3.4 Soil and Water

3.4.1 Scope of the Analysis

The geographic scope for the assessment of the soil and water resource conditions and potential effects includes the entire Payette National Forest outside the FC-RONR Wilderness. For organizational reasons, the Payette NF is divided into 13 smaller units called Management Areas (MA). MAs are organized around a combination of watershed and administrative boundaries. The analysis for the soil and water resources addresses changes in the type, extent, and location of designated areas open to cross-country motor vehicle use and/or limited motorized access, designated roads, and designated motorized trails for each of the 13 MAs.

Issues and Indicators

Soil and Water Issue 1: The type, extent, and location of roads, trails, and motorized areas in the Travel Plan may degrade soil productivity, accelerate erosion, and deliver sediment to streams.

Indicators:

1. Percent (and acres) of the Management Area (MA) designated open to cross-country motor vehicle use and/or limited motorized access.
2. Percent (and acres) of Riparian Conservation Areas (RCAs) in designated areas open to cross-country motor vehicle use and/or limited motorized access.
3. Miles of designated roads.
4. Miles of designated two-wheel motorized trails.
5. Miles of designated ATV and OHV trails.
6. Miles of designated roads and motorized trails in subwatersheds with a high watershed vulnerability rating.
7. Miles of designated roads and motorized trails within RCAs.
8. Number of inventoried stream crossings on designated roads and motorized trails.

Background:

Water Quality (Accelerated Erosion and Sediment)

Erosion occurs when energy from rainfall and runoff is sufficient to detach and move soil particles. Erosion and sediment occur in all watersheds as a natural geologic phenomenon. Management activities associated with roads and trails and cross-country motor vehicle use can accelerate erosion and sediment beyond the historic range of variation and geological rate (Satterlund and Adams 1992).

Disturbances from roads and trails can increase erosion and sediment delivery. Existing roads and trails are a primary source of long-term management-related sediment. The type, extent, and location of a designated motorized system of roads, trails, and areas contribute to the amount of accelerated erosion and sediment delivered to streams. Accelerated erosion and sediment delivery have been identified as a primary source of water quality pollution in many Payette National Forest watersheds.

Forest road and trail construction, maintenance, and vehicle use have been well documented as major sources of accelerated erosion and sediment. The majority of increased erosion occurs within the first two years after construction. Accelerated erosion and sediment from roads continue over the long-term as a result of traffic use, compaction, high runoff, and concentrated water on the road surface, ditch lines, and from relief culverts. Cut and fill slopes can also be a chronic source of surface erosion and mass failures (Satterlund and Adams 1992).

Accelerated erosion and sediment delivery from trails follow the same processes that occur from roads. The primary source of erosion and sediment is from the existence of a trail itself with accelerated erosion occurring once vegetation cover is lost. The extent of erosion is primarily determined by trail location and a complex interaction between topographic, soil, and geomorphic features. (Wilson and Seney 1994)

Erosion will also increase based on the amount of use that occurs on a trail. Hiker, horses, and wheeled vehicle use all increase erosion depending on the location, amount of use, and type of use. Erosion increases with compaction, particle detachment, channelization. Weaver and Dale (1987) found that horses caused greater increases in soil compaction, litter, trail width, and depth compared to hikers and motorcycles. Studies in Montana have shown that horses and hikers make more sediment available due to detachment, than motorcycles and off-road bicycles (Wilson and Seney 1994). Meyer (2002) has documented that wheeled vehicles will increase erosion from compaction, surface subsidence, and wheel shearing and pumping.

Soil Productivity

Soil productivity includes the inherent capacity of a soil under management to support the growth of specified plants, plant communities, or a sequence of plant communities. The Forest Plan describes loss or degradation of soil productivity as Total Soil Resource Commitment (TSRC) or Detrimental Disturbance (DD) (USDA Forest Service 2003).

TSRC is defined as the conversion of a productive site to an essentially non-productive site for a period of more than 50 years. In this analysis, quantifiable TSRC is associated with roads and trails. These areas are dedicated to a specific management use that precludes other uses of the land and removes the majority of the productive capability of the land. These TSRC types of disturbances also affect water quality, because they often create the greatest amount of accelerated soil erosion and thus sedimentation.

Detrimental soil disturbance (DD) is the alteration of natural soil characteristics that results in immediate or prolonged loss of soil productivity and soil-hydrologic conditions. DD can result from off-road motorized activities and can produce unacceptable levels of soil degradation by compacting, moving, eroding, or puddling the soil. Motorized vehicles can damage soils directly from impact from surface traffic and indirectly by hydrologic modifications, soil transport, and deposition. Direct mechanical impact has several components - abrasion, compaction, shearing, and deposition that can affect the soil resource (Meyer 2002). Abrasion strips surface vegetation and roots. Compaction reduces soil voids and causes surface subsidence. Shearing is the destructive transfer of force through the soil. Displacement results in the mechanical movement of soil particles. Indirect impacts include hydraulic modifications, such as the disruption of surface water flow, reductions in infiltration and percolation, surface ponding, and the loss of water holding capacity (Meyer 2002). Other indirect impacts include those associated with erosion and the deposition of transported particles. Water quality can be degraded by erosion through sediment being delivered to lakes and streams.

Motorized vehicle use off roads and trails can degrade soil productivity. Direct mechanical impacts have several components: abrasion, compaction, shearing and displacement. Indirect impacts include hydraulic modification, such as the disruption of surface water flow, reduction in infiltration and percolation, surface ponding, and the loss of water-holding capacity. Unauthorized roads and trails have the potential to accelerate erosion and sediment delivered to streams due to lack of design and poor location.

The following text provides a summary of each Soil and Water Indicator (SWI).

SWI 1: Percent (and acres) of the Management Area (MA) designated open to cross-country motor vehicle use and/or limited motorized access

The area designated open to cross-country motor vehicle use and/or limited motorized access is used as a general measure of potential effects to soil productivity and water quality. Limited motorized access includes vehicle parking and dispersed camping activities. Motorized cross-country travel can pioneer new trails across alpine areas, wetlands, steep slopes and other areas with sensitive soils. Degraded areas can become environmental problems because of the effects on vegetation, soils, and site hydrology (Meyer 2002). Water quality is affected by accelerated erosion and sediment delivered to streams.

SWI 2: Percent (and acres) of Riparian Conservation Areas (RCAs) in designated areas open to cross-country motor vehicle use and/or limited motorized access

Riparian areas include streams, lakes, floodplains, wetlands, swamps, bogs, marshes, seeps, and all adjacent riparian areas. Motorized cross-country travel can damage RCAs directly from surface traffic and indirectly by hydrologic modifications, soil transport, and deposition. Hydraulic modifications include disruption of surface water flow, reductions in filtration and percolation, surface ponding, and the loss of water holding capacity (Meyer 2002). Other indirect impacts include those associated with erosion and the deposition of transported particles. Water quality can be degraded by erosion through sediment delivered directly to streams.

For each alternative, the area designated open to cross-country motor vehicle use and/or limited motorized access in RCAs is used as a relative measure of potential effects to soil productivity and water quality. RCAs are calculated as 300 feet on each side of perennial streams and 150 feet on each side of intermittent streams, lakes, and ponds. Many smaller streams, springs, seeps, and wetlands are not recorded in the PNF Geographic Information System (GIS) and so were not included in the calculations. However, the changes between alternatives will remain relative to each other.

This indicator is used to evaluate the differences between the No Action and the action alternatives from the effects of reducing the area open to cross-country motor vehicle use and/or limited motorized access in RCAs.

SWI 3: Miles of designated roads

The miles of designated roads are used as a relative measure of TSRC, DD, and water quality. Accelerated erosion and sediment from roads continue over the long-term as a result of traffic use, compaction, high runoff, and concentrated water on the road surface, ditch lines and from relief culverts. Cut and fill slopes can also be a chronic source of surface erosion and mass failures (Satterlund and Adams 1992).

TSRC, for this indicator, is determined by the extent of roads on the landscape. TSRC can affect water quality because it often creates the greatest extent of accelerated erosion and sediment delivery. DD occurs adjacent to roads from motorized cross-country travel and limited motorized access. DD can result from off-route motorized activities and can produce unacceptable levels of soil degradation by compacting, moving, eroding, or puddling the soil. Water quality is also affected by the extent, location, and condition of the road and the amount of use. This indicator is best used to evaluate the relative difference between the alternatives on the extent of designated roads.

