

STEP 6: RECOMMENDATIONS

The purpose of this section is to bring the results of the previous sections to a conclusion, focusing on management recommendations that are responsive to the issues and key watershed processes identified in the analysis. Monitoring activities that address issues and key questions are identified. Data gaps and limitation of the analysis are also documented.

The key topics of concern that must be managed in the District in order to achieve satisfactory watershed conditions are soil erosion and vegetation management. If bare soil were kept to a minimum, concentrated surface water runoff were managed, and healthy and productive understory vegetation existed, soil erosion and downstream sediment delivery into the stream system would be minimized, thereby meeting the Forest Plan goal that water flowing from National Forest lands will meet state water quality standards. This would also reduce the contribution to the impaired uses in the San Juan River at the outlets of the watersheds flowing from the District.

Because of fragile soils and limited water, it is important to protect the watershed lands in the District from further deterioration of soil and water resources. Past degradation, often widespread, has been mostly attributed to surface disturbance, including overgrazing, gas development, road construction, and vegetation removal. Degradation has been amplified by prolonged droughts.

Current Programs

Implementation of many of the management plans, policies, standards, and guidelines already in place would greatly assist in meeting the goal of satisfactory watershed conditions. The recommendations and requirements established in existing documents that are appropriate for managing watershed conditions have been identified in the previous section and include the following:

- Weed management plans.
- Recontouring and revegetation of bare ground with native grasses.
- Limiting vehicle traffic on single-use roads to serve gas wells by using gates to restrict public access.
- Inventory roads contributing the most sedimentation to the stream system and plan for upgrading those roads by implementing better engineering designs to control erosion and stormwater runoff.
- Upgrading the primary collector roads to Maintenance Level 3.
- Implementation of the open road density limit of 0.5 mi/mi² in the deer and elk winter ranges.
- Monitoring of forage production and utilization to determine appropriate livestock numbers and season of use in each grazing allotment.
- Regular monitoring of MIS habitat and population trends and implementation of measures to improve any that are deteriorating.
- Complete the revisions to the management plan for the Wild Horse Territory and implement population reduction efforts.
- Cultural resource surveys and clearances before any surface disturbing activities are conducted.
- Maintenance of the resource values that resulted in the designation of five areas for Wild and Scenic Rivers eligibility.

New Programs and Management Guidelines

In the light of the projections for increasing gas development over the next 20 years, it is likely that the acreage of bare ground and the density of roads will increase. If allowed to continue under current management trends, these surface disturbances will also result in a continuation of the downward trend of the core topics identified in preceding sections. These may include the following.

- Increasing soil erosion
- Decreasing vegetative conditions and forage production
- Reduced core areas for wildlife habitat
- More disruption of wildlife habitat by human land users
- Further damage to the already downward trend in the MIS plain titmouse (piñon-juniper) habitat
- Increasing sediment yields from roads and from unstabilized gullies
- Further damage to archaeological sites under and near the Bancos Canyon road
- Potential for increasing damage to the surroundings and structural integrity of cultural resources
- Potential for increased vandalism of archaeological sites.

Planning for the management of this projected increase in gas development will require the development of new standards and guidelines to minimize the effects to surface resources. Due to the critical impact of surface disturbing activities and roads on all aspects of watershed condition, the Forest Service should consider developing standards and guidelines to minimize these impacts, so resource managers can still achieve the Forest Plan goal of satisfactory watershed condition by 2030. Recommendations listed below are designed to provide concrete steps that can be taken by managers and resource specialists, with inventory and monitoring listed to fill in data gaps or evaluate progress. Due to the interrelationship of the management recommendations across many resources, they are not separated into the core topics or individual resources. It should be understood that if the primary goals of minimizing soil erosion, sediment delivery, and habitat fragmentation are achieved, corresponding protection of cultural resources, MIS habitat, rangeland condition, and water quality will also be attained.

- Soils:
 - Develop a list of recommended Best Management Practices that are appropriate for soils and locations specific to the District to reduce soil erosion on construction sites.
 - Ensure that erosion control measures are properly installed and maintained. Monitor after each storm.
 - Identify actively eroding gullies. Develop and install site-specific measures to stabilize them.
- Roads:
 - Establish road density limits within each watershed or within the District. Timing of approval of new well permits in areas close to or exceeding road density limits would be determined by the timing of the obliteration of other roads in these areas.
 - Obliterate and revegetate unneeded roads, especially those roads within 300 feet of streams or which have numerous stream crossings.
 - The remaining roads near streams (crossing or adjacent to) should be reviewed and upgraded to ensure that they are properly drained to reduce the hydrologic connection at crossings, resulting in less water and sediment flowing down roads and into the surface water system.
 - Monitor road densities in each watershed and evaluate road condition to determine priorities for maintenance to ensure that roads near streams are stable.

➤ Vegetation:

- Develop a standard for revegetation that requires the selection of a seed mixture that is appropriate for the soil type and site conditions present at each location.
- Monitor new seedlings to ensure successful revegetation. Develop a standard that requires at least 70 percent of existing adjacent ground cover be achieved within two growing seasons.
- Develop guidelines for successful revegetation of sites under difficult conditions like drought, locations with high volumes of surface water, or windy areas that may remove seed before germination. Provide guidance on the use of mulch with materials to keep the mulch in place.
- Develop a recommended list of Best Management Practices designed to improve revegetation success and monitor their effectiveness for future uses.
- Monitor the effectiveness of weed management plans.
- Periodically inventory the types and locations of weed stands to assess their containment or spread in the District. Plot the locations in relation to roads or other surface disturbing activities to try to determine the cause if weeds are spreading.

➤ Wildlife:

- Monitor MIS populations in relation to road density and traffic volumes to determine any correlation. Information on the effect of roads is needed to assist in managing wildlife habitat.
- Create database with information on wildlife monitoring along roads.

➤ Cultural Resources:

- Work with the SHPO to develop remediation measures to protect and stabilize archaeological sites along the Bancos Canyon road.
- Develop a survey plan and identify researchers interested in conducting site surveys of high priority areas to obtain better information on site types and distributions in the District.
- Develop a monitoring plan to document conditions of structures of historic importance near gas wells before and after drilling.
- Develop a monitoring plan to document vandalism to cultural resources that occurred following construction of new roads.