2003 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/ Kevin Riordan _____ September 22, 2004 __

KEVIN RIORDAN DATE

Acting 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 2003, 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 1 - Outputs of Goods and Services

Outputs & Services	Units	FY 2003 Accomplishments	FY 1991 - 2003 Avg Annual	Forest Plan Projection
Recreation				
Trail Construction & Reconstruction	Miles	152	24	50
Wilderness				
Wilderness Mgmt	M Acres	555	555	515
Lakes Restored	Acres	7		
Non-Structural Wildlife Improvements	Acres	130	10,330	2,000
Range				
Grazing Use (Livestock)	MAUM	246	N/A	300
Non-Structural Improvements	Acres	1300	1365	2500
Timber				
Conifer Sawtimber	MMBF	4.7	6.5	21.0
Conifer POL	MMBF	0.2	0.6	2.4
Aspen POL	MMBF	2.1	5.8	15.0
Firewood & Other	MMBF	1.8	3.4	7.0
Total Offer	MMBF	8.8	16.3	45.4
Reforestation	Acres	1870	1353	870
Timber Stand Improvements	Acres	0	419	200
Minerals				
Leases and Permits	Operating Plans	94	N/A	136
Locatable Minerals	Operating Plans	10	N/A	100
Protection				
Fuel Treatment	Acres	1,040	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	86	67	76
Facilities				
Road Construction & Reconstruction	Miles	33	11	61
Revenues				
Returns to Treasury	M	$1,164	N/A	$845
Costs				
Total Budget	M	$16,268	N/A	$13,112

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 as 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 timber sale/fuel reduction proposal was reviewed in respect to visual implications in 2003. Concerns regarding visuals and impacts in surrounding developed campgrounds were adequately mitigated in the final document. This sale will be checked to determine if visual objectives are being met during timber sale activity. No projects were field reviewed in 2003.

Implementation of one recreation capital improvement project (CIP) to reconstruct Jumbo Campground and the Mesa Lakes Day Use area began in 2002 and continued in 2003. VQO's (Visual Quality Objectives) were studied during project analysis. Monitoring over the life of this project's construction will continue to assure VQO's are being met.

The Ward Lake Campground rehabilitation project was completed which improved road access, campsite placement and recreation improvements. Visual objectives were met during this project construction and at completion.

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 has 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.

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 11 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 one year 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 and is in its first year of implementation also, 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 at the appropriate level 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. 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 2003, the Forest re-visited approximately 45 sites, recorded 167 new sites (78 eligible for the National Register) and conducted new archaeological inventory on about 27,500 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. 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 in 2003.

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 nesting/rubbing/feeding on them. Humans impact sites directly through vandalism, theft, fires and illegal excavation, and indirectly through wear and tear, littering, and compaction in popular areas.

In 2003, the Forest revisited and inspected conditions at approximately 45 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, 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 need to be addressed in Forest Plan Revision.

Observations reported in the FY 96 Monitoring report concerning prescribed natural fire, obsolete standards and guidelines, campsite conditions, and the implementation of special orders are still valid.

Special Orders for all GMUG Wilderness Areas were reviewed for consistency and to determine if they reflect current needs. A new order for the shared Maroon Bells/Snowmass Wilderness Area was implemented in 2003. New orders for the LaGarita and the Raggeds Wilderness are being coordinated with adjoining forests and completion is expected in 2004. Changes include smaller group size limits, restricting recreation stock use near lakes and streams, and pet restraint specifications. Similar changes to special orders in other Wilderness Areas are expected in the future.

A mandatory self-registration program was implemented on the GMUG National Forests side of the Maroon Bells/Snowmass Wilderness Area in 2003 in an attempt to monitor wilderness use levels. The Forest Service will implement the self-registration program in additional wilderness areas over the next few years.

A national recreation sampling program (NVUM) was implemented in 2003 with thirty eight (38) surveys conducted at the wilderness boundaries.

Air/water quality monitoring occurred in the West Elk Wilderness. Water quality monitoring was done at Golden Lakes and at Deep Creek Lake.

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

A recent phenomenon is the sport of geocaching in Wilderness Areas. Websites are monitored and caches located in the Wilderness Areas of the GMUG are sought out for removal.

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, 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. An 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.

An intensive monitoring program continues on the Forest for small forest owls. This monitoring effort has been ongoing for 11 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 the Uncompahgre Project and other 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. Many 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 Gunnison Forest, a decision restricting travel to existing routes was made in April 2001 and should improve habitat effectiveness on that Forest.

As the result of public comment on both timber sales EA's and EIS'S, and on the Uncompahgre Travel Management EIS, it has again come to our attention that the 40% habitat capability (as indicated by the HABCAP model) standard in the Forest Plan needs to be reconsidered. This standard was originally intended to provide a quantifiable standard for assuring compliance with the NFMA requirement to maintain minimum viable populations of wildlife. It does not serve this purpose. Its applicability to various species (elk and deer vs. others) has been unclear, and our interpretation of the Plan has been revised this year after careful study of the definitions of habitat effectiveness and habitat capability in the HABCAP model. The HABCAP model was designed as a tool for comparing the effects of alternatives and does not provide the link with populations that is supported by science. If this is not addressed in an earlier amendment, it will certainly be a primary issue in the Forest Plan Revision. This was reported in previous monitoring reports and remains true today.

Individual MIS species monitoring activities on the GMUG N.F. in 2003

Goshawk

2003 Northern Goshawk Nest Monitoring and Survey 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). Table 2 summarizes nest monitoring efforts on the GMUG for 2003.

