

FY 2008 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 GMUG embarked on the Forest Plan revision project. The Forest planning team, as well as many other Forest employees, gathered information and public input to move forward with Forest Plan revision process. The comprehensive public involvement and collaborative process included several iterations of preliminary plan development, review and comment by the public. Many of the products from this work were released in July 2006 and are available for review on the Forest internet site. (<http://www.fs.fed.us/r2/gmug/policy/plan>)

During this time of the GMUG Forest Plan revision, the Forest Service adopted the 2005 Planning Rule and the GMUG's version of a proposed Forest Plan revision under that rule was released on March 16, 2007, starting a 90-day public comment period. On March 30, 2007, a U.S. District Court in California ruled the Forest Service's adoption of the 2005 Planning Rule violated government statutes. Consequently, the public review and comment process related to the GMUG March 2007 proposed Forest Plan revision was suspended.

The agency adopted a new Planning Rule (2008). However, suspension of the GMUG proposed Forest Plan revision continues while the Forest Service works to complete a rulemaking effort based on Colorado Roadless Petition. The draft rule and EIS were released for public review and comment on July 25, 2008, with completion anticipated in summer 2009. The GMUG recognizes the need to improve and update the existing Forest Plan, but will continue to manage National Forest System lands under the 1991 amended Land and Resource Management Plan until we can commence and complete a plan revision under a stable planning framework.

It is my finding that the current Plan's standards, guidelines, management prescriptions, and other direction are adequate strategic management guidance for the Grand Mesa, Uncompahgre, and Gunnison National Forests during the pendency of the Plan revision effort.

/s/ Charles S. Richmond
CHARLES S. RICHMOND
Forest Supervisor

July 7, 2009
DATE

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 2008, as in prior years, were substantially below Forest Plan projections in many areas.

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

Table I - Outputs of Goods and Services

Outputs & Services	Units	FY 2008 Accomplishments	FY 1991 - 2007 Avg Annual	Forest Plan Projection
Recreation				
Trail Construction & Reconstruction	Miles	8	24	50
Wilderness				
Wilderness Mgmt	M Acres	555	555	515
Lakes Restored	Acres			
Wildlife/Fish/TES				
Inland Lake Habitat Enhanced/Restored	Acres	6	10	
Inland Stream Habitat Enhanced/Restored	Miles	12.5	13	
Acres of Terrestrial Habitat Enhanced	Acres	3934	3417	2000
Range				
Grazing Use (Livestock)	MAUM	244.3	232.8 (FY07)	300
Non-Structural Improvements	Acres	1200	1365	2500
Timber				
Conifer Sawtimber	MMBF	5.7	4.1	21.0
Conifer POL	MMBF	0.6	0.6	2.4
Aspen POL	MMBF	5.2	5.3	15.0
Firewood & Other	MMBF	2.1	2.3	7.0
Total Offer	MMBF	13.6	11.4	45.4
Reforestation	Acres	626	1487	870
Timber Stand Improvements	Acres	182	437	200
Minerals				
Leases and Permits	Number of leases, NEPA decisions issued, permits approved, operations administered to standard	421	177 (FY07)	189*
Locatable Minerals	Operating Plans	17	N/A	100
Protection				
Fuel Treatment	Acres		3,673	2,000
Lands				
Land Exchange	Acres	112	1,482	240
ROW Acquisitions	Cases	2	N/A	8
Landline Location	Miles	25	18	20
Soils				
Soil/Water Improvements	Acres	31	65	76
Facilities				
Road Construction & Reconstruction	Miles	26.6	11	61

Revenues				
Returns to Treasury	\$ M	3,823.9	N/A	
Costs				
Total Budget	\$ M	18,993.9	N/A	

**Increase based on pending lease/license applications*

2. NEPA Compliance

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

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 (VQO) being met?

Structures: Over the 2008 year, the Forest reviewed final drawings for the installation of the new Red Lady restaurant on the Red Lady ski lift of the Crested Butte Mountain Resort (CBMR). While the building design was a fine example of conforming to the Forest Service “Built Environment Image Guide (BEIG), the ski area owners have put the construction of this structure on hold. They have decided to pursue a different smaller scale restaurant at the base of the Twister ski lift, the Ice Bar restaurant. The proposed restaurant will replace a currently existing restaurant in the same location. The existing building is an A-Frame structure which does not meet CBMR’s architectural branding standards nor the BEIG. While the proposed Ice Bar structure will be nearly twice in square footage size as the existing restaurant to accommodate accessibility standards and expected increased use, the visual presence of the anticipated design will be a welcomed improvement and should echo some of the same design elements as the Red Lady restaurant. The proposed development will not exceed its VQO, and will be in keeping with scenic quality for ski area.

The Montrose Bunkhouse was also designed in 2008. This 10 person bunkhouse will be located on BLM land within the town of Montrose. Although the building is within residential and commercial zones, attention was still placed on the exterior visuals of the building to blend with adjacent BLM structures and provide a pleasing stucco motif. The building should be constructed by the end of summer 2009.

Another order of seven CXT toilets has been placed, consistent with the forest adopted styles of Cascadian (general recreation sites) and Rocky Mountain Style (along scenic byway corridors). All toilets have been sited to best fit the landscape. These toilets will be installed in 2009/2010.

A construction package was designed and awarded in 2008 for the reconstruction of Island Lake Campground. The campground design was to accommodate ATV users and increase the availability of electric hook-ups to some of the sites. In addition, the Granby trailhead access will be rerouted outside the confines of the campground to decrease conflict between day and over night use. The route for the Granby jeep trail was carefully designed to have the least visual impact on the adjacent campsites as well as the summer home sites.

Beaver Lake Campground received a facelift in 2008. All 12 campsites received some site work, and new table and grill replacements. Fences were reconstructed and structures were repainted. While still considered a rustic level 3 developed campground, the sites appearance was improved. Similar grill replacements occurred in Rosy Lane and One-Mile campgrounds.

The Mesa Lakes Recreation area much of the Grand Mesa continues to improve its visual quality and has achieved its prior designations of retention and partial retention. Areas impacted by campground construction, hazard tree removal, timber sales and blow-downs have recovered. While some evidence of disturbance still exists, it does not dominate the valued landscape character being viewed. The surviving planted trees and shrubs continue to aid the appearance of the landscape.

Timber Sales/Fuels Reduction: The Tri-State vegetation treatment (burning, hand and commercial harvest, mechanical) has created a temporary increase in negative visual effects to the surrounding forest landscape. Tree health prior to sale was very poor, resulting in a sweeping panorama of mostly dead, dying, diseased and highly stressed trees. The purpose of the proposed action was to reduce the threat of catastrophic fire along the Tri-State power line by treating the vegetation along either side of the power line corridor. The Landscape Character of the area including and surrounding the corridor, has temporarily diminished in scenic value due to increased disturbance of the natural resources and increased visibility of constructed features within the visible landscape, particularly during treatment operations. However, given the fact, that this area is designated as maximum modification, the treatment of the vegetation did not exceed its VQO.

Although the disturbance associated with the cutting/burning activity did temporarily decrease the scenic integrity of the landscape, the new spruce/fir growth sprouting out is beginning to improve the views. Aspen green-up will further aid recovery of the visual landscape. In addition, continued regeneration will improve visual quality in the long term by improving forest health and breaking up the stark straight tree line of the power line with a more feathered appearing power line corridor.

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Are ROS recreation settings being retained?