The miles of designated two-wheel motorized trails are used as a relative measure of TSRC, DD, and water quality. Two-wheel motorized trails can have similar effects on soil productivity and water quality as roads, but at a smaller degree because of the reduced width of the travel way.

However, these trails can create additional problems due to steep grades, lack of designed stream crossings, and difficulty of maintaining water management features (Meyer 2002). Off trail motorized vehicle use off trail can cause additional damage. This indicator is best used to evaluate the relative difference between the alternatives on the extent of designated two-wheel motorized trail.

SWI 5: Miles of designated ATV and OHV trails

The miles of designated ATV and OHV trails are used as a relative measure of TSRC, DD, and water quality. ATV trails can have similar effects to soil productivity and water quality as roads but the effects differ based on the width of the travel way. As with two-wheel motorized trails, ATV trails create additional problems due to steep grades, lack of designed stream crossings, and difficulty of maintaining water management features. In addition, motorized vehicle use off the trail can occur, resulting in additional damage to the soil and water resources. This indicator is best used to evaluate the relative difference between the alternatives on the extent of designated ATV and OHV trails.

SWI 6: Miles of designated roads and motorized trails within subwatersheds with a high watershed vulnerability rating

Subwatershed vulnerability ratings characterize the natural inherent sensitivity of a subwatershed to disturbance. In highly vulnerable subwatersheds, disturbance poses a higher risk of degrading soil-hydrologic, stream dynamic equilibrium, and riparian functions. These subwatersheds have a high percentage of sensitive lands with highly erodible soils, high sediment yields, and landslide prone areas. The miles of designated roads and motorized trails within subwatersheds with a high watershed vulnerability rating is best used as a relative measure of potential effects on water quality.

SWI 7: Miles of roads and motorized trails within RCAs

Motorized cross-country vehicle use can damage RCAs directly from surface traffic and indirectly by hydrologic modifications, soil transport, and deposition. Water quality can be degraded by erosion through sediment being delivered directly to streams. The miles of designated roads and motorized trails within riparian conservation areas are best used as a relative measure of potential effects on water quality.

SWI 8: Number of inventoried stream crossings open to motorized use

Sediment delivered to streams is greatest in riparian areas where roads cross the stream. Fords and approaches to the crossings deliver sediment directly to streams. Culverts can produce a large amount of sediment if the culvert plugs and fails. The number of inventoried stream crossings was determined based on a GIS spatial overlay of roads and motorized trails with streams. Only designated roads and trails and streams that are inventoried and recorded in the Forest GIS database were used in the analysis. Additional streams may actually occur on the landscape. Because not all RCAs and streams are inventoried in the GIS database it is critical to apply Project Design Features (PDFs) on all new designated roads and motorized trails. However, the changes between alternatives remain relative to each other. The number of inventoried stream crossings open to motorized use is used as a relative measure of potential effects on water quality.

3.4.2 Changes between Draft and Final EIS

Additional concerns were expressed in response to the release of the DEIS. Reponses to those concerns are included in Appendix F. Comments on the DEIS led to a new alternative (E).

Changes between draft and final relevant to the soil and water analysis include:

- Revision of numeric values for all 13 MAs and 8 Soil and Water indicators in the Chapter 3 Current Condition and Environmental Effect tables based on the current data. Revised all narratives to comply with the new numbers.
- Revised the calculations to properly display percent changes by MA for SWIs 1 and 2. Modified SWIs 1 and 2 to include both Percent and Acres figures to clarify and reduce confusion, as requested by the Nez Perce Tribe. Revised narratives for SWIs 1 and 2 to reduce confusion.
- Adjusted SWIs 1 and 2 values for MA 13 to reflect that there would be no areas along roads and trails open to limited motorized access, and that parking would be at designated sites only.
- Edited Existing Condition, Water Quality section regarding erosion and sediment impact from hikers, horses, and wheeled vehicles use on trails, based on public comment and additional research.
- Expanded the cumulative effects discussion for each management area.
- Revised Forest Plan Consistency where needed.
- Added 2.8 miles of ATV trail in MA 8, Kennally Creek, to reflect the Paddy Flat EA Decision as part of the Existing Condition (Alternative A). Since the Paddy Flat decision and mitigation has not been implemented, all ATV Project Design Features (PDFs) will be implemented before this ATV is designated on the Travel Map.

3.4.3 Forest Plan Direction

The Forest Plan (Forest Plan 2003) provides general direction for all Forest resources and the foundation for more specific direction at the Management Area level. In general, there are three pertinent themes associated with Forest Plan goals, objectives, standards, and guidelines for soil and water resources related to travel planning:

- Adhere to the State Nonpoint Source Management Plan to best achieve consistency with Section 319 of the Federal Water Pollution Control Act.
- Ensure that new proposed management activities within watersheds containing 303(d) listed water bodies improve or maintain overall progress toward beneficial use attainment for pollutants that led to the listing.
- Implement watershed restoration activities by reducing road-related effects on soil productivity, water quality, and aquatic/riparian species and their habitats.

The following two Soil and Water standards are central in determining if specific proposals follow Forest Plan Direction:

SWST01: Management actions shall be designed in a manner that maintains or restores water quality to fully support beneficial uses and native and desired non-native fish species and their habitat, except as allowed under SWRA Standard #4 below. Use the MATRIX located in Appendix B to assist in determining compliance with this standard.

SWST04: Management actions will neither degrade nor retard attainment of properly functioning soil, water, riparian, and aquatic desired conditions, except: a) Where outweighed by demonstrable short- or long-term benefits to watershed resource conditions….

Desired Condition

The following Desired Conditions listed in the Forest Plan are pertinent to this analysis (Forest Plan 2003: p. III-18):

- Soil protective cover, soil organic matter, and coarse woody material are at levels that maintain or restore soil productivity and soil-hydrologic functions where conditions are at risk or degraded.
- Soils also have adequate physical, biological, and chemical properties to support desired vegetation growth.
- Riparian and aquatic ecosystems have appropriate types and amounts of vegetation. Management actions result in no long-term degradation of soil, water, riparian, and aquatic resources conditions.
- Wetlands and floodplains are maintained where they are properly functioning, and restored where degraded.
- Improving watershed conditions contribute to the de-listing of water quality limited water bodies to meet Clean Water Act (CWA) requirements.
- Public waters are restored where water quality does not support beneficial uses and otherwise are maintained or improved.

Additional Forest Plan direction specific to each MA is provided in the existing condition discussions for each MA.

3.4.4 Existing Condition

Water quality and soil productivity on the Payette National Forest have been directly impacted by the type, extent, and location of designated roads, motorized trails, and cross-country motor vehicle use. These impacts have affected the existing condition of all MAs to varying degrees.

Existing Condition Common to All Management Areas

Non-motorized Trails, Unauthorized Roads, Closed NFS Roads, and Unauthorized Motorized Vehicle Use

The following effects discussions are common to non-motorized trails, unauthorized roads, closed NFS roads, and unauthorized motor vehicle use in all MAs.

Non-motorized trails: Maintenance is conducted on approximately 15 percent of the Forest trails annually. However, erosion continues on all trails. Sediment delivery is greatest where the trails are located in subwatersheds with high watershed vulnerability, within RCAs, and intersect stream crossings.

Unauthorized roads: Unauthorized roads may or may not be open or drivable. Access may be physically blocked by down or live trees. These roads receive no maintenance, so most have drainage and erosion problems. Drainage structures such as ditches, cross-drains, waterbars, or dips may have never been constructed or are no longer functioning. Failures at stream crossings are common, resulting in erosion and sediment delivery.

Closed NFS (Level 1 maintenance) roads: These roads are designated NFS roads that have been closed to use, but that may actually be operationally open. In recent years, some of these roads have been physically closed, waterbars have been installed, and roadbeds and cut and fill slopes have been scarified and seeded. Stream crossings have been stabilized by removing non-

functioning and old log culverts, removal of fill within the channel, and restoration and stabilization of stream banks. However, the majority of these roads still need to be physically closed and stabilized to keep them from contributing sediment to adjacent streams.

Unauthorized motor vehicle use: Unauthorized motorized use would continue to be a problem that adversely affects soil productivity and water quality. The major problems occur on unauthorized roads, Level 1 roads posted but not physically closed, and in meadows adjacent to roads and motorized trails.