Table 2. Nest Monitoring

Date	Nest Site	Observer/s	Nest Status*
5-27	Homestake nest	M. Vasquez, M. Oswald	Active, female goshawk incubating [a]
5-27	Millswitch nests 1, 2, 4, 5, 8	M. Vasquez, M. Oswald	Inactive
5-28	Long Draw nests 8, 10, 12	M. Vasquez, M. Oswald	Inactive, nest # 12 is a new nest [c] found during a foot survey of the area, likely an alternate nest site.
5-29	Long Draw nests 3, 4, 5, 11	M. Vasquez, M. Oswald	Inactive
5-30	Red Creek	M. Vasquez, M. Oswald	Inactive
6-03	West Antelope nests 1, 2, 3, 4	M. Oswald	Inactive
6-04	North Pass nests 1, 2, 3, 4	M. Oswald	Inactive
6-12	Long Draw nest 1	M. Vasquez, M. Oswald	Inactive
6-16	Daly Gulch nests 1, 2, 3, 4	M. Vasquez, M. Oswald	Nest # 2 occupied by Red-tailed Hawks, nest # 4 contained new nest material (green foliage and recently well maintained) but no birds seen or heard. This area was a confirmed goshawk territory in 2000.
6-17	Blue Creek nest	M. Vasquez, M. Oswald	Inactive
6-30	Homestake nest	M. Vasquez, M. Oswald	Following the 5-27 visit, observed 1 goshawk chick [a]
6-30	Daly Gulch nests 4, 5	M. Vasquez, M. Oswald	Inactive, (reconfirmed that nest # 4 was inactive)
6-30	Carlson nests 1, 2, 3	M. Vasquez, M. Oswald	Nest # 2 occupied by Cooper's Hawks, female incubating
7-08	Killdeer nests 1, 2, 3, 4, 5	M. Vasquez, M. Oswald	Inactive
7-10	Boston Peak nests 1, 2	M. Vasquez	Nest # 1 inactive, nest # 2 is a new nest [c] found during a foot survey of the area and may be an alternate nest as it is approx. 150 m from nest # 1. Nest # 2 active, observed adult female and 2 nestling goshawks [a]
7-21	Slaughter House	M. Vasquez, M. Oswald	Inactive
7-31	Mill Creek nests 1, 2, 3, 4, 5	M. Vasquez, M. Oswald	Nest # 4 active, observed 2 goshawk fledglings [a]
8-06	Buffalo Fork nests 1, 3, 4, 5	M. Vasquez, M. Oswald	Inactive
8-06	Mingo Box 6	M. Vasquez, M. Oswald	Nest was active this season as there was new nest material (green foliage and the nest was well maintained) and large egg shell fragments at the base of the nest tree. Egg size and coloration fits the description for goshawk eggs. However, no raptors were seen or heard. Subsequently this nest is suspected, but unconfirmed, to have been occupied by goshawks [b].
2003	Big Alder	Paonia District	200 acres surveyed in walk thru-survey-not active. Elk 2 T.S.
2003	Dyke Creek	Paonia District	400 acres surveyed-not active-taped call survey- one adult present

2003-mid July	Crystal Creek	Paonia District	800 acres surveyed using taped calls-Not active
2003	Pilot Knob	Paonia District	200 acres walk-thru survey. Not active. Cow Creek.
2003	Johnson Gulch	Paonia District	300 acres of walk-thru and tape call surveing done. Knotts Ranch T.S.
2003	Goat Creek Timber Sale	Norwood District	640 acres surveyed using taped call – not active
2003	Galloway Timber Sale	Norwood District	Old nests within analysis area checked. Calling surveys on 250 acres of uncut aspen within sale area – no activity.
2003	Pryor Creek	Ouray District	Known nesting territory resurveyed by calling – no activity.
2003	Lockhart/Sawmill Mesas	Ouray District	Two known nesting territories resurveyed by calling – no activity.
2003	Spruce Mountain Timber Sale	Norwood District	1200 acres surveyed using taped call – no activity.
2003	Sims Mesa Fuels Project	Ouray District	200 acres surveyed using taped call – no activity.

* Broadcast surveys and foot surveys were conducted in the vicinity of inactive nests in an attempt to locate new nests or alternate nest sites.

Fifty nests were monitored with three confirmed occupied by goshawks [a], and one probable [b]. Two new nests [c] were found during nest monitoring efforts.

Project Areas Surveyed

Broadcast surveys and ground searches were conducted on June 2 – June 3, and on June 10 within a new portion added to the diversity unit encompassing the Long Draw Vegetation Management Project Area, located in Gunnison County, Colorado, approximately 31 miles southwest of Gunnison, Colorado in Township 46 N., Range 4 W.,. We broadcasted 42 calling stations covering approximately 1,280 acres. The habitat consisted predominantly of mid-age spruce-fir with scattered small openings. No suitable goshawk nesting habitat was found and no goshawks were detected.

Additionally, goshawk inventories were conducted at known nest sites within the Long Draw Diversity Unit. One new nest was found (inactive, nest # 12, see table 1).

Abert Squirrel

Abert Squirrel Activity Area Checks Summer 2003

2003 - Abert Squirrel Surveys North of U.S. Highway 50

Objective: Search north of U.S. Highway 50 for Abert Squirrels in Ponderosa Pine stands.

Overview: The Abert squirrel is a Management Indicator Species for Ponderosa Pine within the GMUG National Forest. Surveys for Abert squirrel began in the late 1990's.and continued the summer of 2002. All surveys were conducted south of U.S. Highway 50 on Forest Service (FS) and Bureau of Land Management lands (BLM). The emphasis was on FS lands. Abert squirrels, nests and feeding signs were located on both FS and BLM lands.