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

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

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

We continue to have significant concerns regarding the impact to ROS from the pioneering of routes and access into previously inaccessible areas by ATV's. Lower class trails and what might have been user-created paths are being discovered due in part to the sheer number of recreation users. This is having a significant impact on the character of these areas and is resulting in "ROS creep" towards the more developed/impacted settings of roaded natural and rural and away from the semi-primitive end of the spectrum. The Grand Mesa Travel Plan, and the Uncompahgre Travel Plan addressed this. The Gunnison Travel Management Plan, still being completed, addresses all known travel routes and will designate status of each travel route for continued use and the type of use permitted. The Grand Mesa Travel Plan has been in effect for 13 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 7 years and is slowly making a significant difference. ATV and motorcycle use is being limited to designated routes. Compliance from users is improving, but we still experience intrusions into closed areas by motorized vehicles, primarily during the hunting season. Implementation of signage and road closure facilities is still not fully completed. The 2001 Gunnison Interim Travel decision restricted motorized and mechanized travel to existing routes, is in its 8th year of implementation, and has produced similar positive results in terms of reducing the amount of off-route use and new user created routes.

Are 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 projects that are undertakings under the National Historic Preservation Act regulations (36 CFR 800) receive cultural resource assessments prior to implementation. If needed, inventories are conducted and known sites in proposed project areas are re-visited and monitored. 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 consultation about the Forest's findings for eligibility and determination of effect. All sites considered eligible, or that need further data to determine eligibility, are avoided during ground disturbing activities except in special circumstances, like low-severity prescribed burning, in which it has been determined that the activity will not damage certain kinds of site materials. 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 on Historic Preservation, and are accompanied by consultation with appropriate interested parties, such as Native American tribes.

In 2008, the Forest or contract personnel working for project proponents re-visited approximately 43 known sites, recorded 200 new sites and isolated finds and conducted new archaeological inventory on about 8400 acres in response to proposed activities or projects, with SHPO consultation about effects on sites taking place on close to 100% of these inventories. In addition, monitoring of heritage resources including some of the forest's highest-priority archaeological sites was conducted, some of it in support of future travel management planning and livestock grazing plans. A number of significant prehistoric structure sites were investigated and monitored as part of a Stage Historic Fund-sponsored research project in Montrose County.

Results of monitoring of sites for the Gunnison travel management planning showed that in general, prehistoric sites that have been recorded in the past have varying condition now. While some sites have disappeared to become dispersed or impacted over time, others are very much as recorded and show little change. Generally, Forest Service activities did not cause much impact to the sites in the sample, but unregulated activities such as forest recreation use and natural decay and soil movement processes accounted for the most changes seen. Effects to prehistoric sites from historic grazing over the past 100 years were also noted, but the cultural resources showed no recent impacts and were in stable condition.

Are unauthorized use or natural agents damaging or destroying cultural resource properties?

Heritage resources are continually receiving impacts that vary in degree according to the amount of exposure to wind, water, heat, and other natural agents. Prehistoric and historic subsurface deposits tend to be naturally protected until exposed by erosion or vandalism, and surface remains can be protected if under a rock shelter or overhang. Standing historic buildings and features are impacted by moisture, weather, and animals (both wild and livestock). Humans impact sites directly through vandalism, theft, fires, littering, and illegal excavation/collecting, and indirectly through wear and tear, and compaction causing erosion in popular areas or sites including concentrated off-road vehicle areas. Systematic site monitoring suggests that a small number of sites are significantly negatively impacted each year from natural and human causes, such as erosion, decay, fire, and illegal vandalism. Most of the Forest's standing historical structures suffer from decomposition/deterioration caused by time and are gradually becoming less and less intact. One case of intentional damage due to vandalism to a prehistoric site from spray paint vandalism was reported in 2008.

Wilderness

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

Observations reported in the FY96 Monitoring report concerning prescribed natural fire, obsolete standards and guidelines, and campsite conditions are still valid.

Revision of Special Orders for the GMUG Wilderness Areas were completed in 2007. The Orders were reviewed for consistency and to determine if they reflected current needs. Coordination occurred with adjoining Forests with shared Wilderness Areas. Changes included smaller group size limits, restricting recreation stock use near water, and pet restraint specifications

In 2004 the mandatory self-registration program for the GMUG NF side of the Maroon Bells/Snowmass Wilderness Area continued in an attempt to monitor wilderness use levels. The Gunnison National Forest continues to monitor visitor use originating from the GMUG NF side through the self-registration program.

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

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

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

Monitoring of outfitter/guide designated camps and major access routes occurred to assure compliance with special use permit terms and conditions related to resource conditions and group sizes.

4. Wildlife

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

For most species for which data is available to make this determination, populations are supported at sustainable levels across the Forest. Mule deer populations are improving somewhat over the population levels recorded for the time period prior to the year 2000. However, mule deer populations in the Gunnison Basin were substantially reduced by the severe winter of 2008. The State of Colorado has reduced the number mule deer tags available to hunters to begin re-building these populations. Bighorn sheep populations are stable with some declines observed in some populations, particularly the Desert Bighorn. This decline may have resulted from the Deserts mixing with domestic sheep. The Forest did implement a "risk assessment" on San Juan/Ouray landscape on seven (7) sheep allotments designed to minimize potential interaction of domestic and wild sheep.

This Forest-wide MIS assessment has been updated to reflect habitat changes that have occurred since June 2001. Data is limited to determine population levels for the pine marten, goshawk, red-naped woodpecker, Brewer's sparrow, Abert's squirrel, common trout, and the Merriam's wild turkey. Goshawk and Abert's squirrel population surveys continue on some ranger district containing habitat for that species. Goshawks are now being monitored using a Regional Survey/Database approach.

An intensive monitoring program continues on the Forest for small forest owls. This monitoring effort has been ongoing for 14 years and has resulted in the gathering of important population data primarily for the boreal owl, saw-whet owl, and flammulated owl. FY2008 saw a decrease in the number of nests found compared to the mean. One boreal and four flammulated nests were recorded to have been successful. Approximately 10,000 acres of habitat are monitored annually for these Forest Owls.

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 lynx, old growth, edge, snags, down woody material, and vegetative composition and structure. Two projects were audited by the Regional Office for consistency with the Lynx Conservation Assessment Strategy (LCAS). Both projects were found consistent with the LCAS. 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 big game habitat improvement projects on the Forest will substantially increase the acreage of vegetation manipulation on the Forest.

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

Habitat effectiveness is limited primarily by open road density. Some areas on the Forest, are less than the objective of 40% (or higher for specific management areas) for habitat effectiveness for elk and deer. Approved travel plans are in place on the Grand Mesa and Uncompahgre National Forest's. The Gunnison National Forest Travel Plan has been initiated and is scheduled for completion in 2010.

Monitoring of selected MIS species was done on several districts in 2008. The results of these are summarized below.

Goshawk

2008 Northern Goshawk/Other Raptor Nest Monitoring Summary

Northern Goshawk (*Accipiter gentilis atricapillus*) nest surveys, broadcast calling and ground nest searches were conducted using the Forest Service Northern Goshawk management guidelines developed by Reynolds et al. (1992), with inventory protocols established by Bosakowski (1999) and Kennedy (2003).

A. Gunnison Territories:

A goshawk territory as defined by Reynolds (1992) refers to the area defended by a pair of goshawks and may not include a nest. At the start of the 2008 season there were twenty-three known goshawk territories within the Gunnison Basin on Forest Service lands. During the spring through the fall goshawk surveys and/or other project work, four new active territories were found. Territory occupancy was determined by observing an active nest, nesting activity within the past 5 years or adults observed on territory. Thirteen territories were active in 2008. Seven other territories are classified as historic with no goshawk nesting activity in the past 5 years. Four other nest areas need to be confirmed in 2008 for raptor species occupancy but have a high probability of goshawk occupancy based on the nest sites. Active territories without active nests reflect the presence of non-egg laying goshawks or alternate nests unknown to field personnel. Goshawk territory status for 2008 is summarized in the following table.

2008 Goshawk Nest Status

(does not include nests that were lost prior to the 2007 season)

Table 3:

Nest Status	# Nests
Active	6
Recently active	5
Inactive	14
Intact	14
Partial	12
Gone	3
unknown	2

B. Paonia RD Territories:

On the Dyke Creek Territory all old nests were located and one other nest located, however, no goshawks were located. At the Johnson Gulch territory one nesting pair was monitored and one nestling was produced. No other Paonia territories were monitored due to time and money constraints.

