Adequacy of Soil Quality Standards

Sierra Club/Alliance for the Wild Rockies
Stevens County Cattleman's Association
Lands Council

Concerns expressed by objectors:

The Sierra Club/Alliance for the Wild Rockies contend that the Colville National Forest Land Management Plan (LMP) and the Final Environmental Impact Statement (FEIS) fail to provide meaningful forest-wide standards. They argue that no limit is set for soil loss or damage by livestock, harvest, or human use and that the LMP fails to conform to the Region 6 Soil Quality Standards and Guidelines.

The objectors question the focus on detrimental soil conditions (DSCs) as a "proxy" to ascertain management-induced losses or reductions of soil productivity, rather than direct measures. They also contend that the LMP definition of DSCs considers only alterations to physical soil properties, not chemical and biological properties. They question whether the FS used the best available science.

The objectors also argue that the FS failed to disclose that the DSC limits are based on the amount of damage that is operationally feasible and not scientific data that measure land and soil productivity losses.

An objection was also raised regarding the Minimum Effective Ground Cover following any soil-disturbing activity by the Stevens County Cattleman's Association based on the assertion that the standard cannot be attained or measured.

A concern was raised by the Lands Council regarding the restoration of soil processes and function at a pace of 20 to 30 acres over the next five years.

Remedies proposed by objectors:

The Stevens County Cattleman's Association suggested that the ground cover standard be removed or modified to provide the public with a plan as to how these standards will be measured and monitored. They also suggest that the standard be clearly worded and that a closely enumerated description of an objective methodology designed to produce measurable and repeatable metrics be articulated.

The Lands Council advocates "establishing guidelines and standards that suspend grazing authorization in upland meadows and other high concentration grazing areas where soil damage, loss of ground cover including native grasses and shrubs exceeds 85% of historic range of variability (including pre-grazing of domestic livestock)".

REVIEW FINDINGS:

WHAT IS REQUIRED BY LAW, REGULATION AND/OR POLICY?

The Multiple Use, Sustained Yield Act of 1960 directs the Secretary of Agriculture to carry out "harmonious and coordinated management of the resources without impairment of the productivity of the land". The Act specifics that "Sustained yield means achieving and maintaining into perpetuity a high-level annual or regular periodic output of renewable resources without impairment of the productivity of the land." The Forest and Rangeland Renewable Resources Planning Act (RPA) of 1974 requires the maintenance of productivity of the land and the protection and, where appropriate, improvement of the quality of the soil and water resources. The

Act specifies that "substantial and permanent impairment of productivity must be avoided". The Forest Service Manual 2550 – Soil Management directs soil resource management on National Forest System lands. The objectives of this National direction are to (1) maintain or restore soil quality on National Forest System land and (2) manage resource uses and soil resources on National Forest System lands to sustain ecological processes and function so that desired ecosystem services are provided in perpetuity (page 284, FEIS). Forest Service Manual 2520 – Watershed Protection and Management, R-6 Supplement No. 2500.98-1 provides regional direction related to soil quality management, protection, and restoration. All alternatives are in compliance with soil management direction in Forest Service 2550 – Soil Management along with any amendments and regional supplements (page 417, FEIS VOLUME 1).

WHAT IS IN THE FOREST PLAN AND THE FEIS?

The revised Colville National Forest Land Management Plan Forest-wide Direction includes soil related desired conditions, objectives, standards, and guidelines. These are found in Chapter 2 on pages 29 through 32. The Final Environmental Impact Statement Volume 1, Soils, Need for Change states "Soil quality management on the Colville National Forest is guided by national and regional direction found in FSM Chapter 2550 Soil Management and Chapter 2520 Watershed and Air Management R6 Supplement (1998). The same page under Environmental Consequences, Assumptions states that current regional soil quality standards apply to all alternatives. The present standard is "Leave a minimum of 80 percent of an activity area in an acceptable soil quality condition. Detrimental conditions also include landings and system roads (FSM 2520 R-6 Supplement 2500 98-1).

