, the preliminary proposed actions are represented by a suite of maps that identify future proposed management direction (themes) and suitable uses.

During the fall of 2004, the Forest planning team conducted 12 open-house meetings in various communities throughout the GMUG. Key findings and trends from evaluations of current conditions across the five geographic areas and the preliminary proposed action for Plan Revision were presented.

The Preliminary Proposed Action (PPA) and maps highlight areas where changes in management direction are proposed to better achieve or maintain desired conditions. The proposal also features potential changes in suitable uses and management emphases for the landscapes. The PPA incorporates key findings from comprehensive evaluation reports and public recommendations from landscape working groups. It attempts to reflect a wide range of interests and preferences for desired conditions, suitable uses, and management objectives across the Forest.

There was great interest in the PPA among the Forest stakeholders. Over 500 people attended one or more of these meetings and approximately 400 comments on the proposed action were received. This input and additional analysis is being used to refine the proposed changes and identify potential options for the draft plan. The compiled comments and meeting information on the open-houses are also provided on the web in "Public Involvement" (www.fs.fed.us/r2/gmug/policy/plan_rev/).

In April 2005, the Forest Supervisor, Charlie Richmond made the decision to proceed with the Forest Plan Revision under the new 2005 Planning Rule and the notice of adjustment appeared in the Federal Register on May 25, 2005. This decision influences the remainder of the plan revision process, the plan's content and how it is implemented. For more information, please visit the GMUG planning website.

The Draft Plan is scheduled to be completed by December 2005. Several of the draft plan components yet to be completed require additional collaborative work. More work is needed on development and refinement of the management objectives, guidelines, monitoring plan, and EMS framework. The public is invited to participate in collaborative work sessions on these plan components related to vegetation management, wildlife habitat, travel management, roadless areas or other topics. The Forest Planning Team will be encouraging community members to continue participation in the plan revision process through working groups or other means.

The planning effort is an open process. Comments and recommendations are accepted and considered throughout the planning process. However, in order for a person to be able to file a valid objection to the final plan, they must have provided a written comment on the Draft Plan during the formal 90 day comment period after the release of the draft.

RESEARCH NEEDS

No additional research needs were identified through this report.

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PUBLIC PARTICIPATION/ DISCLOSURE

This report has been made available on the FS Web at the following web address:

http://www.fs.fed.us/r2/gmug/policy/

It is also printed in hard copy, and may be obtained by request to Forest Planner, GMUG National Forest, 2250 Highway 50, Delta, Colorado 81416.

REFERENCES

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