C. Norwood/Ouray RD Territories:

On the Norwood/Ouray districts over 400 acres of project acres were surveyed using calling survey techniques, no goshawks were located. Two active goshawk nests were located on the Norwood Ranger District.

Abert's Squirrel

2008 surveys were repeated (same as 2007) on 6,000 acres of habitat that were inventoried using a feeding index sampling technique. Results indicate a stable to downward trend in squirrel populations throughout the sampling area from 2005-2008.

There appears to have been a decline in the abundance of Abert's squirrels in the past couple of years. 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 River Basin has been in a drought (summer and winter) for several years. This is the primary suspected contributory factor regarding the apparent decline in the Abert's squirrel population.

Neo-tropical Migrants and Other Bird Species

Breeding Bird Surveys

The Norwood, Ouray and Grand Valley Ranger Districts continued to conduct breeding bird surveys on seven survey routes located on the Uncompahgre Plateau. The routes were established in 1998 with the goal of surveying them annually. One of the purposes of the surveys is to sample various habitats on the Forest for the presence of MIS and other species of interest. Data from these surveys is sent to the Colorado Bird Observatory.

Pine Marten

A.Gunnison RD:

All pine marten survey stations were chosen based upon marten habitat requirements, the suggested distance between sites and continuity between box locations. The Zielinski (1995) survey method requires the placement of track plate boxes within suitable habitat, with each box ideally separated by 0.5 miles (804 m.). Stations were placed within 4B Habitat Structural Stage (HSS) conifer and a few aspen stands in the additional Cochetopa Hills Project Area. Conifer 4C stands are not present in the area. Suitable timber stands were identified using GIS coverages previously generated by the Gunnison District forester through aerial photo interpretation. The aerial photos used were taken in the 1980's. The District forester is currently updating the HSS data. The most current HSS data available was used for determining pine marten station locations. Potential sites were confirmed in the field and adjusted accordingly. Due to the low mesic aspect of the landscape an effort was made to place stations near any water found. Distance between stations was .5 miles (804 m.) apart unless the HSS, habitat type, roads or large open parks made the location unsuitable for potential pine marten detection. Two stations were located within 3B and 4A stands to maintain continuity across the landscape.

Thirty-two pine marten detection stations were placed in conifer cover types and 2 in aspen. Spruce /fir were the predominant tree species present in stands surveyed. Aspen was frequently a minor component within the spruce/fir stands. Only two pine marten stations had Lodgepole pine mixed within the stand. Some spruce/fir units identified as 4B were not surveyed due to the small size of the unit and in some cases being surrounded by extensive meadows.

All stations had negative results for pine marten. Pine martens were not observed or scat found. The landscape lacks consistent mature conifer stands, down wood and regular mesic features.

Other mammals recorded at stations were red squirrels, chipmunks (species unknown), long-tailed weasel (1), golden-mantled ground squirrels, mice, bear (1) and a bushy-tailed woodrat. Chipmunks and red squirrels were the most frequently recorded mammal. A bear flattened 2 boxes within twenty-four hours after placement. The bear did not return to the boxes.

Estimated acreage surveyed during 2008 for pine marten was 3,000 ac.

B. Paonia Ranger District:

No pine marten surveys were conducted in 2008.

Brewer's sparrows and Red-naped sapsuckers

Outside of individual project areas and along the Breeding Bird Survey routes, surveys were not conducted for these species.

Merriam's wild turkey

Data on this species is collected by the Colorado Division of Wildlife. Wild turkey population on the Forest seems to be sharply increasing and populations are pioneering into previously vacant habitat.

Common trout

In 2008 the Forest completed species and conservation assessments for brook, brown and rainbow trout (GMUG 2008). These assessments summarize data collected from 2000-2008 from over 100 stream reaches on the GMUG NF. Though no fish scale or otolith data has been collected to determine age class distribution, both juveniles and adults are regularly sampled. Droughts from 2002-2004 have affected populations of common trout but the recent normalization of precipitation has resulted in populations rebounding in many areas. In addition, because common trout are so widely distributed they appear resilient to natural disturbances.

The assessments also compared known populations of common trout to watershed integrity classes established on the Forest in 2006. Watersheds were divided into four integrity classes range from class I – highest integrity to class IV – lowest integrity. Seventy-six percent of the rainbow, 61% of the brook trout and 48% of the brown trout populations occur in Integrity class I and II watersheds. The assessments recommended focusing watershed and in-channel restoration efforts on lower integrity watersheds.

5. Fisheries

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

Culverts on perennial streams were inventoried to determine if they allow free passage of aquatic organisms and maintain floodplain function. Between 2005 and 2008 over 300 culverts were inventoried, which represents approximately 75% of the known culverts on national forest administered lands. Of the 300+ culverts, 232 have been assessed using the FISHXing vers. 3 software. Sixty-four percent of the culverts were determined to be provide aquatic organism passage, 24% were determined to be not to provide passage and 11% are border line and require additional assessment. Fish species known to be affected include brook trout, brown trout, rainbow trout and Colorado River cutthroat trout. The Forest is actively working to replace/upgrade these pipes to restore passage for aquatic organisms.

Stream habitat conditions are summarized in GMUG (2008). Approximately 62.3 miles of stream on 224 reaches were inventoried between 2001-2007. This data represents the best available data on fish habitat conditions on the GMUG. The data establishes a baseline in which future monitoring can be assessed.

6. Stream habitat

Are we meeting standards and guidelines for minimum flows?

Not as stated in the current Forest Plan. The current Forest Plan standard prescribes bypass flows as a primary means of protecting flow dependant values that are impacted by diversions on the Forest. This has been a very contentious issue, which has had major ramifications regarding State versus Federal jurisdictional questions. In FY08 the Forest did not condition any special use permits for a water diversion with bypass flow requirements.

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. In FY08 Forest staff continued to monitoring flows in Horsefly Creek and conducted additional field work in anticipation of submitting a minimum flow recommendation to the Colorado Water Conservation Board in FY09.

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.

Significant attention and effort was directed in FY08 to the need for re-operation of the Ames Hydropower facility that operates under a FERC license issued to Public Service Company of Colorado. Effects to stream flows is a major issue, which has resulted in instream flow assessments for both the Lake Fork and South Fork of the San Miguel river. The results of these studies are being used for the purposes of both identifying conditions 4(e) to be imposed upon the new Federal license scheduled for decision in FY09 and/or negotiations with the licensee to voluntarily resolve the resource issues through agreements for re-operations as the affect stream flows.

7. Threatened, Endangered, and Sensitive Species

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

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

Uncompahgre Fritillary Butterfly (UFB) – Endangered

Population Monitoring is and has been an essential part of the UFB Recovery Program. In 2008 population monitoring was again implemented in two forms. The most general included all known colonies and simply involved confirming the presence or absence of adult UFB during the flight period. Transect data to estimate actual abundance was gathered for colonies on three major sites on the Forest.

Quantitative Results - In 2008, 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 2008 UFB flight period. There were some sub-colonies also where persistence was not detected, however, persistence was evident at least at some sub-colonies. Numbers of butterflies were typically low at all sites and may be indicative of a decline in the odd year populations. Long term data regarding most populations is still unavailable since most of these populations were discovered in the last six years.

Recommendation for future monitoring: It is recommended that monitoring continue into the future to develop long term records that will enable the hopeful recovery of this species. The Fish and Wildlife Service will be assessing the need for annual monitoring in 2009 and may reduce monitoring efforts to every other year.

Bald eagle

The Bald Eagle has been taken off the endangered species list since last years monitoring report was completed. 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 continuing to be monitored by the Colorado Division of Wildlife.

Mexican spotted owl (MSO) – Threatened

The Norwood, Ouray and Grand Valley ranger districts did not have any projects proposed within potential MSO habitat, therefore no presence/absence surveys were conducted in 2008. Surveys for this species are limited to proposed project areas in areas mapped as potential habitat on the Forest. Mexican Spotted owls are suspected to be on the west side of the Uncompahgre Plateau but no species or nests have been found.