Existing Condition by Management Area

A general discussion on the landform, soils, and rivers is provided for each MA. Table SW-1 summarizes the current condition of the soil and water resources in each MA by providing ratings for Subwatershed Vulnerability, Geomorphic Integrity, and Water Quality Integrity.

Table SW-1. The Number of Subwatersheds by Vulnerability and Integrity Ratings and Subwatersheds with 303(d) listed streams, TMDLs, and Public Water Systems by MA

MA	Subwatershed Ratings: Subwatershed Vulnerability			Geomorphic Integrity			Water Quality Integrity			No. 303(d) Subs	No. Subs With TMDLs	No. Public Water System Subs
	High	Mod	Low	High	Mod	Low	High	Mod	Low			
1	5	0	0	0	3	2	0	5	0	1	0	0
2	4	18	6	0	9	19	0	22	6	1	0	0
3	1	4	46	0	14	37	16	20	15	4	0	2
4	1	3	6	5	3	2	6	4	0	2	0	0
5	1	0	8	0	1	8	1	6	2	1	0	0
6	1	5	1	0	3	4	0	5	2	1	0	0
7	0	7	3	3	3	4	0	8	2	3	4	6
8	0	4	2	1	3	2	0	5	1	1	6	0
9	1	7	1	2	5	2	4	5	0	0	0	0
10	4	10	3	8	5	4	8	6	3	5	0	0
11	0	6	3	4	4	1	8	1	0	0	0	0
12	25	10	0	13	8	14	8	15	12	15	12	0
13	4	8	2	8	3	3	4	6	4	4	0	1

Subwatershed Vulnerability is an assessment of a subwatershed's sensitivity to disturbance and its resiliency or natural ability for restoration. The disturbance may be human-caused or natural. This assessment uses several criteria, including soil erosion rates, natural sediment yields, and percentage of landslide-prone areas within the subwatershed.

Geomorphic Integrity is an assessment and comparison of existing soil-hydrologic conditions with historical conditions existing prior to Euro-American settlement. Upland, riparian, and stream conditions are assessed to determine how their integrity and resilience may have changed due to effects from past or current human-caused (road construction, timber harvesting, livestock grazing, etc.) or natural (wildfire, floods, etc.) disturbance. Road density, landslide potential, historic fires, and past timber harvesting, are major factors in determining geomorphic integrity. Relative integrity ratings are assessed at the subwatershed scale and based on the geomorphic resilience of streams and wetland/riparian areas, and the ability of the system to absorb and store water. A subwatershed with a High Integrity rating is in good condition, near or at properly functioning condition, and has low risk from further disturbance. A subwatershed with Moderate Integrity is in fair condition, functioning at risk, and has moderate risk from additional

disturbance. A Low Integrity subwatershed is in poor condition, not properly functioning, and has high risk from additional disturbance.

Water Quality Integrity is an assessment and comparison of existing water quality conditions with historical conditions that existed before Euro-American settlement. Physical, chemical, and biological water conditions are assessed to determine how their integrity and resilience may have changed due to effects from past or current human-caused (road construction, timber harvesting, livestock grazing, etc.) or natural (wildfire, floods, etc.) disturbance. Conditions or values assessed include stream bank damage, sediment loads, channel modification, flow disruption, thermal changes, chemical contamination, and biological stress. Relative integrity ratings are assigned at the subwatershed scale based on whether any designated beneficial use is not fully supported or any condition/value is seriously degraded. Ratings vary from high (functioning appropriately) to moderate (functioning at risk) to low (not functioning appropriately).

In addition, critical designations such as Water Quality Limited Water Bodies 303(d), any Total Maximum Daily Loads (TMDLs), and Public Water System subwatersheds are listed in Table SW-1. 303(d) water bodies denote streams or other water bodies not meeting State Water Quality Standards. Public Water Systems include subwatersheds that provide surface drinking water for towns and communities.

MA 1. Hells Canyon

Elevations range from 1,667 feet at Hells Canyon Reservoir to 7,623 feet atop White Monument. Much of this MA contains steep canyonland breaks of the Snake River. The surface geology is dominated by Seven Devils volcanic rock, with scattered inclusions of metasedimentary and granitic rock. Soils generally have moderate to high surface erosion potential.

The major tributary streams to the Snake River in the area are Deep Creek, Oxbow Creek, Kinney Creek, and Limepoint Creek. There are no natural lakes in the area, but Hells Canyon Reservoir, formed by Hells Canyon Dam on the Snake River, comprises 18 miles of the Management Area's western boundary.

Forest Plan Direction

The following Soil and Water Resource Management Direction (Forest Plan 2003) has been developed specifically for this area and is pertinent to this analysis:

- Avoid ground-disturbing management activities on potentially unstable areas (high-risk landslide-prone areas, active portions of existing landslides...), particularly on oversteepened canyonland slopes in Hells Canyon, to reduce the risk of human-caused landslides (p. III-98: Guideline 0111).

Current Travel Access Effects on Water Quality and Soil Productivity

There are an estimated 35,060 acres within the Hells Canyon MA, with 5,340 acres within RCAs. The entire MA is closed to cross-country motor vehicle use. However, an area (2,040 acres) within 300 feet of designated roads and 100 feet of motorized trails is open to limited motorized access for dispersed camping and vehicle parking. There are 950 acres of RCA open to limited motorized access. The number of miles of designated road and motorized trails and the number of stream crossings is relatively small for this MA.

Subwatershed vulnerability for all five subwatersheds within the MA is rated high (Table SW-1). Subwatersheds with high vulnerability rating are more sensitive to disturbance. The potential for instability and erosion is fairly high in the oversteepened landforms that comprise much of the area.

The following table provides the current numbers for each Soil and Water Indicator.

Table SW-2. Existing Condition of Soil and Water Indicators for MA 1

MA 1: Soil and Water Indicators	Existing Condition
1. Percent (and acres) of the MA designated open to cross-country motor vehicle use and/or limited motorized access.	6% (2,040 acres)
2. Percent (and acres) of RCAs in designated areas open to cross-country motor vehicle use and/or limited motorized access.	18% (950 acres)
3. Miles of designated roads.	1.7
4. Miles of designated two-wheel motorized trails.	2.9
5. Miles of designated ATV and OHV trails.	0.0
6. Miles of designated roads and motorized trails in subwatersheds with a high watershed vulnerability rating.	4.6
7. Miles of designated roads and motorized trails within RCAs.	0.1
8. Number of inventoried stream crossings on designated roads and motorized trails.	0

Geomorphic Integrity ratings for the subwatersheds are rated moderate to low indicating the MA has fair to poor conditions, is functioning at risk to not properly functioning, and is at moderate to high risk from additional disturbance (Table SW-1).

The Water Quality Integrity rating for all subwatersheds is moderate (functioning at risk) (Table SW-1). The primary cause of this rating is localized impacts, including accelerated sediment and thermal changes due to timber harvesting, mining, livestock grazing, and wildfire. One 303(d) water quality limited body is listed in the MA due to historic mining problems associated with the Red Ledge Mine.

MA 2. Snake River

Elevations range from 1,750 feet on Indian Creek to 8,005 feet atop Smith Mountain. The surface geology is primarily Columbia River basalts, with scattered inclusions of granitic and metasedimentary rock. Soils generally have low to high surface erosion potential.

All watersheds drain directly into the Snake River. The major tributary streams to the Snake River in the area are Indian Creek, Bear Creek, Crooked River, and Brownlee Creek. There are no natural lakes in the area, but three large reservoirs (Brownlee, Oxbow, and Hells Canyon) on the Snake River lie to the west of the area.

Forest Plan Direction

The following Soil and Water Resource Management Direction (Forest Plan 2003) has been developed specifically for this area and is pertinent to this analysis:

- Restore riparian vegetation and floodplain function by reducing the adverse effects of roads through relocation, reconstruction, or obliteration in the Brownlee Creek and Crooked River drainages (p. III-114: Objective 0230).
- Initiate restoration of watershed conditions and fish habitat in the Upper Indian Creek, Upper Bear Creek, and Upper Crooked River, and Lower Crooked Creek subwatersheds to help strengthen bull trout populations (p. III-114: Objective 0231).
- No net increase in road densities in the MPC 5.1 portion of Lower Crooked River (p. III-112: Objective 0217).