The emphasis for the summer of 2003 was to survey Ponderosa Pine stands north of U.S. Highway 50 on FS lands. There have never been any reports of Abert squirrel north of the highway either from Forest Service personnel or local residences.

The following is a summary of areas surveyed north of U.S. Highway 50. No evidence of Abert squirrel use and/or observations were found north of the highway. There are remaining Ponderosa pine stands north of the highway that were not surveyed during the summer of 2003. A list of known remaining stands is at the end of this summary. Due to the lack of a current map locating all Ponderosa Pine on the forest this list may be incomplete.

1. 8/6/03 east end road 803, Greathouse Gulch (Wanita, FS land).
   8/13/03 Greathouse Gulch (Wanita)
2. 8/7/03 Soap Creek drainage, west side of the road (south of Little Soap Park) just NW of Soap Creek campground, FS land.
3. 8/7/03 Farther south and west of Soap Creek road, FS land
4. 8/14/03 Yellow Pine Ridge, south of road 803, FS land
5. 8/21/03 East ridge of West Antelope Creek, FS road 818, BLM land.
6. 8/26/03 east side of Black Sage pass, FS road 887
7. 8/26/03 FS road 796, off of Wanita Springs road, Hicks Gulch

Objective: Search south of U.S. Highway 50 for Abert's Squirrels in Ponderosa Pine stands.

Revisit areas on Forest Service (FS) lands with previously confirmed Abert squirrel activity. Determine if previously located nests were active/inactive.

Overview:

Abert squirrels are a Management Indicator Species (MIS) for ponderosa pine on the GMUG National Forest. Surveys for Abert squirrel were initiated during the summer of 2001 and continued summer 2002. All surveys were conducted south of U.S. Highway 50. The emphasis was place on surveying ponderosa pine stands on FS lands. Since a large portion of the Ponderosa pine in the Gunnison Basin is on Bureau of Land Management (BLM) managed Public Lands a percent of survey time was spent on BLM lands.

Nests and squirrels located were mapped and nest tree characteristics recorded.

Ponderosa pine is found consistently from Lake City (U.S. Highway 149) north to Indian Creek on both sides of the highway. Both sides of the Cebolla Creek drainage supports Ponderosa pine. Abert squirrels and/or evidence of presence was found consistently along these corridors.

Ponderosa pine to the east of Sawtooth Mountain is less contiguous and patchy with greater distance between patches. An apparent (not based on population/density information) lower concentration of Abert squirrels was found through the Cochetopa Park, Cochetopa Dome, Razor Dome, Gizmo and Needle Creek areas.

Not all of the previously known active areas in the east half of the Gunnison Ranger District (2001/2002) were visited in 2003. Six areas where squirrels had been either observed, heard or fresh feeding sign located were re-surveyed. The Myers Gulch, Wolverine Gulch, Stag Gulch area had the highest density of Abert squirrel activity based on number of nests, squirrels observed and feeding activity in 2001 and 2002.

Only the Wolverine Gulch area was confirmed as still having Abert squirrels present of the six areas resurveyed during the summer of 2003. Below is a summary of areas resurveyed.

1) East of Cochetopa Dome, Cochetopa Dome quad
2) Road 854, NW of Old Agency, Cold Spring Park quad
3) Myers Gulch, FS road 804, north of U.S. Highway 114 Road 848, Wolverine Gulch, Razor Dome quad
4) Northwest of Needle Creek Reservoir.4 miles , West Baldy quad
5) Stag Gulch, east of Wolverine Gulch, north of U.S. Highway 114
6) Lower Alpine Plateau, below FS road 868, east of U.S. Highway 149

Comments:

Indian Creek (south of U.S. Highway 149) still has Abert squirrels present. Other FS personnel documented Abert squirrel sightings during the summer of 2003. This area is on BLM lands and was not rechecked by FS Wildlife staff.

During the previous 2 summers feed trees were readily found. Abundant green clipped boughs under these trees indicated current use. Cone cores (orange in color) were an other sign often found in active areas the previous 2 summers. Very few orange cone cores and no trees with the ground covered by clipped bough ends were found during the summer of 2003. The one remaining active area of those re-visited in 2003, had cone cores from green cones in a small quantity (< 50 cones) and twigs from the inner bark being eaten.

There appears to have been a decline in the abundance of Abert 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 3 years. This is the primary suspected contributory factor regarding the apparent decline in the Abert squirrel population.

Total estimated acreage surveyed: **1002.3 ac.**

Pine Marten

Detection Survey for American Martens in the Perfecto Timber Sale and Surrounding Diversity Area

Between August 20th and October 8th, 2003, the wildlife crew for the Gunnison Ranger District conducted a survey to determine the presence/absence of American martens (*Martes Americana*) in the Perfecto and Long Draw Timber sales and surrounding diversity areas. American martens are listed on the R2 Regional Forester's Sensitive Species List and is an 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 (GIS maps are on file). 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.

On September 25, three more boxes (7-9) were set up in the area that appeared to be the best marten habitat in the diversity area. These boxes were checked every 2-4 days and picked up on day 14. To insure that this small area was covered well, the boxes were closer than one-half mile from each other.

A camera station was also set up on October 1st near box 9. The camera station consisted of a can of sardines nailed to a tree with a Wildlife Pro camera (trip camera) aiming just below the can (photo 2). The camera was checked every 2-3 days for seven days.

The following Tables 3 and 4 show the locations of the track plate boxes and the camera station, as well as the species detected at each. Also attached is a summary sheet of tracks obtained, except for the rabbit tracks.