Boreal Western Toad – Sensitive (Previously a candidate- may be reviewed again in the future)

Nine boreal toad populations have been found on the Forest (see table below). A new population was discovered in 2008 by CHHP in Cow Lake on the Gunnison Ranger District. The population at Cow Lake has been confirmed to be positive for chytrid fungus and therefore it is at great risk of extirpation. Overall boreal toad populations have been declining primarily due to mortality from chytrid fungus.

SOUTHERN ROCKY MTN. BOREAL TOAD BREEDING LOCALITY MONITORING SUMMARY – 2008

Known Active Sites: 40

Locality Name	Site ID	Adequate Monitoring	Active Breeding	Minimum Adults	# of Yearlings	# of Sub-adults	Minimum Egg Masses	# of Tadpoles	# of Metamorphs
Elk & West Elk Mountains									
Triangle Pass	GU01	Yes	Yes	8/2/3	0	1	13	3000+	500+
West Brush Creek	GU02	Yes	No	0/0/0	0	0	0	None	None
Brush Creek	GU04	Yes	Yes	9/4/4	9	11	8	3000+	100-200
Upper Taylor River	GU05	Yes	No	4/2/0	0	3	0	None	None
Conundrum Creek	PI01	No	No	0/0/0	0	0	0	None	None
East Maroon Creek	PI02	No	Yes	2/2/0	10	5	2	1000-3000	50-100
Snowmass Creek (<i>new</i>)	PI05	No	Yes	0/1/0	1	0	0	None	50+
Cow Lake		No	Unknown						
Grand Mesa									
Buzzard Creek (<i>new</i>)	ME01	No	Yes	0/0/0	0	0	0	3000+	500

* No breeding activity

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

Multispecies amphibian surveys were conducted at numerous locations on the Paonia district during 2008. No boreal toads were located at any of these locations.

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. Lynx management guidelines are incorporated into all Forest activities.

Uintah Basin Hookless Cactus – Threatened

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

Gunnison Sage Grouse – (Sensitive Species-previously a candidate species and will be reviewed in the future)

The Colorado Division of Wildlife completed lek counts on all known leks on and adjacent to the GMUG in 2008. CDOW researchers captured and radio collared adult birds to determine reproductive success and dispersal within the study area. .

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

Mist net surveys for bats were conducted on the Paonia district for the first time in 2008. Ten sites were surveyed, including several sites near current or future projects. Six species of bats were located, none of which are FSS species. A detailed Powerpoint presentation on the survey efforts is currently available.

Additional Species

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

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

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

Colorado River cutthroat trout – The GMUG in cooperation with members of the Colorado River Cutthroat Trout Conservation Team members have been collecting tissues from purportedly pure population of Colorado River cutthroat trout. In 2008 biologists from the GMUG collected tissues from nearly 300 fish from 12 populations. Samples were analyzed by Pisces Molecular in Boulder Colorado. Rodgers (2009) summarized state-wide results of genetic testing. Currently there are 40 documented populations of greenback cutthroat trout in Western Colorado. Greenback are federally listed species which until recently were only known to exist east of the Continental Divide in Colorado. Of these 40 populations 23 are known to occur on the GMUG with most of the populations centered on or around the Grand Mesa. Because these fish are federally listed in Colorado,

management activities potentially affecting greenback populations will be assessed in accordance with the Endangered Species Act. Further genetic testing will be conducted in 2009.

General Information:

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.

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

8. Riparian

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

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

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

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

Beginning in FY07 the Forest began development of an ecological classification for riparian areas that will be used to determine site potential as compared with current conditions. This is envisioned as a multi-year project with the Forest Ecologist doing the majority of field work and manuscript preparation. Work for the San Juan Mountains portion of the Forest was completed in FY07 and 08. Scorecards are being developed. Expansion to other parts of the Forest is planned when the San Juans Landscape is finished.

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

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

9. Range

Are we meeting the utilization standard in the Forest Plan?

All recent Allotment Management Plans developed on the GMUG include standards at or above utilization standards set in the Forest Plan. Environmental analysis has been completed on about 188 allotments on the GMUG since 1995. This effort is expected to result in the application of standards that will improve long-term rangeland health Forest-wide.

On a few allotments utilization standards were not meet. Actions to correct situations which lead to over use on these rangelands are underway. Most of the newer AMPs use a combination of either stubble height standards or grazing response index to manage grazing use.

In 2008, we monitored and evaluated approximately 182,791 acres in preparation for a range NEPA analysis. Additionally, 608,175 acres were managed to standard as determined by monitoring efforts. Rangelands are generally stable or in an upward trend, with isolated instances of downward trend.

Rangeland management personnel monitor achievement of these standards by rereading and establishing permanent transects 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.

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 weed program relies on the actions laid out in 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. 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 30,000 acres on the GMUG are affected by 15-20 species of noxious weeds, including several on the State "A, B and C" lists.

The following table lists the current invasive plant species inventory for the GMUG. Information is from a combination of Forest Service and county inventories. The majority of inventoried infestations occur along roads.

A list of invasive Plants for GMUG NFs include:

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	Dalmatian toadflax-broadleaf	57
Spotted knapweed	1,121	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	Sulfur Cinquefoil	1,000
		TOTAL	24,826

Introduced ornamental species like yellow toadflax and oxeye daisy are a growing concern around private land inholdings, particularly in the Mount Crested Butte, Mountain Village and Powderhorn areas.

10. Timber

Are regeneration survival and stocking standards being met?

Regeneration surveys are being conducted one, three, and/or five years after final harvest on sites that are to remain in a forested condition. In 2008, 835 acres were certified as meeting or exceeding regional standards for successful regeneration.

Tree planting continued in the Burn Canyon area of the Norwood Ranger District where catastrophic wildfire occurred in 2002. Surveys were conducted on 839 acres after the first or third growing season. After the first year following planting ponderosa pine, 77 percent survival was attained. After the third year following planting of ponderosa pine, 80 percent survival was attained. Fifth year surveys completed in Burn Canyon attained a survival percent of 59 percent. This shows a significant improvement over the previous years 3rd and 5th-year survival rates.

The forest has been monitoring this ongoing work for 6 years. The planting stock was changed to containerized seedlings a few years ago which is showing increased survival rates. Shade tubes have also been implemented, which also appears to have 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. The harsh planting conditions at Burn Canyon created by wildfire have provided an increased challenge to reforest those sites.

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 future tree planting work continues on National Forest lands.

11. Soil and Water

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

Yes. Ground disturbing activities routinely include proven design measures that prevent or minimize impacts to soil and water resources. These practices are prescribed by both Forest water resource specialists or project designers/administrators who have been trained by water and soil technical personnel. 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; energy development activities; unmanaged recreation; and livestock use in our watersheds. For livestock-related actions this is being done as grazing plans are updated and Forest Service officials and operators agree to the details of annual operating plans. The management of the existing road network continues to be a challenge to the National goal of maintaining and restoring healthy watersheds. Also the watershed improvement program and road maintenance funds have been targeting roads which are resource problems for either closure (decommissioning) or correction of problems, i.e., surfacing, adding drainage, replacing drainage crossing, etc.

Construction of pipelines, well pads and access roads associated with energy development is a major workload element for the Forest. Impacts to soil and water resources has been a concern and on the ground activities are being monitored by both soil and water specialists, as well as project administrators, to determine if design criteria are being implemented as prescribed and whether they are effective at limiting impacts. Indications are that short term impacts are occurring from construction and use of energy development roads. The magnitude of these effects is influenced significantly by soil type and weather conditions. Once initial construction and development occur the impacts are greatly reduced to watershed resources and in some cases where existing routes were utilized the impacts may actually be less than before use by energy companies, because of upgrades in road drainage and surfacing.