Current Travel Access Effects on Water Quality and Soil Productivity

Table SW-3 provides the current numbers for each Soil and Water Indicator.

Table SW-3. Existing Condition of Soil and Water Indicators for MA 2

MA 2: Soil and Water Indicators	Existing Condition
1. Percent (and acres) of the MA designated open to cross-country motor vehicle use and/or limited motorized access.	52% (77,790 acres)
2. Percent (and acres) of RCAs in designated areas open to cross-country motor vehicle use and/or limited motorized access.	42% (11,330 acres)
3. Miles of designated roads.	270.8
4. Miles of designated two-wheel motorized trails.	77.7
5. Miles of designated ATV and OHV trails.	2.1
6. Miles of designated roads and motorized trails in subwatersheds with a high watershed vulnerability rating.	41.7
7. Miles of designated roads and motorized trails within RCAs.	73.5
8. Number of inventoried stream crossings on designated roads and motorized trails.	288

There are an estimated 151,590 acres within the Snake River MA, with 27,070 acres within RCAs. Nearly 52 percent of the MA and approximately 42 percent of the RCAs are open to cross-country motor vehicle use and/or limited motorized access. Approximately 10 percent of the roads and motorized trails are within subwatersheds with high vulnerability and approximately 20 percent of the roads and trails are located within RCAs.

Subwatershed Vulnerability ratings range from low to high, with the majority moderate (Table SW-1). The basalt geology in this area is inherently more stable and resilient than those in most other parts of the PNF. Greatest risks occur on the very steep landforms of the MA.

Geomorphic Integrity ratings for the subwatersheds vary from moderate (functioning at risk) to low (not functioning appropriately) (Table SW-1). Localized impacts occur from roads, timber harvesting, mining, wildfires, and livestock grazing. Road density within the MA is moderate to high.

Water Quality Integrity ratings for the subwatersheds vary from moderate to low (Table SW-1). Localized impacts include sediment loading and thermal changes due to roads, water diversions, timber harvesting, mining, natural landslides, and livestock grazing.

Only one of the 28 subwatersheds in this MA was listed as having impaired water bodies under Section 303(d) of the CWA. The pollutant concerns in this subwatershed (Dennett Creek) are sediment, temperature, and flow alteration. Only the upper headwaters of Dennett Creek occur on the PNF. The State of Idaho Department of Environmental Quality is currently completing a subbasin assessment and development of temperature TMDL's for the Wildhorse River watershed.

MA 3. Weiser River

Elevations range from 3,400 feet on the Middle Fork of the Weiser River to 8,126 feet atop Council Mountain. Columbia River basalts dominate the surface geology, with scattered inclusions of metasedimentary and granitic rock. Soils generally have low to moderate surface erosion potential.

The main streams in the area are Mann Creek, Pine Creek, Rush Creek, Hornet Creek, West Fork Weiser River, mainstem Weiser River, East Fork Weiser River, Middle Fork Weiser River, and Little Weiser River. The largest water body is Lost Valley Reservoir (989 acres).

Forest Plan Direction

The following Soil and Water Resource Management Direction (Forest Plan 2003) has been developed specifically for this area and is pertinent to this analysis:

- Improve water quality and assist in de-listing 303(d) water bodies by reducing road-related accelerated sediment through a combination of road decommissioning, relocation, reconstruction, and maintenance in the Mann Creek, Pine Creek, West Fork Weiser River, East Branch Weiser River, East Fork Weiser River, Middle Fork Weiser River, and Little Weiser River drainages (p. III-131: Objective 0318).
- Restore riparian vegetation and floodplain function throughout the Management Area by reducing road-related impacts through relocation, reconstruction, or obliteration (p. III-131: Objective 0319).
- Reduce riparian road density and stream crossings in all drainages, with emphasis on those with bull trout populations or suitable habitat (p. III-131: Objective 0322).

Current Travel Access Effects on Water Quality and Soil Productivity

The following table provides the current numbers for each Soil and Water Indicator.

Table SW-4. Existing Condition of Soil and Water Indicators for MA 3.

MA 3: Soil and Water Indicators (SWI)	Existing Condition
1. Percent (and acres) of the MA designated open to cross-country motor vehicle use and/or limited motorized access.	80% (240,600 ac.)
2. Percent (and acres) of RCAs in designated areas open to cross-country motor vehicle use and/or limited motorized access.	75% (43,160 acres)
3. Miles of designated roads.	815.0
4. Miles of designated two-wheel motorized trails.	70.9
5. Miles of designated ATV and OHV trails.	21.1
6. Miles of designated roads and motorized trails in subwatersheds with a high watershed vulnerability rating.	11.2
7. Miles of designated roads and motorized trails within RCAs.	305.9
8. Number of inventoried stream crossings on designated roads and motorized trails.	762

There are an estimated 299,990 acres within the Weiser River MA, with 57,660 acres within RCAs. Approximately 80 percent of the MA and 75 percent of the RCAs in the MA are open to cross-country motor vehicle use and/or limited motorized access. Only one percent of the roads and motorized trails are within subwatersheds with high vulnerability. However, approximately 34 percent of the roads and trails are located within RCAs.

The majority of this MA is open to cross-country motor vehicle use and/or limited motorized access, so the current impacts from off-route travel are widespread. The high number of miles of roads and trails in RCAs (316 miles) is causing many localized impacts in adjacent riparian areas. Although impacts have been fairly high in some areas, the basalt landtypes and productive soils in this area are inherently more stable and resilient than those on other portions of the Forest.

Subwatershed Vulnerability ratings range from low to high, with the large majority being low (Table SW-1). The MA is located predominantly on Columbia River basalts, so impacts on erosion and sediment delivery from roads, trails, and off-road use is low. The exception is where roads and trails are adjacent to streams.

Geomorphic Integrity ratings for the subwatersheds vary from moderate to low, with the majority being low (Table SW-1). There are localized impacts from roads, timber harvesting, livestock

grazing, and recreation. The primary cause for the low rating is the high road density and high extent of past timber harvesting found in many subwatersheds.

Water Quality Integrity ratings for the subwatersheds vary from high (functioning appropriately) to low (not functioning appropriately) (Table SW-1). Water quality has been affected by localized impacts, including sediment loading and thermal changes due to water diversions, roads, timber harvesting, livestock grazing, and recreation.

Four of the 51 subwatersheds in this area were listed as having impaired water bodies under Section 303(d) of the CWA. These subwatersheds are Johnson Creek, Lower West Fork Weiser, Upper West Fork Weiser, and Lower Lost Creek. A draft TMDL for the Weiser River Subbasin was released in 2006. The primary pollutants affecting National Forest System (NFS) lands are sediment and temperature.

MA 4. Rapid River

Elevations range from 2,200 feet on Rapid River to 8,747 feet atop Jackley Mountain. The surface geology is a mix of Seven Devils volcanics and Columbia River basalts, with border zone metamorphics in the Elk Creek area. Soils generally have low to moderate surface erosion potential.

The MA comprises portions of the Rapid River, Lower Little Salmon, and Middle Little Salmon Watersheds that drain into the Little Salmon River Subbasin, which flows north to the Salmon River. Portions of the Lower Boulder Creek and Trail Creek Subwatersheds of the Middle Little Salmon Watershed lie within the MA. The main streams in the area are Rapid River, Boulder Creek, Lockwood Creek, Fall Creek, and Elk Creek. There are several high mountain lakes at the eastern edge of the Seven Devils Mountains, and in the upper Elk Creek drainage.

Forest Plan Direction

The following Soil and Water Resource Management Direction (Forest Plan 2003) has been developed specifically for this area and is pertinent to this analysis:

- Improve water quality by reducing road-related accelerated sediment through a combination of road closure, obliteration, decommissioning, relocation, reconstruction, and maintenance in the upper portion of the Lower Boulder Creek subwatershed (p. III-148: Objective 0429).
- Restore fish habitat in the upper portion of the Lower Boulder Creek subwatershed by emphasizing aquatic connectivity (removal of fish barrier culverts) and reducing riparian road densities (p. III-148: Objective 0433).
- Enforce motorized trail designations and restrictions with increased on-the-ground patrols to minimize erosion and sedimentation problems in riparian areas (p. III-149: Objective 0436).