Table 3. Monitoring Results, Perfecto Area

Box	Proposed Timber Sale	Marten Detected	Other Species Detected
1	Perfecto	no	red squirrel
2		no	none
3		no	red squirrel, chipmunk
4		no	red squirrel, mouse, woodrat
5		no	red squirrel, chipmunk, woodrat
6		no	red squirrel, mouse, chipmunk, muskrat
7		no	mouse, chipmunk
8		no	none
9		no	red squirrel, mouse, chipmunk, rabbit
Camera Station	Perfecto	Marten Detected	Other Species Detected
1		no	none

Table 4. Monitoring Results, Long Draw Area

Box	Long Draw	Marten Detected	Other Species Detected
1		no	mouse, bear
2		no	mouse
3		no	mouse, red squirrel
4		no	none
5		no	mouse, red squirrel, chipmunk, rabbit
6		yes	mouse, marten
7		no	mouse, chipmunk
8		yes	mouse, chipmunk, marten
9		no	chipmunk
10		no	woodrat
11		no	rabbit
12		no	mouse, red squirrel, rabbit, woodrat
13		no	red squirrel
14		no	mouse, red squirrel, chipmunk, woodrat
15		no	mouse, red squirrel, woodrat
Camera Station	Long Draw	Marten Detected	Other Species Detected
1		yes	elk, marten (adult & juvenile)
2		yes	rabbit, marten (adult & juvenile)

Photos proved that there were a minimum of two martens present, at least one adult and one juvenile . It is probable that a den exists within the timber sale boundary.

5. Fisheries

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

There are 28 known populations (approx. 75 miles of stream) of 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 2003, all streams supporting Conservation Populations were surveyed to determine stream habitat conditions and to assess potential impacts of prolonged drought (2003 year was the fifth 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 were conducted on approximately five miles of CRCT streams during the field season to establish a "cross-section" of current habitat conditions on the Forest. With completion of these surveys, habitat data has been collected on all known streams occupied by conservation populations of CRCT. 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. Of the 23 stream reaches surveyed, pools comprised 66% of the habitat area and 90% of total habitat volume during summer low flows. The vast majority of pools were formed by beaver dams, which comprise 73% by volume. Residual pool depth in small streams was generally less than 0.3 meters, which may limit CRCT survival during summer and winter low-flow periods.

Cover is an important feature for the survival of CRCT and appears to be abundant in most streams surveyed. In forested streams large woody debris (LWD) range from 11 to 75 pieces per 100 meters of stream. In moderate to high gradient streams, LWD is the dominant structure forming pools. Undercut banks were not frequently observed, comprising only 10% of the total streambank sampled.

Threats potentially affecting the viability of CRCT on the Forest include competition with non-native fish species, drought, water development and depletion, disease, introduction of fine sediment from poorly designed roads, barriers to migration from poorly designed culverts, and improper livestock management.

Project-level monitoring for aquatic MIS was initiated in 2002 with additional sites added in 2003 in watersheds potentially affected by the Dry Creek/Spring Creek vegetation treatment project and rangeland management projects implemented in the Horsefly allotment. The Dry Creek/Spring Creek project affects approximately 6000 acres in Dry Creek and Spring Creek watersheds. The purpose of the project is to change vegetation classes in specific amounts and pattern to create a mosaic to improve conditions for wildlife and reduce risk of fire. Specific treatments include thinning of trees/brush, prescribed burning, roller chopping and hydro axing.

The Horsefly allotment decision allows livestock grazing on pastures using an adaptive management concept to achieve desired vegetative conditions. Desired conditions specific to aquatic/riparian areas include:

1) Maintain the extent of stable banks in each stream reach at 80% or more of reference conditions

2) Design grazing systems to limit utilization of woody species. Move livestock from riparian areas and wetlands when they begin to have a preference for woody species

3) Remove livestock from the grazing unit when the average stubble heights on Carex species reach 3-4 inches in spring use pastures and 4-6 inches in summer/fall use pastures

4) Limit utilization of herbaceous species to 40-45% of weight

5) Limit utilization of woody plants to 15-20% of current annual growth.

Instream habitat data and/or fish population estimates were obtained in 12 streams in Dry Creek, Spring Creek, and Horesfly watersheds (Tables 5 and 6). Management indicator Species monitored included Colorado River cutthroat trout, brook trout and brown trout. These data provide an environmental baseline for detection of changes overtime in the affected watersheds. To minimize potential affects from electrofishing and fish handling, sites will be revisited every 5 years.

Table 1. Project level population estimates in fish per mile by project for 2002-2003. Fish/Mile High and Fish/Mile Low represent confidence interval range for sampled reach of stream. Minimum size of fish used for estimate is 75 mm. (CRN=Colorado River cutthroat trout; BRK=Brook Trout; LOC=Brown Trout)
Table 5.

Project Name	Site ID	Stream Name	State Water ID	Species	Minimum Size (mm)	Fish/Mile High	Fish/Mile Low
Horsefly and Dry/Spring Creek EA	BDAM2002-1	Beaver Dams Creek	44521	CRN	75	523	35
Horsefly and Dry/Spring Creek EA	BDAM2002-2	Beaver Dams Creek	44521	CRN	75	308	7
Horsefly EA	CLEA2001-1	Clear Creek	39649	BRK	75	54	21
Horsefly EA	CLEA2001-1	Clear Creek	39649	CRN	75	161	146
Horsefly EA	CLEA2001-1	Clear Creek	39649	LOC	75	11	0
Horsefly EA	CTWD2003-1	Cottonwood Creek	39699	CRN	75	105	46
Horsefly and Dry/Spring Creek EA	EFDRY2003-1	EF Dry Creek	48618	LOC	75	248	164
Horsefly and Dry/Spring Creek EA	EFDRY2003-2	EF Dry Creek	48618	CRN	75	276	23
Horsefly and Dry/Spring Creek EA	EFDRY2003-3	EF Dry Creek	48618	CRN	75	145	0
Horsefly and Dry/Spring Creek EA	PRYR2003-1	Pryor Creek	39702	CRN	75	196	100

Table 6. Quantitative habitat data on fish habitat parameters with project areas for 2002-03. Data collected using peer reviewed protocols (SCI 2001; R1R4 1997). RSPD= Residual Pool Depth; LWD= Large Woody Debris greater than 3 meters in length and 0.1 meters in diameter; d50 = to the 50th percentile particle size diameter.