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

12. Minerals and Geology

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

Locatable and Salable Minerals

Yes, operating plans for locatable and salable mineral operations 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. 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 for locatable minerals 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 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 minerals personnel are making a conscientious effort to properly administer their mineral operations.

The Gunnison Ranger District mineral material operations are primarily conducted by force account crews, Gunnison County Road and Bridge Department, and Federal Highway contractors utilizing the material for road maintenance, travel management, and watershed projects. Quantities and types of materials disposed of are reported annually. Rock sources and material sites are monitored by the District road and minerals personnel. The Rocky Brook, Murdie, Windy Point, and Kebler Pass (east) pits are used primarily for Schedule A road maintenance. Permits are issued for the Ohio Pass rock source for personal rock permits only, with a two (2) ton limit per individual per year. Only hand loading of materials is permitted. Borrow sites have been identified for Black Sage, Pitkin, Almont, Rosy Lane, and Spring Creek for rip-rap and fill material, as needed for spring flooding events. Large scale locatable minerals project located on the Gunnison Ranger District include the Mount Emmons Molybdenum Mine and Homestake Uranium Pitch Mines. Other locatable minerals with Notice of Intents are Lost Hawley, Jimona, Lookin Good and Taylor Park Placer. Several small scale intermittent locatable mining operations located across the Gunnison Ranger District require monitoring to check for recent activities. These operations include the Starving Flatlanders, Wrong Spot Again, Gold Bug, Gold Dyke, Blue Mountain, Blue Wrinkle, and Red Buck.

Leasable Minerals (Coal and Oil and Gas)

The Paonia Ranger District administers surface operations related to three underground coal mines in cooperation with the Colorado Division of Reclamation Mining and Safety, the Office of Surface Mining and the BLM. The mining companies each have some level of exploration drilling, methane drainage well drilling/operations, ventilation shaft construction/operation, and other activities occurring continuously. The coal projects are designed to meet the Forest Plan standards and guidelines for the particular management area in which the project occurs. This includes designing reclamation needs to support what is called the post-mining land use. Further, the projects are designed to fulfill the FS obligation in the federal coal program to protect non-coal resources.

The District has an on-going field inspection program for coal-related projects. During the summer field season, these projects are inspected several times per week (or as needed depending on activity level) for compliance with the terms of approvals, which include road use and access, wildlife resource effects and reclamation progress, among other items. Inspection reports, findings, and follow up needed and photos are prepared and kept in the District project files. Although there are isolated instances of non-compliance with the terms of surface use approvals, the companies have generally responded in timely fashions to correct the situations. Contemporaneous reclamation practices on exploration and methane drainage drill sites functions well, as site stabilization and revegetation are generally achieved within one growing season after reclamation activities. Forest and District staff review resource monitoring reports submitted by the mining companies to ensure that the surface

resources are protected, and that findings made in NEPA analyses are valid. The District reviews monitoring reports required by the CDRMS on mine subsidence, water resource monitoring and others. No specific items were identified to be inconsistent with NEPA findings or posed risk to non-coal resources on NFS lands.

The Paonia District also administers on-going operations at thirteen active natural gas wells, and three presently shut in wells. In 2008 a new well was drilled. On sites where active drilling occurred, the sites are inspected two or three times per week. For wells in production status, the well sites are inspected several times during the summer field season, and once during the winter. Items needing correction are sent to the operators after initial inspections, and follow up inspections are conducted to ensure corrections have been made. During 2008, gas operators were advised about general site maintenance, noxious weed control, and need for road maintenance.

The Grand Valley Ranger District administered six shut-in (not producing) natural gas wells, one reclaimed gas well location, and two new well pads. During 2008, the operators were notified about general site maintenance, signing needs, noxious weed control and water monitoring requirements, road maintenance needs. Items needing correction were sent to the operators after initial inspections, and follow up inspections are conducted to ensure corrections have been made.

The Ouray, Norwood and Grand Valley Ranger Districts administered the operations of a seismic exploration project on the Uncompahgre Plateau. No deviations from project approval conditions occurred.

Geology

The Forest completed a geologic road log of McClure Pass which adds to the Grand Mesa Scenic Byway Road Log completed in 2007, and the Kebler Pass Geologic Road log completed in 2006. The Forest administered the geologic interpretive sites at Slumgullion Pass and Ophir Needles. In addition, the Dry Mesa Dinosaur quarry was monitored. Additional excavation and interpretation of the pack rat middens in Cement Creek cave was done by a research scientist. Groundwater monitoring at fens within the Telluride Ski Area and 2 fens on Grand Mesa was done by outside parties. Outside parties were also permitted to conduct long term seismicity monitoring on the southern Uncompahgre Plateau and north of the West Elk Mountains, and monitor a landslide near a housing development near the forest boundary. The Forest initiated geologic interpretive work on Columbine Pass (Uncompahgre Plateau) paleo-gravel deposits.

In 2008, the Forest also completed a ground-water resource assessment and aquifer vulnerability study of the 760,000 acres currently available for oil and gas leasing. In addition, this effort compiled existing geologic and hydrogeologic data into the Forest's existing GIS database.

13. Transportation System

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

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

Listed below are the accomplishments/activities in 2008

Activity	Unit	Quantity	
		FS Appropriated Funds	Non-FS Appropriated Funds
New Road Construction of High Clearance Roads ML 1 & 2	Miles	2.5	
New Road Construction of Passenger Car Roads ML 3, 4 & 5	Miles	0.0	
Improvements to Existing High Clearance roads	Miles	4.4	
Improvements to Existing Passenger Car Roads	Miles	0.0	
Enhancement to Aquatic Organisms	Each	2.0	

Decommissioning of roads on the inventory **	Miles		25.9	
Decommissioning of user created roads **	Miles		112.1	
High Clearance Roads Maintained ML 2	Miles		525.0	335.0
Passenger Car Roads Maintained ML 3 & 4	Miles		531.3	865.0
Bridges Replaced ML 3, 4 & 5	Each		2	
Fatalities on FS Roads, Hwy legal vehicles involved	Each		2.0	
Trails Maintained	Miles		255.8	407.9
Trails Improved	Miles		25.6	

. ** Eighty percent of the roads decommissioned were scarified and seeded as part of the process to bring the land back into natural production. The remaining twenty percent were closed using informational signing and natural barricades.

Also, 234.42 miles of ML 2, 3 & 4 roads were treated for noxious weeds.

Coal mine operators constructed about 2.0 miles of single use road to access surface operations that support the underground mines. Public motorized use on these roads is prohibited. These temporary roads are decommissioned when no longer needed for the specific project.

Are we meeting standards and guidelines rehabilitation of temporary roads?

With the sharp reduction in timber harvest contracts, temporary roads have been reduced significantly. Temporary roads have been replaced with skid trails. When specified in a contract or part of the permit (lease) plan, rehabilitation of temporary roads is very successful. The rehabilitation is most effective if the road entrance is re-contoured and entrance discouragement techniques are utilized. Successful techniques in discouraging road use include positioning of selected trees at the entrance and placing slash in the roadway. The recent work on the Paonia, Norwood and Grand Valley Ranger Districts are excellent examples of rehabilitation. No change in FY08

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

During FY2008 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.

Apparent use of unauthorized routes is substantial on the Paonia district, and new routes are located often. Most closures appear to be functioning, with several exceptions. Most off-road use appears to be hunting-related and occurs between the start of archery season and closure of areas due to snowfall

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 several 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. Using these methodologies our observation is that in most cases, shorter duration grazing periods and managing for plant growth and re-growth as well as intensity and frequency of grazing provide better measures of sustainable forage use and rangeland health than utilization standards alone. Based on these observations, we expect to add additional monitoring guidelines in the upcoming Forest Plan revision.