Current Travel Access Effects on Water Quality and Soil Productivity

Table SW-5 provides the current numbers for each Soil and Water Indicator.

There are an estimated 62,140 acres within the Rapid River MA, with 12, 330 acres within RCAs. Only 20 percent of this MA and 23 percent of the RCAs are open to cross-country motor vehicle use and/or limited motorized access. Only one mile of roads and motorized trails occurs within subwatersheds with high vulnerability. Approximately 20 percent of the roads and trails are located within RCAs.

Subwatershed Vulnerability ratings range from low to high, with the majority being low (Table SW-1). Only a small portion of this MA is open to off-road travel, so the current impacts from off-road travel are localized. Geomorphic Integrity ratings for the subwatersheds vary from high

to low with half rated high. The high rating is due to the low road density within the designated subwatersheds.

Table SW-5. Existing Condition of Soil and Water Indicators for MA 4.

MA 4: Soil and Water Indicators	Existing Condition
1. Percent (and acres) of the MA designated open to cross-country motor vehicle use and/or limited motorized access.	20% (12,570 acres)
2. Percent (and acres) of RCAs in designated areas open to cross-country motor vehicle use and/or limited motorized access.	23% (2,790 acres)
3. Miles of designated roads.	26.1
4. Miles of designated two-wheel motorized trails.	46.6
5. Miles of designated ATV and OHV trails.	3.5
6. Miles of designated roads and motorized trails in subwatersheds with a high watershed vulnerability rating.	1.6
7. Miles of designated roads and motorized trails within RCAs.	15.0
8. Number of inventoried stream crossings on designated roads and motorized trails.	73

Water Quality Integrity ratings for the subwatersheds vary from high (functioning appropriately) to moderate (functioning at risk) (Table SW-1). Rapid River is a designated Wild and Scenic River with emphasis placed on maintaining its high water quality standards. Unauthorized ATV use has caused erosion and sediment deposition problems. Two of the ten subwatersheds in this area (Indian-Denny and Elk Creek) were listed as having impaired water bodies under Section 303(d) of the CWA. The pollutant of concern for both subwatersheds is sediment. A Draft TMDL for the Little Salmon River was released in August 2005.

MA 5. Middle Little Salmon River

Elevations range from 3,800 feet to above 8,000 feet on Granite Mountain. The surface geology is predominantly Columbia River basalts, with border zone metamorphics along the eastern edge. Soils generally have low to moderate surface erosion potential.

The MA comprises all or portions of the Middle Little Salmon and Upper Little Salmon watersheds that drain into the Little Salmon River Subbasin. The main streams in the area are Boulder Creek, Round Valley Creek, Mud Creek, Sixmile Creek, Fourmile Creek, and Threemile Creek.

Forest Plan Direction

The following Soil and Water Resource Management Direction (Forest Plan 2003) has been developed specifically for this area and is pertinent to this analysis:

- Improve water quality and geomorphic integrity by reducing road-related accelerated sediment throughout the Management Area (p. III-160: Objective 0518).
- Restore riparian vegetation and floodplain function in localized areas throughout the Management Area by reducing road-related impacts through relocation, reconstruction, or decommissioning (p. III-161: Objective 0519).

Current Travel Access Effects on Water Quality and Soil Productivity

Table SW-6 provides the current numbers for each Soil and Water Indicator.

Table SW-6. Existing Condition of Soil and Water Indicators for MA 5.

MA 5: Soil and Water Indicators	Existing Condition
1. Percent (and acres) of the MA designated open to cross-country motor vehicle use and/or limited motorized access.	87% (30,910 acres)
2. Percent (and acres) of RCAs in designated areas open to cross-country motor vehicle use and/or limited motorized access.	78% (6,820 acres)
3. Miles of designated roads.	98.3
4. Miles of designated two-wheel motorized trails.	3.0
5. Miles of designated ATV and OHV trails.	0.0
6. Miles of designated roads and motorized trails in subwatersheds with a high watershed vulnerability rating.	0.1
7. Miles of designated roads and motorized trails within RCAs.	30.9
8. Number of inventoried stream crossings on designated roads and motorized trails.	120

There are an estimated 35,580 acres within the Middle Little Salmon River MA, with 8,680 acres within RCAs. Approximately 87 percent of the MA and 78 percent of the RCAs are open to cross-country motor vehicle use and/or limited motorized access. No roads or motorized trails occur in subwatersheds with high vulnerability, but about 30 percent are located within RCAs.

Subwatershed Vulnerability ratings range from low to high, with the majority being low (Table SW-1). Impacts on erosion and sediment delivery from motorized use are low.

Geomorphic Integrity ratings for the subwatersheds vary from moderate (functioning at risk) to low (not functioning appropriately), with the majority being low. Localized impacts are due primarily to sedimentation and stream channel modification from adjacent roads.

Water Quality Integrity ratings for the subwatersheds vary from high to low, with the majority moderate (Table SW-1). Localized impacts are due primarily to accelerated sediment from roads, timber harvesting, and livestock grazing. Two of the nine subwatersheds in the MA (Upper Little Salmon and Big Creek) were listed as having impaired water bodies under Section 303(d) of the CWA. The pollutants of concern are sediment and nutrients. A Draft TMDL for the Little Salmon River was released in August 2005.

MA 6. Goose Creek/Hazard Creek

Elevations range from 3,600 feet on Hazard Creek to 8,659 feet atop Hard Butte. The surface geology is a mix of Idaho batholith granitics and border zone metamorphics. Soils generally have moderate to high surface erosion potential, and low to moderate productivity.

The MA contains portions of the Goose Creek, Hazard Creek, and Upper Little Salmon River watersheds. These drain into the Little Salmon River Subbasin, which flows north to the Salmon River. The main streams include Hazard Creek, Hard Creek, and Goose Creek.

Forest Plan Direction

The following Soil and Water Resource Management Direction (Forest Plan 2003) has been developed specifically for this area and is pertinent to this analysis:

- Improve water quality and geomorphic integrity by reducing road-related accelerated sediment in the Goose Creek Watershed (p. III-175: Objective 0626).

- Identify and implement actions to reduce impacts to soil and water from Hartley Meadows Road (p. III-175: Objective 0627).
- Reduce soil compaction and restore vegetation by restricting dispersed camping to specific sites around Goose Lake Reservoir and Brundage Reservoir (p. III-175: Objective 0629).
- Improve stream crossings on Forest Trails 344 and 347 to reduce impacts on water quality and fish habitat, and increase user safety (p. III-175: Objective 0631).

Current Travel Access Effects on Water Quality and Soil Productivity

Table SW-7 provides the current numbers for each Soil and Water Indicator.

Table SW-7. Existing Condition of Soil and Water Indicators for MA 6.

MA 6: Soil and Water Indicators	Existing Condition
1. Percent (and acres) of the MA designated open to cross-country motor vehicle use and/or limited motorized access.	50% (38,540 acres)
2. Percent (and acres) of RCAs in designated areas open to cross-country motor vehicle use and/or limited motorized access.	57% (7,480 acres)
3. Miles of designated roads.	113.1
4. Miles of designated two-wheel motorized trails.	29.3
5. Miles of designated ATV and OHV trails.	7.4
6. Miles of designated roads and motorized trails in subwatersheds with a high watershed vulnerability rating.	12.0
7. Miles of designated roads and motorized trails within RCAs.	35.6
8. Number of inventoried stream crossings on designated roads and motorized trails.	154

There are an estimated 77,120 acres within the Goose Creek/Hazard Creek MA, with 13,100 acres within RCAs. Approximately 50 percent of the MA and 57 percent of the RCAs are open to cross-country motor vehicle use and/or limited motorized access. Low amounts of roads and motorized trails occur in subwatersheds with high vulnerability are low, but 24 percent occur in RCAs.

Subwatershed Vulnerability ratings range from moderate to low, with the majority moderate (Table SW-1). Because this MA is located on basalts and border zone granitics of the Idaho Batholith, potential impacts on erosion and sediment delivery from roads, trails, and off-road use is moderate.

Geomorphic Integrity ratings for the subwatersheds vary from moderate to low with the majority being low. In the Goose Creek Watershed there are altered water flows from the reservoirs, and accelerated sediment from roads, timber harvesting, private land uses, and livestock grazing. Road densities are high. There have been fewer management-related impacts in the Hazard Creek Watershed, where road density is moderate.