Project Name	SiteID	StreamName	AvgWidth	MeanRSPD	TotalLWD	Fines<2mm	d50	Slope	% StableBanks
Horsefly and Dry/Spring Creek EA	r1r42002-001	Beaver Dams Creek	1.45	0.25	156	2	79.8	5.5	98
Horsefly and Dry/Spring Creek EA	r1r42002-002	Beaver Dams Creek	1.11	0.16	248	16	50	3	97
Horsefly and Dry/Spring Creek EA	r1r42002-003	Beaver Dams Creek	1.19	0.23	72	36	11.2	5	97
Horsefly EA	sci2001-010	Clay Creek		0.39	11		91.9	5.26	95
Horsefly EA	sci2001-034	Clear Creek		0.28	153		42.8	2.82	66
Horsefly EA	r1r42001-001	Clear Creek	1.76	0.25	105	24	35.3	3.5	84
Horsefly EA	gmug2003-001	Cottonwood Creek	2.97	0.22	24	0	58.4	1.9	93
Horsefly EA	sci2001-007	EF Spring Creek		0.26	82		65.6	4.73	72
Horsefly and Dry/Spring Creek EA	gmug2003-004	EF Dry Creek	2.11	0.24	98	1	61.3	3.93	99
Horsefly EA	sci2001-031	Horsefly Creek		0.43	0		50.7	2.26	96
Horsefly EA	r1r42001-010	Horsefly Creek	3.49	0.43	240	22	79.8	2.6	96
Horsefly EA	sci2001-030	NFk Tabeguache		0.31	15		66	2.78	84

Horsefly and Dry/Spring Creek EA	gmug2003-003	Pryor Cr	1.82	0.19	80	18.9	19.2	4.33	88
Horsefly EA	sci2002-021	Red Canyon Cr		0.26	48		75.1	4.6	60
Horsefly EA	sci2001-013	Tabeguache		0.27	59		46.7	2.27	78
Horsefly EA	r1r42001-023	WF Spring Creek	1.35	0.19	137	10	31.1	3.9	95

Streams within the project areas contain habitat conditions to support self-sustaining fisheries. However, limiting factors such as summer low flows, available spawning gravel, colder water temperatures, and stream size prevents these streams from producing high densities of fish. Four reaches inventoried currently do not meet the 80% stable streambank objective identified in the EA.

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 FY03 the Forest has not conditioned 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. The final report to the Forest Supervisor from the Pathfinder Project Steering Committee is expected 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 FY03 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 FY04.

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.

6. 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 2003 Population monitoring was again implemented in two form. 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.

In 2003, 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 2003 UFB filght period. There were some sub-colonies also where persistence was not detected, however, persistence was evident at 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.

The Southwestern Willow Flycatcher has been dropped as an species on the Fore.st. It has been determined that the Species is not found in the Colorado, Gunnson, Uncompahgre, or San Miguel drainages

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 on the Forest. Mexican Spotted owls are suspected to be on the Forest, particularly on the Uncompahgre Plateau. However, no species or nests have been located.

Boreal Western Toad – Candidate

Several boreal toad populations have been found on the Forest. In addition, in the fall of 2003 approximately 600 tadpoles were released in the Mesa Lakes area in a re-introduction effort conducted

by the Colorado Division of Wildlife in cooperation with the GMUG National Forest. Table 7 below lists the sites and monitoring efforts in 2003 on the Forest.

Table 7. Southern Rocky Mtn. Boreal Toad Breeding Locality Moinitoring Summary – 2003 ; 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 Metamorphs
Elk & West Elk									
Copper Creek	GU01	Yes	Yes	50	2	4	14	3000+	500-1000
West Brush Creek	GU02	No	No	2	0	0	0	None	None
Brush Creek	GU04	Yes	Yes	9	1	0	1	<100	none
Grand Mesa Area									
Buzzard Creek		No	Unk	2	Unk	Unk	Unk	Unk	Unk
Mesa Lakes		No	Unk	Unk	Unk	Unk	Unk	600	Unk

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.

Unita Basin Hookless Cactus – Threatened.

No populations of this species have been found on the Forest. Known occurances 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 2003. 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. Habitat assessments were completed on lek areas and the Burn Canyon fire of '02. 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 Doistrict 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 squawfish - endangered
Bonytail chub - endangered
Humpback chub - endangered
Razorback sucker – endangered

A few remnant populations 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 Table 8.:

Table 8. 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
Numenius americanus	long-billed curlew
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.

7. 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. In preparation for the revision of our Forest Plan, an effort was initiated in FY02 to extract what data has been collected. Riparian area conditions for selected geographic analysis areas across the Forest was undertaken in FY02 through an interview process that involved those specialists who have principal responsibility in the area of riparian ecosystems, which include range specialists, wildlife and fishery biologists and watershed specialists.

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.

8. 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 AMP's set stubble heights for riparian vegetation that exceed Forest Plan standards. Environmental analysis has been completed on about 97 allotments on the GMUG since 1995 and includes standards that will improve long-term rangeland health Forest-wide.