3. Water

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

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

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

Overall the quality of the water on the Forest is considered to be excellent. It is our observation that the constraints imposed by the 9A Management Direction do effectively protect streams, water quality and fisheries habitat. The Colorado Department of Public Health and Environment has identified eleven segments of streams as impaired [303(d) listed] that are within or cross lands administered by the GMUG National Forest. All of these streams are listed due to heavy metals contamination from historical mining activities. While the State has not yet initiated development of TMDL (total maximum daily load) plans, there are several abandon mine land reclamation projects underway. The Forest has two active CERCLA projects. One is on a tributary to Coal Creek, near Crested Butte, CO., and the second is on Howard's Fork, near Ophir, CO.

During FY08 restoration projects were completed on 31 acres, which are intended to improve watershed health. The Forest had plans for treating an additional 10 acres, but due to significant national fires suppression expenditures, funds were redirected out of the restoration program to cover the cost of fires expenditures. These restoration activities were directed at road maintenance and decommissioning; stream channel restoration; closure of riparian dispersed camp sites,; and abandoned mine cleanup. The Forest is experiencing a decline in funding available for restoration treatments. This will significantly impact outputs. A similar decline in Engineering funds will also have ramifications in the ability to correct existing projects or, in the case of road maintenance, prevent problems from developing.

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 budget for hazardous fuels has been relatively stable, fluctuating around an average unit cost of \$110-\$130 per acre since the inception of the National Fire Plan (FY 2001-07). These unit costs lag behind the Forest's Accelerated Watershed/Vegetation Management Plan (R-2 AWRP, January 30, 2002) projections of average unit costs of between \$167-\$365 per acre as the forest shifted emphasis to the more difficult and complex acres associated with treatments in the Wildland Urban Interface (WUI). This disparity between the budget allocation and projected and actual cost has required the Forest to balance treatment approaches between the higher cost WUI and mechanical treatments with less expensive back country hazardous fuels reduction treatments. This decreases the total number of high cost, high priority treatments that can be accomplished in any given year. This also results in a shift in emphasis to current year implementation at the expense of out-year planning as the Forest strives to meet production goals for hazardous fuels acres.

A related issue is staffing. The Forest fire program was funded at less than MEL (Most Efficient Level) in FY 08. MEL is a budgeting and planning tool used by the FS at the beginning of the decade to develop staffing needs based on objective fire suppression criteria. Funding at a level below MEL has been a consistent trend since FY 2000. In addition, the Forest presently operates under a unified budget process, funding baseline staff specialist and support functions in a manner pro-rated across program areas. The result is that the indirect costs to both WFPR (preparedness) and WFHF (hazardous fuels) is higher than in previous years, having the net effect of decreasing program dollars to the ground. The challenge of modest budgets and increasing overhead and operational costs requires adjustments across the fire program areas to maintain core function.

Despite a declining budget in real terms (flat budget, increasing costs), the Forest was able to maintain program management oversight within the Montrose Interagency Fire Management Unit (MIFMU) organization (USFS, BLM, NPS) consisting of a FMO Suppression (BLM), a Unit Fuels FMO (USFS), 2 Zone FMOs (1 BLM and 1 FS) and dispatch services. Funding for Grand Valley Ranger District fire/fuels program (which is managed out of the Upper Colorado River Fire Management Unit (UCR)) provided for 2 prescribed fire and fuels specialists, a 4 person fuels crew, and 1 IA dispatcher.

Direction from the Regional Office stated that Forest units were to maintain Initial Attack (IA) preparedness to protect life and property commensurate with both fire danger and the National situation. Expenditures not meeting this mission were deferred. The Forest was able to staff all engines providing for 7-day effective coverage. Each Type Six engine was staffed with 3-personnel, and days off were rotated. MIFMU seven-day coverage was provided with the use of BLM engines by

overlapping and/or staggered work schedules, but not all FS engines were staffed all seven days. However, all FS engines were available for IA dispatch as needed. In addition, all engines were properly staffed with an Engine and an Assistant Engine Foreman which provided proper supervision. The authorized 5-person IA hand crew was funded this Fiscal Year. The Forest maximized opportunities to work preparedness (WFPR) personnel on WFHF (hazardous fuels) projects while still being available for suppression.

The GMUG NF experienced a very mild fire season during 2008 as record winter snowfall in the mountains resulted in a snowpack that lingered well into later summer in the higher elevations. The summer temperatures were warm and the region received less than average rainfall due to a weak monsoon pattern, yet the fuel moisture conditions remained near normal across most of the Forest. The diminished thunderstorm activity resulted in significantly less lightning-caused fires resulting in the lowest fire occurrence in the past five years. The Forest had 20 reportable fires for a total of 3391.8 acres burned. This was broken out as 16 lightning fires for 1516.6 acres burned; and 2 human-caused fires for .2 acres burned, and 2 Wildland Fire Use (WFU) fires for 1807 acres.

GMUG NF FIRES BY REPORTING UNIT

Unit	HUMAN		LIGHTNING		WFU		TOTAL	
	Fires	Acres	Fires	Acres	Fires	Acres	Fires	Acres
GMF* (MIFMU)	2	0.2	14	1561.2	1	424	17	1986.4
GVF** (UCIFMU)	0	0	2	0.4	1	1403	3	1405.4
GMUG NF	2	.2	16	1516.6	2	1807	20	3391.8

GMF*= GMUG NF in the MIFMU (Gunnison, Ouray, Paonia and Norwood RDs)

GVF**= Grand Valley RD with in the Upper Colorado Interagency Fire Management Unit (UCIFMU)

No fire restrictions were imposed on Federal lands within the unit in FY08. Press releases advised the public to continue to use fire carefully even though campfires were unrestricted. MIFMU continues to support county fire management and continues to urge counties to report and track their wildfires support and recommend similar reporting and tracking programs in other counties. The Ouray Zone assisted Cedaredge and Hotchkiss Fire Departments on the Redlands Mesa fire, which was located on private lands and burned 152 acres including 5 structures.

The local fire risk was low in 2008 so the GMUG fire resources were mobilized to assist with the large fires burning in Arkansas, New Mexico, Texas, Georgia, North Carolina, North Dakota, Arizona, Wyoming, Idaho, Montana, Nevada, Oregon, California, Utah, and South Dakota. This allowed for budget savings as the Forest resources were able to charge to the requesting incidents.

The GMUG NF entered its second year of managing Wildland Fire Use (WFU). There were two WFU fires on the Forest.

The Albin Draw Fire burned 424 acres and the Coal Canyon Fire (later part of the Mesa Complex) burned 1403 acres. The fires burned with varying degrees of success as they have complex effects upon different resources, but it was the first year the GMUG NF had landscape scale WFU fires to assess and learn from. These fires were discussed by local teams of resource specialist in After Action

Reviews (AAR) where different resource concerns were openly discussed that will enable more proficient management of WFU incidents in the future. The Grand Valley RD fire program, managed under the UCR, was part of a test unit working under the new Federal Wildland Fire Policy. This policy, which will be fully implemented in FY 2009, allowed for fires to be managed for both resource benefits and/or suppression as needed.

These 2 successful Wildland Fire Use Fires were a good start; however, long term fuel loading continues to build and departures in ecological conditions have trends that predispose the landscapes for insect and disease infestations and uncharacteristically severe wildfire in terms of size and severity. The new fire policy being implemented in FY 2009 will provide greater flexibility for managing fires for resource benefits and allow success application of fire for resource benefits even under difficult conditions.

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

National direction is to increase hazardous fuels treatment, particularly in the Wildland Urban Interface (WUI), while maintaining the pre-suppression program. By increasing the hazardous fuel treatment program, it is projected there will be a measurable reduction in wildfire size, intensity and effects in the future. The Forest's 5 year plan, plans for 10,000 acres annually over the FY 2007-09 period and increases to 12,000 acres for FY 2010-14. However, unit cost for both mechanical and prescribed burning continues to increase as treatable acres become more complex in terms of planning and implementation and therefore more expensive to treat. Forest efforts continue to concentrate on Communities-At-Risk, identified Wildland Urban Interface areas, municipal watersheds, and at high wildfire risk areas with a potential to cause irreversible effects to plant communities, ecosystems, watersheds, historical or cultural resources and Threatened and Endangered Species habitats.