Water Quality Integrity ratings for the subwatersheds vary from moderate (functioning at risk) to low (not functioning appropriately), with the majority being moderate (Table SW-1). Water quality is functioning at risk in the Goose Creek Watershed due to altered water flows from reservoirs, and accelerated sediment from roads, timber harvesting, private land uses, and livestock grazing. Water quality is functioning at less risk in the Hazard Creek watershed; however, there is localized sedimentation from roads, timber harvesting, and unauthorized ATV use. One subwatershed was listed as having impaired water bodies under Section 303(d) of the CWA. Temperature is identified as the pollutant of concern in Brundage Reservoir. A Draft TMDL for the Little Salmon River was released in August 2005.

MA 7. Payette Lakes

Elevations range from 5,200 feet near Payette Lake to 8,875 feet atop Sawtooth Peak. Granitic rocks of the Idaho batholith dominate the surface geology. Soils generally have moderate to high surface erosion potential.

The MA comprises portions of the Upper Payette Lakes, Upper Lake Fork Creek, and Payette Lake watersheds in the Payette Lakes Subbasin, which drains into the Payette River. Main streams are Fisher Creek, Twentymile Creek, and North and East Forks of Lake Fork Creek.

Forest Plan Direction

The following Soil and Water Resource Management Direction (Forest Plan 2003) has been developed specifically for this area and is pertinent to this analysis:

- Improve water quality and geomorphic integrity by reducing road-related accelerated sediment in the Upper Payette Lakes and Payette Lake Watersheds, which comprise the public water system for the city of McCall and surroundings. Decommission existing roads in the watersheds that are no longer needed for public access or long-term management (p. III-189: Objective 0724).
- Identify recreational campsites or parking areas that are contributing unacceptable levels of accelerated sediment or compaction to the Payette Lakes and Lake Fork Creek riparian areas. Relocate or harden sites where needed to reduce compaction and erosion to riparian areas by end of planning period (p. III-189: Objective 0726).
- Maintain the meadow ecosystem and restore wet meadows in the Bear Basin area by reducing soil compaction, accelerated erosion, and loss of vegetation from motorized recreation. Install information signs and designate the area as non-motorized on the Forest Travel Map (p. III-190: Objective 0727).
- Implement watershed restoration and other management activities in the Upper Payette Lakes Watershed consistent with Big Payette Lake Water Quality Management Plan to address concerns within the public water system (p. III-190: Objective 0730).

Current Travel Access Effects on Water Quality and Soil Productivity

Table SW-8 provides the current numbers for each Soil and Water Indicator.

Table SW-8. Existing Condition of Soil and Water Indicators for MA 7.

MA 7: Soil and Water Indicators	Existing Condition
Percent (and acres) of the MA designated open to cross-country motor vehicle use and/or limited motorized access.	33% (33,550 acres)
Percent (and acres) of RCAs in designated areas open to cross-country motor vehicle use and/or limited motorized access.	35% (5,570 acres)
Miles of designated roads.	59.1
Miles of designated two-wheel motorized trails.	24.8
Miles of designated ATV and OHV trails.	4.5
Miles of designated roads and motorized trails in subwatersheds with a high watershed vulnerability rating.	0.0
Miles of designated roads and motorized trails within RCAs.	16.6
Number of inventoried stream crossings on designated roads and motorized trails.	61

There are an estimated 100,730 acres within the Payette Lakes MA, with 16,060 acres within RCAs. Approximately 33 percent of the MA and 35 percent of the RCAs are open to cross-country motor vehicle use and/or limited motorized access. None the roads and motorized trails

are within subwatersheds with high vulnerability. Approximately 19 percent of the roads and trails are located within RCAs.

Subwatershed Vulnerability ratings range from moderate to low, with the majority moderate (Table SW-1). Because this MA is located on metamorphic and border zone granitics of the Idaho Batholith, potential impacts on erosion and sediment delivery from roads, trails, and off-road use is moderate.

Geomorphic Integrity ratings for the subwatersheds vary from high to moderate to low. In 1994 wildfires burned a large portion of the MA. Past road building, timber harvesting, livestock grazing, and recreation have had additional localized impacts on stream sediment levels and riparian vegetation. Road densities range from low to high.

Water Quality Integrity ratings vary from moderate (functioning at risk) to low (not functioning appropriately), with the majority being moderate (Table SW-1). Past road construction, timber harvesting, livestock grazing, and recreation have had localized impacts on stream sediment levels and riparian vegetation. Three of the 10 subwatersheds in this area were listed as having impaired water bodies under Section 303(d) of the Clean Water Act: Payette Lake, Little Payette Lake, and Cougar-Pearl. The pollutant of concern is not identified. The Middle Payette Lakes, Little Payette Lake, North Fork Lake Creek, and East Fork Lake Creek subwatersheds have an assigned TMDL.

Six subwatersheds in the MA are designated as a public water system for the city of McCall.

MA 8. Kennally Creek

Elevations range from 5,250 feet where Camp Creek leaves the Forest to 8,457 feet atop Buckhorn Mountain. Granitic rocks of the Idaho batholith dominate the surface geology.

The MA contains portions of the Boulder Creek and Kennally Creek watersheds. The main streams are Boulder Creek, Rapid Creek, and Kennally Creek.

Forest Plan Direction

The following Soil and Water Resource Management Direction (Forest Plan 2003) has been developed specifically for this area and is pertinent to this analysis:

- Work with the State of Idaho to de-list Cascade Reservoir drainages from their impaired water bodies list by having a qualified resource specialist participate as a member of the Technical Advisory Committee, who will help identify appropriate watershed restoration projects to reduce sediment and phosphorus inputs to the reservoir (p. III-202: Objective 0822).
- Reduce impacts to Kennally Creek, Powelson Creek, and Rapid Creek riparian areas from recreation sites or uses. Identify campsites or parking areas that are contributing unacceptable levels of accelerated sediment, compaction, or vegetation loss to the creek riparian areas. Rehabilitate, relocate, or harden sites where needed to reduce impacts (p. III-202: Objective 0823).
- Increase riparian vegetation and hydrologic function by decommissioning roads within riparian areas and returning road surfaces, cuts, and fills to productivity (p. III-202: Objective 0824).
- Management activities will result in a net reduction in accelerated sediment and phosphorus levels to comply with the Total Maximum Daily Load objective for Cascade Reservoir (p. III-202: Objective 0825).

Current Travel Access Effects on Water Quality and Soil Productivity

Table SW-9 provides the current numbers for each Soil and Water Indicator.

Table SW-9. Existing Condition of Soil and Water Indicators for MA 8

MA 8: Soil and Water Indicators	Existing Condition
1. Percent (and acres) of the MA designated open to cross-country motor vehicle use and/or limited motorized access.	39% (13,370 acres)
2. Percent (and acres) of RCAs in designated areas open to cross-country motor vehicle use and/or limited motorized access.	43% (3,540 acres)
3. Miles of designated roads.	26.1
4. Miles of designated two-wheel motorized trails.	22.5
5. Miles of designated ATV and OHV trails.	2.8
6. Miles of designated roads and motorized trails in subwatersheds with a high watershed vulnerability rating.	0.1
7. Miles of designated roads and motorized trails within RCAs.	22.5
8. Number of inventoried stream crossings on designated roads and motorized trails.	52

There are an estimated 34,300 acres within the Kennally Creek MA, with 8,380 acres within RCAs. Approximately 39 percent of the MA and 43 percent of the RCAs are open to cross-country motor vehicle use and/or limited motorized access. Approximately 44 percent of the roads and trails are located within RCAs.

Subwatershed Vulnerability ratings range from low to moderate, with the majority being moderate (Table SW-1).

Geomorphic Integrity ratings for the subwatersheds vary from high (functioning appropriately) to moderate (functioning at risk) to low (not functioning appropriately). There are localized impacts from roads, timber harvesting, livestock grazing, and recreation in the roaded portion of the area. Impacts include accelerated sediment, stream bank degradation, and stream channel modification.