In 2003, we monitored and evaluated approximately 600,000 acres for progress towards desired future condition defined in allotment management plans, and administered over 100 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 2003. 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 9lists 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.

Table 9. Invasive Plants for GMUG N.F.'s

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

Extensive inventories for invasive plant species were conducted in the Burn Canyon fire area (burned in 2002) during 2003, located on the Naturita Division (Norwood District). Bull thistle was the most common species inventoried (infesting 150 acres), followed by Canada thistle (50 acres) and musk thistle (50 acres). Most invasive plant species were concentrated in areas that were intensively burned and all vegetation was eliminated. The next area of concentration was in ponderosa pine stands where the understory vegetation had been burned.

Additional invasive plant species inventories conducted during FY 2003 covered the Gunnison Basin area, and portions of the Ouray District on the Uncompahgre Plateau and in the Big Cimarron area of the Uncompahgre National Forest.

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. 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.

9. 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 1512 acres surveyed in 2003, 876 acres were certified as meeting or exceeding regional standards for successful regeneration. In addition, 636 acres were first and third year surveys on stands not appropriate for fifth year certification.

Planting continued on lands where catastrophic events such as fire and mountain pine beetle occurred. Surveys are conducted after the first, third and fifth growing season. Of 687 acres where planting surveys were conducted, 271 acres were certified as stocked. 197 acres were classified as failures. The remaining acres were not timely for fifth year certification. After the first year following planting ponderosa pine, 64 percent survival was attained. After the third year following planting of ponderosa pine and Engelmann spruce, 37 percent and 22 percent survival was attained, respectively.

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.

10. 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, 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 2003 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 2003 mechanical vegetation treatments on the Uncompahgre Plateau designed to reduce hazardous fuels and improve wildlife habitat were evaluated. Treatments employing both roller-chopping and hydro-axing methods were inspected in the field. In both instances work was in progress. The roller chopping in Tabequache basin was well laid out, with adequate buffers provided to both an intermittent drainage network and around springs to safeguard soil and water resources. While ground disturbance was greater with the roller-chopping than the hydro-axing the cleat marks from the chopping drum were orientated perpendicular to the slope and thus will provide some micro-site water storage and retention. Significant amounts of litter were incorporated into the surface soil horizon, which will also contribute to an increase in surface roughness and increase in potential infiltration. Site conditions were extremely dry and so the potential for soil compaction were non existent. The hydro-axe operation in Happy Canyon did prompt some discussion about appropriate protection of ephemeral and intermittent drainages. This led directly to the development and adoption of standards in the Spring Creek Mechanical Treatments EA, which was finalized during the winter of 2004. This monitoring validated that the benefits of mechanical treatments do extend to soil and water resources by increasing surface roughness in the short term and improving ground cover in the long term. It would be desirable to review these same sites one full season following completion to determine whether project design standards were effective in protecting water quality and soil health in subsequent years.

The other monitoring efforts of note include the 4th and final year of monitoring water quality effects associated with expansion of the Telluride Ski Area. 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. Baseline water quality data was collected to address public concerns associated with proposed aspen treatments in the Town of Norwood source water area. The intent is to monitor again once harvesting is completed to determine how effective sale design and mitigation are in safeguarding water quality. Similarly, monitoring plots were established in 2003 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. Monitoring plots will be revisited in 2004. 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.

11. 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 Ouray RD issued a Notice of Non-compliance on the Williams Gold Mining Claim for failure to comply with the 1998 Plan of Operations.

The Paonia District began administering multi-year methane drainage projects for two coal mines in 2001. Frequent field visits are made, and findings, 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 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 has on-going field inspections of coal exploration drilling.

12. 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 FY2003 2.2 new miles were constructed. Of the 2.2 miles, 1.9 miles were constructed by non-FS funds and 0.3 miles by appropriated funds.. No new Timber Sale roads were constructed in FY2003. 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 48 miles of road were improved in FY2003. Thirty-nine miles were improved using stewardship dollars to address road maintenance issues causing resource problems.

As in FY2002 the Forest capital investment funds were focused upon the Mesa Lakes Complex on the Grand Valley Ranger District. The Jumbo Campground contract was awarded for just under $600,000. The contract focused upon road improvements within the campground and the access roads within the complex.

The Forest decommissioned 42 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 1.9 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, Norwwod and Grand Valley Ranger Districts are excellent examples of rehabilitation.

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

During FY2003 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 FY2003 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 three 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 regrowth 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 which may be 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. It appears that

Coal Creek near Crested Butte may soon be listed as an impaired stream due to heavy metals contamination.

During fy2003 significant 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.

During fy2003 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.

In fy2003 the Forest continued a significant effort to assess the water quality conditions of the Beaver Creek watershed, which is the water supply for the town of Norwood. The objective was to determine the source of Dissolved Organic Carbon (DOC), which has been identified as a constituent of concern because of the suspected indirect effects to human health that result from the chlorination of water that is high in DOC. A total of 185 water samples were collected at 15 sites over a 6 month period. A report was prepared and is on file at the Supervisor's Office.

Baseline erosion and groundcover monitoring plots were installed 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. More work on this project will be done in 2004.

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 FY03. At M40 the Forest still maintained the management oversight with the FMO, AFMO, and dispatch services but reduced the Production capabilities from 5 fully staffed 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. The fire organization had 1 Engine Foreman and 3 Assistant Engine Foreman positions vacant. The final budget did not allow for recruitment and filling of those positions. This compromised our ability to staff at 7-day coverage due to the lack of proper supervision. 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.