The Fuels Management program on the GMUG continues to remain stable or slightly below the FY 2004-08 average. The FY 2008 WFHF (hazardous fuels) accomplishment included 7,087 acres of prescribed burning, 1,827 acres of Wildland Fire Use, and 1066 acres of mechanical treatment for a total accomplishment of 9,980 acres treated. All accomplishments by project and treatment type are recorded in the FACTS reporting system. By jointly managing the fire management program with the BLM, the Forest is better able to share expertise and conduct prescribed burns needed to meet WUI and ecological objectives. All project prescribed burn plans are current or have been revised to meet Forest Plan standards and policy direction.

Using the FACTS database the Forest also tracks integrated and partnership funded target accomplishment that contributed to either change or improvement of Condition Class. In Timber Management (NFTM) there were 69 acres of WUI mechanical treatment. In FY08 there were 701 acres of WUI mechanical treatment. Forest-wide 770 acres of other non-hazardous fuel funded projects were treated in FY 08.

Both prescribed fire and mechanical treatment were used across the unit in FY 08. Mechanical treatments ranged from chainsaw/hand piling to Fecon flail, hydroaxe and roller chop treatments. Prescribed burning typically occurred in grass/sage, sage/pinyon-juniper, Pinyon-Juniper woodland, oakbrush, and ponderosa pine understory fuel types, roller chopping slash and timber activity fuel piles. The past several years have received early and late moisture that has limited prescribed burn opportunities. On the Uncompahgre Plateau, many of the prescribed burn projects are occupied with

cheatgrass (*Bromus tectorum*), due to previous mechanical disturbances and in response to significant spring/fall moisture over the past several years.

Ranger District Totals	Prescribed	Fire Use	Mechanical	Total Acres	
Gunnison Ranger District	5866	0	365	6231	
Norwood Ranger District	631	424	0	1055	
Paonia Ranger District	165	0	215	380	
Ouray Ranger District	250	0	0	250	
Grand Valley Ranger District	175	1403	486	2064	
GMUG NF	Unit Totals:	7087	1827	1066	9980

The fuels management program on the GMUG rapidly expanded in the early part of the decade to meet the objectives of the National Fire Plan. The fuels management program is in transition and is shifting emphasis from previous priorities. In the past, the program emphasized prescribed burning for the treatment of post-timber harvest activity generated fuel reduction and range and wildlife habitat improvement. Fuel treatment related to timber harvest residue was primarily machine piling and burning on landings or in areas of large concentrations of activity fuels. The primary prescription for in-unit timber slash continues to be; lop and scatter of tops and limbs with whole tree skidding to landings. Lop and scatter is also the primary prescription for pre-commercial and commercial thinning areas. Broadcast burning of lop and scatter treatments was not widely utilized in the past, however this is changing. Prescribed burning was also utilized for KV sale area improvement practices and regeneration site preparation, particularly on pine sites. The exception to machine piling and burning of landings is aspen sites, where burning was avoided to prevent adverse impacts to soils and regeneration. Typically, broadcast burning will increase the production and availability of forage and browse for wildlife and livestock.

Current and previous rangeland and wildlife habitat prescribed burning and mechanical treatments emphasize efforts to reduce overstory canopy cover in pinon-juniper woodlands and mountain shrub communities to improve the understory grass and forb production, and, improve nutritional quality and forage availability. The timber activity fuels and range and wildlife treatments have generally been low cost and low risk treatments. These areas of the fuels management program continue today however, additional areas of emphasis, principally WUI, have been added to support the National Fire Plan. The effectiveness of these previous fuels treatments has generally been successful for meeting fuel reduction objectives with the exception of areas with heavy residual thinning slash. Similarly, habitat objectives have been met with the wildlife and rangeland treatments. It should be recognized however, that hazardous fuels treatments tend to enhance or be complementary for herbivores and wildlife generalists that display preference for early seral conditions. Treatments in the WUI have, by definition, more human activity and associated displacement of wildlife and are not as effective for wildlife as specifically designed wildlife habitat improvement projects in areas of decreased human disturbance and concentration.

The issue with the past and current program, however, is that the combined extent of these treatments does not fundamentally change the broader landscape condition or the departure from the range of structural and landscape pattern expected under historic disturbance regimes (restoration).

At this point in time, it does not appear that the past (pre-2000) activity fuels program significantly reduced wildfire severity or cost of fire suppression- it simply was not extensive enough for a long

enough timeframe and the program was associated with a modest timber program. In addition, uncharacteristic fuel loading, drought, and insect and disease outbreaks have combined to create extreme wildfire conditions that have resulted in the largest fires in modern state history over the past 5-7 years. However, there are specific examples of recent wildfires (post-2000) that have altered their fire behavior due to the combined hazardous fuels treatment practices of thinning/mechanical treatment followed by prescribed burning.

The current priority of the Fuels Management program is to treat hazardous fuels in and around Communities-at-Risk and in areas that have been designated the Wildland Urban Interface (WUI). The purpose of this shift in priority is to improve public safety and community protection. Hazardous fuels risk mapping is being accomplished and refined in a Unit-wide effort to delineate landscape level fire regime and condition class which is based on specific plant community and disturbance regime criteria. This information is used in conjunction with the WUI mapping. The hazardous fuels mapping allows the Forest to prioritize hazardous fuels reduction treatments in the areas of highest risk and concern for public and firefighter safety and with the greatest threat to real property and infrastructure. Utilizing the hazardous fuels and WUI mapping the Forest has initiated an effort to engage communities, local and county governments, the BLM, Colorado State Forest Service (CSFS) and Colorado Division of Wildlife to collaboratively identify and plan out-year hazardous fuels treatments. Examples of these collaborative efforts include the development of Community Wildfire Protection plans in conjunction with County governments and the West Region Wildfire Council.

The major accomplishments in Community Assistance for the year include the completion of the Delta County/Hotchkiss Fire District CWPP; Ouray County/Four Communities CWPP (Lake Lenore, Whispering Pines, Panoramic Heights, and Dexter/Cutler, Horsefly Fire Protection Association/Cornerstone Association CWPP; and the San Miguel County county-wide CWPP. Delta County is working on the GPS and structural evaluations for the Paonia area (Cedaredge is finished) and Montrose County has initiated their GPS and structure evaluations. The Telluride Fire Protection District is continuing to install Dry Hydrants at strategic, rural locations around Telluride. The Community Assistance program has also continued to work with the West Region Wildfire Council to develop CWPP standards and risk assessment/survey standards for the counties.

Because of the number of communities at risk, total acres of WUI and current levels of hazardous fuel loading, maturing stand structure, and levels of insect and disease the GMUG hazardous fuels management program should be viewed as a long term effort. Due to the nature and location of the hazardous fuels adjacent to communities, it will generally require a program shift from lower cost prescribed burning to the higher cost of mechanical treatments and follow-up maintenance.

Out-year planning and implementation efforts will lead to an increase in total acres of hazardous fuels acres treated in and adjacent to communities and thereby reduce the risk to public and firefighter safety by influencing the severity and intensity of wildfire behavior. However, in the near term, it is unlikely that the cost of fire suppression will be reduced significantly. The trend of increasing population growth in Southwestern Colorado is predicted to continue with concurrent expansion of urban residences into the WUI and rural intermix. This population trend coupled with persistent drought, bark beetle epidemics and dense stand conditions are anticipated to increase hazardous fuels loading and wildfire risk for as long as these compounding factors persist.

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.

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.

The current Forest Plan does not address the issues of climate change, which in part are related to air resources. Nationally the Forest Service is developing a framework designed to address the effects of climate change on National Forest resources as well as how our activities conducted on NFS lands can influence climate change. This topic needs to be addressed in our plan revision.