The LMP also states on "As a Federal land management agency, the Forest Service must follow all applicable Federal laws and regulations. If these laws change or are amended, or if new laws are enacted, the Forest administration will comply with the changes or additions. The same situation applies to executive orders and to agency policy, as expressed in Forest Service Manual and Handbook directives. This direction does not need to be restated in the Forest Plan. Wherever the laws, regulations, or policies have more stringent requirements than forest plan direction, the Forest must and will comply with those requirements" (pages 19 and 20, LMP).

The LMP includes an objective, FW-OBJ-SOIL-01. Soil Productivity and Function, on page 32 which states that within 5 years of plan implementation, annually stabilize, rehabilitate, or restore natural processes that support soil productivity and function on 20 to 30 acres.

Chapter 4, Monitoring outlines forest plan monitoring questions for the various resources, including soils. Specifically MON-SOIL-01 asks "To what extent have plan components prevented irreversible damage to soil conditions?" The indicator, which is measured annually, is MON-SOIL-01-01: Number of harvest units surveyed and percent that meet the Regional Soil Quality Standard, post-harvest (FSM, R6 Supplement No. 2500.98-1)

ASSESSMENT:

The LMP provides forest-wide desired conditions, objectives, standards, and guidelines intended to protect the soil resource as noted above. The FEIS indicates the current R6 regional soil quality standards apply to all alternatives. The R6 regional soil quality standards are not specifically referenced in the forest-wide standards however the LMP states that Forest Service Manual and Handbook direction will be followed. The R6 standards apply to activity units including those affected by harvest and other forest management activities as well as range management. Many of the human uses relate to roads, trails, and recreation areas are included in the Total Soil Resource Commitment limitation. Soil stability and support functions are maintained in these areas but they are essentially non-productive. Chapter 4 which spells out Forest Plan monitoring requirements includes a specific soil resource monitoring question and an indicator directly tied to the R6 regional soil quality standards.

The R6 regional soil quality standards are operational standards intended to provide basic soil quality protection while supporting the multiple use mandate of the FS. From a practical perspective the use of soil disturbance classes provides managers and project administrators with a means to quickly determine if excessive impacts are occurring. A Visual Field Guide to aid in detecting detrimental soil disturbance is also available. Soil quality monitoring is also conducted under the direction of soil scientists utilizing methods defined in the Forest Soil Disturbance Monitoring Protocol, Volumes 1 through 3.

Detrimental soil disturbance is defined as disturbances, including the effects of compaction, displacement, rutting, severe burning, surface erosion, loss of surface organic matter, and soil mass movement that indicate when changes in soil properties and soil conditions would result in significant change or impairment of soil quality. The focus is on avoiding or minimizing detrimental levels of impact on physical soil properties within an activity area which can adversely influence soil biology, hydrology, chemistry, etc.

FW-OBJ-SOIL-01. Soil Productivity and Function leaves itself open to interpretation. Should it be inferred that stabilization, rehabilitation, or restoration can be foregone up to 5 years following plan implementation and then 20 to 30 acres must be treated annually. Are the acres tracked those affected in a broader sense or ones specifically treated? It seems to say that 200 to 300 acres will be treated per decade. Is that a correct understanding?

Potential instructions (if applicable):

The ground cover standard (Table 2 on page 32 of the LMP) could benefit by clearly defining what effective ground cover entails. Implementation and effectiveness monitoring will generally be conducted on a project basis. This may help address the remedy suggested by the Stevens County Cattlemen's Association.

The Land Council's suggestion (remedy) that soil and vegetation disturbance be limited in high mountain meadows, and other sensitive areas subject to concentrated grazing pressure, would be partially addressed by the soil related standards and guidelines and desired conditions included in the LMP. Soil disturbance levels, along with plant community data and trends, would need to be considered.

Clarification of FW-OBJ-SOIL-01. Soil Productivity and Function would benefit from some clarification. As discussed above it seems open to different interpretations.