Water Quality Integrity ratings for the subwatersheds vary from moderate to low, with the majority being moderate. There are localized impacts in the roaded portions primarily from roads and timber harvesting. Accelerated phosphorus and sediment contributions from this area flow downstream to Cascade Reservoir, which is listed as an impaired water body under Section 303(d) of the CWA, with an assigned TMDL. In 1998, a Watershed Management Plan was developed for the reservoir and its tributaries to address water quality concerns. The plan calls for a thirty percent reduction in sediment within the watershed. Roads, timber harvesting, livestock grazing, and recreation are the primary causes of accelerated sediment in this area. All of the subwatersheds in this area have an assigned TMDL.

MA 9. Lake Creek/French Creek

Elevations range from 2,900 feet on Lake Creek to 8,841 feet atop Patrick Butte. The surface geology is primarily granitic rock from the Idaho Batholith, with localized volcanic rock in the Lava Ridge area. Soils generally have moderate to high surface erosion potential.

The MA comprises portions of the Allison-Lake, Partridge-Kelly, and French Creek Watersheds that drain directly into the Salmon River in the Lower Salmon River Subbasin. The main streams in the area are Lake Creek, Partridge Creek, Elkhorn Creek, French Creek, and Little French Creek. Most of the high mountain lakes are in the area around Hard and Patrick Buttes.

Forest Plan Direction

Forest-wide direction applies. There is no specific soil and water resource direction for the Lake Creek/French Creek Management Area pertinent to this analysis.

Current Travel Access Effects on Water Quality and Soil Productivity

Table SW-10 provides the current numbers for each Soil and Water Indicator.

There are an estimated 83,740 acres within the Lake Creek/French Creek MA, with 13,980 acres within RCAs. Only 8 percent of the MA and approximately 8 percent of the RCAs are open to cross-country motor vehicle use and/or limited motorized access. Only six percent of the roads and motorized trails are within subwatersheds with high vulnerability and 20 percent of the roads and trails are located within RCAs.

Table SW-10. Existing Condition of Soil and Water Indicators for MA 9.

MA 9: Soil and Water Indicators	Existing Condition
1. Percent (and acres) of the MA designated open to cross-country motor vehicle use and/or limited motorized access.	8% (6,380 acres)
2. Percent (and acres) of RCAs in designated areas open to cross-country motor vehicle use and/or limited motorized access.	8% (1,160 acres)
3. Miles of designated roads.	20.9
4. Miles of designated two-wheel motorized trails.	85.1
5. Miles of designated ATV and OHV trails.	0.3
6. Miles of designated roads and motorized trails in subwatersheds with a high watershed vulnerability rating.	8.2
7. Miles of designated roads and motorized trails within RCAs.	22.5
8. Number of inventoried stream crossings on designated roads and motorized trails.	101

Subwatershed Vulnerability ratings range from low to high, with the majority being moderate (Table SW-1). The MA is located on basalts and border zone granitics, so impacts on erosion and sediment delivery from roads, trails, and off-road use is moderate.

Geomorphic Integrity ratings for the subwatersheds vary from high (functioning appropriately) to low (not functioning appropriately) with the majority rated as moderate (functioning at risk). Localized sedimentation occurs from roads, timber harvesting, livestock grazing, and dispersed recreation. Road densities are low to moderate.

Water Quality Integrity ratings for the subwatersheds vary from high (functioning appropriately) to moderate (functioning at risk) (Table SW-1). There is localized accelerated sediment from roads, timber harvesting, livestock grazing, and dispersed recreation. No 303(d) listed water bodies or TMDLs are associated with this MA.

MA 10. Fall Creek/Warren Creek

Elevations range from 1,950 feet on the Salmon River to 8,533 feet atop Steamboat Mountain. The surface geology is mostly metamorphic, with granites of the Idaho batholith occurring mostly at higher elevations. Soils generally have moderate to high surface erosion potential.

The MA comprises portions of the Fall-Carey, California-Bull, and Warren Creek watersheds. Major streams include Fall Creek, Carey Creek, California Creek, and Warren Creek.

Forest Plan Direction

The following Soil and Water Resource Management Direction (Forest Plan 2003) has been developed specifically for this area and is pertinent to this analysis:

- Work with the State of Idaho to address problems in Warren Creek that have caused it to be listed as a Water Quality Limited water body (p. III-224: Objective 1020).
- Improve water quality and geomorphic integrity by reducing accelerated sediment from roads in the Fall Creek Watershed, and from roads and mining in the Warren Creek and California-Bull Watersheds (p. III-224: Objective 1021).
- Reduce impacts to Warren Creek and tributary riparian areas from recreation sites or uses. Identify recreational camping sites or parking areas that are contributing unacceptable levels of accelerated sediment, compaction, or vegetation loss. Rehabilitate, relocate, or harden sites where needed to reduce impacts (p. III-224: Objective 1023).
- Increase riparian vegetation and hydrologic function by decommissioning roads within riparian areas, returning road surfaces, ruts, and fills to productivity, and restoring abandoned mine sites (p. III-224: Objective 1024).
- Address sediment concerns caused by motorized use at the Warren and Steamboat Creek fords (p. III-224: Objective 1026).
- Evaluate strategies to reduce accelerated sediment and riparian impacts associated with the Carey Creek Road (Forest Road 318) (p. III-224: Objective 1027).
- Restore fish habitat degradation in Upper Warren Creek due to road impacts from past mining activities (p. III-224: Objective 1029).

Current Travel Access Effects on Water Quality and Soil Productivity

Table SW-11 provides the current numbers for each Soil and Water Indicator.

Table SW-11. Existing Condition of Soil and Water Indicators for MA 10.

MA 10: Soil and Water Indicators	Existing Condition
1. Percent (and acres) of the MA designated open to cross-country motor vehicle use and/or limited motorized access.	43% (45,950 ac.)
2. Percent (and acres) of RCAs in designated areas open to cross-country motor vehicle use and/or limited motorized access.	44% (8,090 acres)
3. Miles of designated roads.	54.4
4. Miles of designated two-wheel motorized trails.	19.6
5. Miles of designated ATV and OHV trails.	10.5
6. Miles of designated roads and motorized trails in subwatersheds with a high watershed vulnerability rating.	3.3
7. Miles of designated roads and motorized trails within RCAs.	16.5
8. Number of inventoried stream crossings on designated roads and motorized trails.	49

There are an estimated 105,830 acres within the Fall Creek/Warren Creek MA, with 18,190 acres within RCAs. A little more than 43 percent of the MA and approximately 44 percent of the RCAs are open to cross-country motor vehicle use and/or limited motorized access. Most of this open area is in the Warren Creek watershed and adjacent tributaries to the Main Salmon River. Only a small portion of the roads and motorized trails are within subwatersheds with high vulnerability and 19 percent of the roads and trails are located within RCAs.

Subwatershed Vulnerability ratings range from low to high, with the majority being moderate (Table SW-1). Because this MA is located on basalts and border zone granitics, impacts on erosion and sediment delivery from roads, trails, and off-road use is moderate.

Geomorphic Integrity ratings for the subwatersheds vary from high (functioning appropriately) to moderate (functioning at risk) to low (not functioning appropriately). Some areas of the Warren Creek and California-Bull Watersheds have localized and intensive impacts to stream channels and riparian areas from historic dredge mining, as well as accelerated sediment from roads and placer and hard rock mining. Some areas of the Fall Creek Watershed have accelerated sediment levels associated with roads and past timber harvesting.

Water Quality Integrity ratings for the subwatersheds vary from high (functioning appropriately) to moderate (functioning at risk) to low (not functioning appropriately) (Table SW-1). The East Fork Fall Creek has accelerated sediment levels associated with roads. Some areas of the Warren Creek Watershed have localized, intensive impacts to stream channels and riparian areas from historic dredge mining, as well as accelerated sediment from roads, dispersed recreation, and placer and hard rock mining.

Five of the seventeen watersheds in the MA (Lower Warren Creek, Middle Warren Creek, Upper Warren Creek, Steamboat Creek, and Schissler Creek) were listed as having impaired water bodies under Section 303(d) of the CWA. The pollutant of concern is habitat alteration. The State of Idaho recently completed a subbasin assessment that recommends de-listing these water bodies. There are currently no TMDLs associated with this area.

MA 11. Upper Secesh River

Elevations in MA 11 range from 5,500 feet on the Secesh River to 8,751 feet atop Bear Pete Mountain. The MA contains large areas of meadows and wetlands along the valley bottoms. The surface geology is dominated by granitic rock from the Idaho batholith, with scattered inclusions of metamorphic rock. Soils generally have moderate surface erosion potential on the depositional lands and moderately high to high potential on the glaciated mountain and fluvial landforms.