This year the Forest requested and used fire severity funds for additional resource capabilities. Severity funding started in late June and ended in August. These requests were not intended to supplement the Forest suppression budget at a level between the FY03 allocation and MEL, but rather it was used in response to conditions that were believed to clearly place the Forest at funding needs beyond the current NFMAS MEL value. This funding enabled the Forest to expand prevention and patrol efforts by making public contacts as well as responding with an aggressive initial attack effort and extended attack support. Fire restrictions were considered throughout the fire season but were not implemented.

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

This is the eighth 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.

The winter of 2002 produced a near average snow pack in the mountains, but this was not enough to overcome years of drought and the Montrose Interagency Fire Management Unit began the 2003 fire season with deficit soil and fuel moistures in most areas. This lack of moisture during the growing season contributed to a die-off of sagebrush in the upper Gunnison Basin, and enabled the Ips Beetle to attack large tracts of Pinyon Pine in the western part of the unit. This standing dead fuel increased the existing potential for large fires in fuel types that were severely drought stressed from the previous season. A series of human-caused fires at elevations above 10,000 feet in early June seemed to confirm fears that there would be a repeat of the extreme fire behavior experienced in 2002. During the month of July an extended period of record high temperatures occurred across most of western Colorado, further increasing the potential for large fires. Fortunately the summer lightning storms produced enough rain to keep most of the fires small, and initial attack resources were successful in suppressing a majority of the fire starts. The Montrose Interagency Fire Management Unit experienced an above average number of fires and a below average number of a cres burned. There were eight large incidents managed by local Type 3 incident Management teams, and staffed by personnel from all agencies within the unit.

The Forest ended up with 93 reportable fires for a total of 498 acres burned.

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

The Fuels Management program on the GMUG continues to increase (assigned target 8,121 acres of WUI; and 3,483 acres of non-WUI). 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.

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. Efforts continue to concentrate on areas of Communities at risk (identified as Wildland Urban Interface (WUI)); Watersheds at risk; and Threatened and endangered areas.

The majority of the Forest's original proposed program was in prescribed burning. Because the Forest was out of the Rx burning window until late August and through September the Forest converted most of the planned treatments from Rx burning to mechanical treatments. This required a greater cost per acre to accomplish the work. The Forest proposed to treat 4,843 acres of WUI and 2,008 acres of non-WUI. Total accomplishment for the Forest was 5,436 acres. The treatment type and Project identification are input into the NFPORS database.

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. All burns conducted in 2003 were within smoke compliance guides 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.

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

- Decline of subalpine fir is evident throughout high elevations on the GMUG. A study of causal agents and the characteristics of impacted stands is ongoing.

- Dwarf mistletoe of lodgepole pine is very severe in many locations. Of particular note is the Taylor Park area.

- Wind events in the past several years have resulted in scattered areas of wind thrown spruce. This downed material is being monitored for spruce beetle activity. Areas of particular interest include High Mesa, Grand Mesa, Uncompahgre Plateau, Telluride Ski Area, Steven's Gulch and the vicinity of Kebler Pass.

- Mountain pine beetle-caused mortality is evident in ponderosa pine on the Uncompahgre Plateau, near Campbell Point and in Haley Draw. Widely scattered mortality is also present in the Upper Tomichi Creek area near Sargents.

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

- Cankers and stem decays of aspen are management concerns throughout much of the GMUG. Areas of note include Grand Mesa and the Uncompahgre Plateau.

- High incidence of Armillaria root disease has been detected in spruce-fir stands, particularly on the Grand Mesa. Although initial concern has been focused on developed recreation sites, the disease also appears to be common in undeveloped forests, where it may contribute to windthrow, increased mortality, and spruce beetle.

The small sales timber program is being concentrated in these areas 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 transect data being gathered on the Burn Canyon burn area out of Norwood, Colorado, to observations and measurements of the effect ski area expansion activities on fens below Telluride Colorado, to the review of timber sale contract documentation on an active sale areas on the Gunnison, Paonia and Ouray Ranger Districts.

In summary these monitoring activities resulted in the following findings:

Burn Canyon Fire Area:

Data was gathered cooperatively between the Range, Wildlife and Soils disciplines

following procedures outlined in R-2's Rangeland Analysis and Management Training Guide,1996 and FSH 2550 Soil quality monitoring direction. Information was obtained on 26 plots within the upper portions of the Burn Canyon Burn area using ocular macro plots on 1/10 acre areas, cover frequency transects and line intercept transects. The plots were located on the flatter mesa surfaces in a variety of areas to represent many different situations and in areas that have been proposed for salvage logging activities. All plots were numbered and located with GPS hand held units and plotted on maps. Photos were taken on all plots.

In general, this documented that the amount of bare ground ranged from 90% to just a trace with the average being 41%. The effective ground cover ranges from as little as 10% to 100%, with the average being 56%. On those plots that where randomly tested for hydrophobicity, 50% were weak, 30% were moderate and, 20% were strong. Overall, 75% of the plots observed were above 50% effective ground cover (the R-2 Soil Quality standard for effective ground cover as described in FSH 2509.18 Soil Management Handbook, R2 supplement No. 2509.18-92-1).

There is additional monitoring being conducted within the burn salvage areas by private citizens as part of a local PLP collaborative group (Public Lands Partnership). Some data is available, however at the time of this report preparation, it has not been reviewed by the Forest Service.

Some casual observations have been made on areas aerially seeded within the FS portion of this fire, but the level of success has been difficult to determine. Often times it takes two growing seasons to observe any results of perennial, native species emergence.

Review of timber sale contract and related road contract daily dairy documentation.