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 silvicultural management or timber harvest. Reduced levels of harvest on this Forest have essentially resulted in reduced capability for treating insects and disease or mitigating the effects. 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 age related mortality, insects and disease. Trade offs include the preservation of these same stands from the impacts of timber harvest, including road building, and the gradual shift of forest structure to older aged stands of trees. This leaves large areas more susceptible to outbreak of insect and disease (as well as to catastrophic fire). This trend is expected to continue.

Aerial surveys to detect insects and diseases are completed annually. The flights generally cover the entire forest. However, special flights sometimes occur if funding is available. An aerial survey was conducted in October of 2007 (FY08) focusing on the forest-wide impacts from Sudden Aspen Decline.

Some specific effects observed from this (and previous year) surveys include:

- Dwarf mistletoe of lodgepole pine continues to be severe in the Taylor Park area of the Gunnison.
- Spruce beetle activity continues to affect the Grand Mesa, the Uncompahgre Plateau, High Mesa (Cimarron) and Telluride Ski Area in the San Juan Mountains.
- Incidence of Armillaria root disease remains high in spruce-fir stands, particularly on the Grand Mesa. Susceptibility to this pathogen is also age-related. Older stands will continue to be vulnerable. This disease may contribute to windthrow, increased mortality and spruce beetle.
- Mountain pine beetle-caused mortality is continuing in ponderosa pine on the Uncompahgre Plateau, near Campbell Point and in Haley Draw. Mountain pine beetle-caused mortality in

lodgepole pine is occurring in Taylor Canyon, East of Taylor Park, near Ohio City, and scattered from US Highway 50 southwest to CO Highway 114.

- Douglas-fir beetle activity has been increasing wherever Douglas-fir occurs. Beetle activity continues to increase on the Uncompahgre Plateau. Areas observed from past-year surveys include the Flatirons, Coal Creek and Anthracite Creek on the Paonia District. Areas affected on the Gunnison District include: Taylor Canyon, areas from Sargents to Archuleta Creek, areas south of the West Elk Wilderness in Curecanti Creek, Soap Creek, East Red Creek and Beaver Creek, and along the Lake Fork.
- Western spruce budworm defoliation of Douglas-fir and true fir is severe on the Uncompahgre Plateau. Activity also continues in the Lake Fork drainage near Lake City.
- Sudden Aspen Decline (SAD) is causing wide-spread mortality at the lower elevations (of the species range) across the forest. A study was initiated in 2007 to determine the cause of the sudden decline. The project name for this study is the Terror Creek Applied Silviculture Assessment. The analysis for the study was conducted under authority from the Healthy Forest Restoration Act (HFRA). The analysis was one of only two projects in the western U.S. to use the Title 4, HFRA authority. The study will continue to monitor treatments in the Terror Creek project area for a 5-year period.

Additional treatments to regenerate aspen on sites affected by SAD were initiated in 2008 through the commercial timber sales program. Non-commercial treatments were also initiated in 2008.

The small sales timber program continues to be concentrated in areas with insect and/or disease activity, in an attempt to minimize the effects. 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 at a number of different sites. It includes review of the extent and intensity of past logging impacts in the Sargents Mesa timber sale area, Bull Mountain Pipeline construction review, field review and recommendation of a small slope failure at Lawson Hill, and establishment of baseline transects, photo points, and groundwater monitoring wells on 3 wetland fens being restored in conjunction with Colorado State University.

Assessment of Historic Skid Roads and Trails in the Sargents Mesa Sale Area:

This proposed sale area had previous timber harvest activities done in the 80's, containing skid trails from those old sales still evident. During field work, evidence of residual compaction was observed on the larger, more heavily used corridors. To determine the arial extent of skid roads and trails 1988 aerial photographs were examined. A total of 6.3% of the area was estimated to be affected by skid trails. Regional Soil quality standards state that detrimental soil impacts (which include compaction) should not exceed 15% of an activity area.

Bull Mountain Pipeline Project Review

General soil conditions, erosion control, and wetland mitigation practices were examined during a inter-disciplinary team review in September of 2008. Practices were observed along approximately 1 mile of right-of-way construction. Soil and water related protection measures were very evident and were actively maintained. No adverse impacts to soil or water resources were observed. Rehabilitation was being completed in a very timely manner. Topsoil was effectively saved and utilized, appropriate mulching being done, and an annual wheatgrass (QuickGuard) was being seeded immediately after earthwork was completed.

Lawson Hill Slide

A site visit was made to evaluate a small slope failure at Lawson Hill near Telluride. The slump/slide was triggered by over application of irrigation water. Revision of irrigation practices was advised and seeding was completed to re-establish vegetative cover on the exposed mineral soil.

Wetland/ Fen Monitoring, and Fen Restoration Efforts.

Monitoring efforts at the Horse Fen on Grand Mesa continued to provide baseline ground-water and condition data prior to Skinned Horse Timber Sale commencing. Fen restoration treatments were planned and partially implemented at 3 fen locations across the Forest in cooperation with Dr. David Cooper of Colorado State University. Included at each site were the establishment of transects and photo points to monitor changes in vegetative composition and density as well as groundwater wells to monitor seasonal water table fluctuations.

The Forest established a Fen Technical Committee consisting of an interdisciplinary team of scientists representing botany, hydrology, geology and ground water, soils, range management and wildlife. The Committee was given a charter that included addressing the number and locations of fens on the forest, evaluating the conditions of fens, and addressing questions related to the effects of various forest management activities on fens. This work is expected to span over several years. In FY08 the Committee began gathering literature and research on fens, and consolidating existing data for fens on the Forest. Existing data was available from previous work of Dr. Cooper in Prospect Basin near Telluride, the Mt. Emmons Iron Fen, Horse Fen on Grand Mesa, numerous fens that were subject of a master's thesis (Austin), and fens that have been studied by Dr. Sullivan of Denver University. Forest-wide photointerpretation for potential fen features began in FY08.

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 (April 2001). In FY2007 small advances in the implementation of the three travel plans were made on the Forest. The Forest performed minimal custodial activity (fixing existing signs, replacing stolen/missing signs) during the year. Several seasonal road gates were installed on the Uncompahgre Plateau. The Norwood R.D. still is the farthest behind in implementation.

The Forest published Two Motor Vehicle Use Maps (MVUM) for the Grand Mesa and Uncompahgre National forest in June . The MVUM are required to be published annually as part of the new Travel Rule in 36 CFR 212. The MVUM displays the uses *are allowed* on the routes designated.

Funding of Travel Management continues to be very difficult because of the financial constraints placed upon the Forest Service. Only road and trail maintenance dollars can be used to implement TM implementation in already marginally funded programs.

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, non-motorized are diminishing as a result of other Forest management activities, new route development and increased recreation demands.

9. Facilities

Are road costs accurate?

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

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 work on building a pipeline of environmental documentation and planning to provide a stable timber program for the future. The overall timber program financial efficiency is average when compared to other Region 2 forests. The extensive work required to complete environmental documentation represents a high percentage of the timber sale program costs.

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ACTION PLAN

As explained in the cover page of this report, Forest Plan revision is underway. The Forest has completed comprehensive resource assessments and evaluations that describe scientific and technical information about social, economic, and ecological conditions, as well as numerous collaborative public involvement efforts. The planning team, working with federal and state agencies, local governments, communities, and individual stakeholders, considered this and other information related to changes in laws, regulations and policies, in developing the Proposed Plan.

Versions of the Proposed Plan were developed by synthesizing technical analyses results with public input. The planning team conducted numerous meetings, presented key findings and trends from assessments and evaluations, and the preliminary Proposed Plans that incorporated public recommendations. Relevant document are available for review on the GMUG internet site (www.fs.fed.us/r2/gmug/policy/plan_rev/).

Should legal issues concerning the agency's planning rule be cleared up early in 2009, we hope to have an official version of the Proposed Plan available for public review in 2010.

RESEARCH NEEDS

No additional research needs were identified through this report.

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PUBLIC PARTICIPATION/ DISCLOSURE

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

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

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