

Appendix G: Water Quality Management Plan

Introduction

The purpose of the Water Quality Management Plan is to meet state water quality objectives as identified by the State of California Water Quality Control Board, and to protect and maintain the identified beneficial uses of water flowing off National Forest System (NFS) lands from the occurrence of an adverse or negative direct and indirect effect to water quality. The downstream beneficial use of the water is identified by the appropriate regional control water boards (Central Valley, Lahontan, and North Coast)

Water Quality Management Plan

The primary method of meeting the above-stated purposes of the water management plan is by maintaining the National Forest Transportation System (NFTS) in a manner where the roadways are not hydrologically connected to the stream network, or to insure the roadways are not subject to excessive levels of road runoff or road erosion. The following water-quality guidelines are based on applications of BMPs, and are incorporated into the designation of proposed routes as additions to the NFTS Plan. This can be accomplished in the following manner:

- Disconnect the hydrologic connectivity of roads to the stream and lake network across the Forest.
- Maintain the proposed routes with adequate water diversion structures (e.g., cross drains, water bars, or rolling dips) to prevent the gulling of the routes. Use of natural gradient slope breaks and route relocation, promoting travel along the contours, and minimizing hill climbs are also acceptable measures to achieve the desired goal.
- Over the next 10 years, complete monitoring of the routes dedicated to OHV use and longer than 0.5 miles (this does not include mixed-use routes) according to a developed protocol. The recommended protocol is the Region 5 OHV Trail-Monitoring Protocol (the red-yellow-green protocol developed by Brent Roath, Region 5 Soil Scientist). It is assumed that approximately 20% of the dedicated use OHV routes added to NFTS would be monitored per year.
- Annually, routes added to the NFTS would be monitored under the R5 BMPEP as part of the Forest-wide monitoring program. These routes would be picked at random and can be monitored using the following BMPEP forms:
 - BMPEP form E08: Road Surface, Drainage, and Slope Protection; and BMPEP form #09: Stream Crossings
 - BMPEP Form E20: Management of Roads During Wet Periods

Within Region 5, past monitoring completed as part of the Best Management Practices Evaluation Program (BMPEP), has validated the effectiveness of BMPs in mitigating the effects of Forest management activities on water quality. No evidence has been observed during monitoring completed in 2000-2008 of multiple Forest management activities (i.e., timber sales, road maintenance, road reconstruction and fuels reduction projects) that these projects were adding additional levels of sediment into the stream network, above the natural erosion rate when the BMP is implemented according to plan description or guidance.

Description of Best Management Practices

The Forest Service water quality maintenance and improvement measures called Best Management Practices (BMPs) were developed in compliance with Section 208 of the Federal Clean Water Act, PL92-500, as amended. Following a lengthy development and public review process from 1977 to 1979, the BMPs developed by the Forest Service were certified by the State of California Water Quality Control Board and the US Environmental Protection Agency. These practices are the measures both the state and federal water quality regulatory agencies expect the Forest Service to implement to meet federal and state water quality objectives, and to maintain and improve water quality.

In 1997, the BMPs were reviewed and evaluated by a cadre of water resources specialists in the Forest Service. The result of this effort was to update and improve the BMP program in Region 5. In 1999 and 2000, the updated version of the BMPs, as revised by agency water quality and aquatics specialists, were reviewed and approved by the State Water Quality Control Board for implementation.

Based on monitoring of similar type of activities on the Modoc National Forest, BMPs have been proven to be effective measures in protecting water quality, based on the identified beneficial uses. BMPs have been shown to be effective measures in meeting state and federal water quality objectives as identified by the Central Valley Basin Water Quality Control Plan, and will aid in providing protection of hydrologic function of the watersheds and stability of stream courses.

Table 1. Description of Best Management Practices

BMP #	Name	Objective
1.20	Erosion Control Structure Maintenance	To ensure that constructed erosion control structures are stabilized and working
2.7	Control of Road Drainage	To minimize road runoff and related sediment production from road surfaces
2.22	Maintenance of Roads	To maintain roads in a manner which provides for water quality protecting by minimizing rutting, failures, side casting, and blockage of drainage facilities, all of which can cause erosion, sedimentation, and deteriorating watershed conditions
2.23	Road Surface Treatment to Prevent Loss of Materials	To minimize the erosion of road surface materials and consequently reduce the likelihood of sediment production from those areas
2.24	Traffic Control During Wet Periods	To reduce road surface disturbance, rutting of roads, and minimize the sediment washing from the disturbed roads
2.26	Obliteration or Decommissioning of Roads	To reduce sediment generated from temporary or unclassified and system roads by obliterating or decommissioning them at the completion of their intended use

4.7	Water Quality Monitoring of Off-Highway Vehicle (OHV) Use according to a Developed Plan.	To provide a systematic process to determine when and to what extent OHV use would cause, or is causing, adverse effects on water quality
7.7	Management by Closure to Use	To exclude activities that could result in damages to either resources or improvements, resulting in degraded water quality

Conclusion

By implementing the above-described water quality standards, it is unlikely that the proposed activities would result in an adverse or negative direct or indirect effect to water quality or its identified downstream beneficial uses.