Timber sale contract folders were reviewed on 3 timber sale areas that had ground disturbing activities occurring during 2003. These were Hubbard #2 on the Paonia District, Ouray Springs on the Ouray Ranger District, and the Buffalo Fork Sale on the Gunnison Ranger District. The documentation reviewed demonstrates that measures to protect soil and water resources were being considered and being modified to be more effective through the contract administration process. Daily dairy entries for timber sale activities for the Hubbard #2 indicate suspension of harvest activities due to wet conditions. Other entries indicate direction to avoid stream areas, and identification of special considerations around the Overland Ditch. Also discussed was slash placement for erosion control, and flagging of skid trail and temporary road locations. On the Ouray Springs Timber Sale area, review of the road engineers' contract entries indicate close construction and reconstruction monitoring to assure correct contract adherence, which resulted in minimal detrimental impact to the soil and water resources. Deficiencies were noted and repairs made promptly via this contract administration. Culverts were documented as cleaned and drainage recorded as functioning. In the records of the Buffalo Fork sale area, evidence was found of approval of temporary road location, and temporary erosion control for over wintering. The need for additional rolling dips was identified and placed as needed to control water flow. All these indicate attention to site conditions and adaptability, which resulted in better control of the impact of these activities on the soil and water resources.

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

A Cooperative monitoring effort has been ongoing for at least 4 years in relation to the impact of Telluride's recent ski area expansion into the Prospect Basin area on high elevation wetland/Fens. This monitoring effort was initiated in 1999 when 5 fens were identified in the Prospect Basin area as part of the NEPA process. A local group concerned with the impact of the ski area expansion on these fens was formed. This "Prospect Bowl Fen Protection Oversight Committee" consisted of one member of each of the towns of Telluride and Mountain Village, San Miguel County, Telluride Ski & Golf Company, a member of the public and representation from the US Forest Service. This committee hired Dr. David J. Cooper, Department of Forest, Rangeland and Watershed Stewardship, Colorado State University, to develop a monitoring program to assess fen conditions prior to, during and following ski area expansion. This was carried out during 2000-2003, with an annual report produced. As a result there is a very detailed, high quality data set dealing with fen hydrologic regimes, geochemistry, vegetation and tracking of carbon processes. This may be the most complete data set of

these processes in high elevation fens anywhere in the Western US. This data has documented that this ski area expansion was performed in a manner that has not affected the hydrologic, geochemical, sediment inputs or vegetation functions of these fens.

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.

8. 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 FY2003 the Forest made great strides in implementation of the three travel plans. The Travel Management program is one of the top three emphasis programs. The Forest spent nearly $200,000 in new travel signs, gates, personnel salary and decommissioning unneeded routes in FY2003. The District that made the largest gain in this area was the Norwood Ranger District. Over 500 new travel management signs were installed during the summer.

Funding of Travel Management is 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. In effect, $200,000 was taken away from road and trail maintenance projects in FY2003.

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 increased 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 $27,500 per mile for a native surfaced road in moderate terrain. The average cost for reconstruction is about $15,000 per mile per lane native surface road. For aggregate surfaced roads are nearly $40-50,000 per 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 assement 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).

Assessments of conditions and public recommendations are being prepared for each of the five geographic areas. Each assessment will be divided into three parts:

Part 1--Comprehensive overview of ecological, social, and economic conditions. This will be an objective technical compendium of historic and current conditions, as well as important trends related to key issues, resources, and revision topics. .

Part 2--Summary of key findings for each geographic area. This section will summarize trends, forecasts, and management implications. Included will be discussions of management concerns, challenges, and tradeoffs to be considered in future management decisions.

Part 3—Summary of Recommendations for Plan Revision. This section will be a synthesis and interpretation of the various stakeholder suggestions related to desired changes, superimposed on the technical findings. During the community meetings, stakeholders expressed a huge variety of opinions and preferences for future management. Much of this input was conflicting or contradictory. This section represents our first attempt to reconcile this input and put forward a preliminary proposed action toward desired conditions. The proposal will feature potential changes in management themes and suitable uses for the landscape units studied by the public during the community meetings.

During the fall of 2004, we plan to return to all the communities and present the three-part geographic area assessments. Stakeholders will be invited to comment on both the technical findings and the proposed changes in the strategic forest management plan. The Forest Service will ask whether we heard and considered the public's input, and what further adjustments are needed in the proposed action. This is still an informal, pre-NEPA, phase. This extra step in public review will allow us to issue a formal draft plan that is highly representative of public comment. Again, one of our chief goals is to operate on the principle of no surprises. Status of Plan developments are reported on the Forest Web site.

The Final Plan is scheduled for release in late 2006. The key issues regarding the currency and sufficiency of the Forest Plan are being addressed in the revision.

In the meantime, a Forest Plan amendment related to maintaining viable populations of native vertebrate species of wildlife will be undertaken. The Forest Management Indicator Species list will be reviewed, and the standards relating to habitat capability, problematic as reported above and in previous Monitoring Reports, will be reconsidered.

RESEARCH NEEDS

No additional research needs were identified through this report.

LIST OF PREPARERS

John Almy, Forest Hydrologist
Ken Anderson, Forester
Jeff Burch, NEPA Coordinator
Kathleen Moore, Recreation/Special Use Program Manager
Jim Dunn, Forest Lands and Minerals specialist
Tom Condos, Forest Engineer and Minerals Staff
Tom Holland, Forest Wildlife Biologist
Terry Hughes, Forest Soils Scientist
Rick Oberheu, Forest Fire Management Officer
Floyd Reed, Forest Range Specialist
Nita Ridgeway, Budget Staff
Linda Lanham, Minerals Program Manager

Carol Howe, Forest Planning Assistant
Christopher James, Fisheries Biologist
Clay Speas, Forest Fisheries Biologist
John Moore, Fire Planner
Carmine Lockwood, Planning Staff

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.