The MA comprises portions of the Upper Secesh and Lake Creek Watersheds of the South Fork Salmon River Subbasin. The major streams in the area are the Secesh River and its main tributaries: Lake Creek, Summit Creek, Grouse Creek, and Victor Creek.

Forest Plan Direction

The following Soil and Water Resource Management Direction (Forest Plan 2003) has been developed specifically for this area and is pertinent to this analysis:

- Improve water quality and geomorphic integrity by reducing road-related accelerated sediment in the Upper Secesh Watershed. Specific examples include the Marshall Meadows (325) Josephine Lake (315), Grouse Creek (325), and Chimney Rock (335) Roads (p. III-236: Objective 1122).
- Relocate or decommission portions of the Grouse Creek Road to improve water quality and fish habitat for bull trout, Chinook salmon, and steelhead in the Grouse Creek subwatershed (p. III-236: Objective 1124).
- Restore or maintain riparian area composition, structure, and function in localized areas of the Upper Lake Creek, Bear Pete-Threemile, Grouse Creek, and Lower Lake Creek subwatersheds by improving riparian vegetation and hydrologic function through decommissioning or obliterating roads within riparian areas and returning road surfaces, cuts, and fills to productivity (p. III-236: Objective 1125).

Current Travel Access Effects on Water Quality and Soil Productivity

Table SW-12 provides the current numbers for each Soil and Water Indicator.

Table SW-12. Existing Condition of Soil and Water Indicators for MA 11.

MA 11: Soil and Water Indicators	Existing Condition
1. Percent (and acres) of the MA designated open to cross-country motor vehicle use and/or limited motorized access.	30% (25,250 acres)
2. Percent (and acres) of RCAs in designated areas open to cross-country motor vehicle use and/or limited motorized access.	35% (5,170 acres)
3. Miles of designated roads.	33.8
4. Miles of designated two-wheel motorized trails.	29.9
5. Miles of designated ATV and OHV trails.	12.9
6. Miles of designated roads and motorized trails in subwatersheds with a high watershed vulnerability rating.	0.0
7. Miles of designated roads and motorized trails within RCAs.	23.1
8. Number of inventoried stream crossings on designated roads and motorized trails.	56

There are an estimated 83,570 acres within the Upper Secesh MA, with 14,860 acres within RCAs. Less than 30 percent of the MA and approximately 35 percent of the RCAs are open to cross-country motor vehicle use and/or limited motorized access. Over half of the open area is in the zone of limited motorized access. None of the roads and motorized trails is within subwatersheds with high vulnerability and approximately 30 percent of the roads and trails are located within RCAs. This MA is characterized by large meadows within the valley bottoms adjacent to streams. There is a relative moderate impact on soil productivity and water quality and along the existing road and trail network, especially associated with both large and isolated wetlands.

Subwatershed Vulnerability ratings range from low to moderate, with the majority moderate (Table SW-1). Because this MA is located on border zone granitics, impacts on erosion and sediment delivery from roads, trails, and off-road use is moderate.

Geomorphic Integrity ratings for the subwatersheds vary from high (functioning appropriately) to low (not functioning appropriately). Localized accelerated sediment and stream channel modification occurs, primarily from roads and ATV trails.

The primary concern with water quality is sedimentation associated with the roaded portion of this MA. Water Quality Integrity ratings for the subwatersheds vary from high (functioning appropriately) to moderate (functioning at risk). Localized accelerated sediment occurs, primarily from roads, grazing, and timber harvesting. No impaired water bodies listed under Section 303(d) of the CWA and no TMDL-assigned subwatersheds occur in this MA.

MA 12. South Fork Salmon River

Elevations range from 2,180 feet on the South Fork Salmon River to 9,322 feet atop North Loon Mountain. The South Fork Salmon River and its main tributaries are dominated by deeply entrenched, steep canyonland, with slope gradients of 40 to 80 percent. Granitic rocks of the Idaho batholith and scattered Paleozoic metamorphic rocks dominate the surface geology. Soils generally have moderately high to high surface erosion potential.

The MA comprises portions of six watersheds (5th field hydrologic unit) in the South Fork Salmon River Subbasin: Lower Secesh, Lower South Fork Salmon River, Middle South Fork

Salmon River, Lower East Fork South Fork Salmon River, Buckhorn-Fitsum, and Blackmare-Fourmile. The major streams in the area are the South Fork Salmon River, Secesh River, East Fork South Fork Salmon River, Lick Creek, Pony Creek, Elk Creek, Fitsum Creek, Buckhorn Creek, Fourmile Creek, and Blackmare Creek.

Forest Plan Direction

The following Soil and Water Resource Management Direction (Forest Plan 2003) has been developed specifically for this area and is pertinent to this analysis:

- Improve water quality and geomorphic integrity by implementing watershed restoration and reducing accelerated sediment impacts in localized areas of the Management Area (p. III-252: Objective 1234).
- Assist in de-listing South Fork Salmon River from the State of Idaho's impaired water bodies list by applying appropriate and active watershed restoration to reduce sediment, which is the identified pollutant of concern (p. III-252: Objective 1235).
- Rehabilitate, decommission, or stabilize Forest Trail 076 (Davis Ranch Road) to reduce accelerated erosion and sedimentation (p. III-252: Objective 1236).
- Restore or maintain riparian area composition, structure, and function in localized areas of the South Fork Salmon River drainage by improving riparian vegetation and hydrologic function through decommissioning or obliterating roads within riparian areas and returning road surfaces, cuts, and fills to productivity (p. III-252: Objective 1237).
- Reduce impacts to riparian areas from recreation sites or uses. Identify recreational campsites or parking areas that are contributing unacceptable levels of accelerated sediment, compaction, or vegetation loss. Rehabilitate, relocate, or harden sites where needed to reduce impacts (p. III-252: Objective 1238).
- Inventory existing unauthorized roads within the Management Area to identify watershed improvement opportunities (p. III-253: Objective 1240).

Current Travel Access Effects on Water Quality and Soil Productivity

Table SW-13 provides the current numbers for each Soil and Water Indicator.

Table SW-13. Existing Condition of Soil and Water Indicators for MA 12.

MA 12: Soil and Water Indicators	Existing Condition
1. Percent (and acres) of the MA designated open to cross-country motor vehicle use and/or limited motorized access.	10% (35,580 acres)
2. Percent (and acres) of RCAs in designated areas open to cross-country motor vehicle use and/or limited motorized access.	14% (9,780 acres)
3. Miles of designated roads.	83.1
4. Miles of designated two-wheel motorized trails.	163.6
5. Miles of designated ATV and OHV trails.	8.1
6. Miles of designated roads and motorized trails in subwatersheds with a high watershed vulnerability rating.	217.2
7. Miles of designated roads and motorized trails within RCAs.	92.7
8. Number of inventoried stream crossings on designated roads and motorized trails.	221

There are an estimated 100,270 acres within the Big Creek/Stibnite MA, with 16,480 acres within RCAs. Less than 10 percent and approximately 14 percent of the RCAs of the MA are open to cross-country motor vehicle use and/or limited motorized access. Over half of the open area is within the area of limited motorized access. The other is located in the Lower South Fork Salmon River Basin on the McCall Ranger District. More than 85 percent of the roads and motorized trails are within subwatersheds with high vulnerability and approximately 36 percent of the roads

and trails are located within RCAs. There is a relative high impact on soil productivity and water quality localized along the existing road and trail network.

Subwatershed Vulnerability ratings range from moderate to high, with the majority high (Table SW-1). The majority of this MA is located on fluvial granitics of the Idaho Batholith, so impacts on erosion and sediment delivery from roads, trails, and off-road use are high.

Geomorphic Integrity ratings for the subwatersheds vary from high to low. Localized impacts from roads include accelerated sediment and stream channel modification.

Water Quality Integrity ratings for the subwatersheds vary from high (functioning appropriately) to moderate (functioning at risk) to low (not functioning appropriately). Localized impacts from roads, mining, and recreation are primarily related to sedimentation for sections of the South Fork Salmon River and East Fork South Fork.

Fifteen of the 35 subwatersheds in this area were listed as having impaired water bodies under Section 303(d) of the Clean Water Act. The pollutants of concern are sediment and metals. There is a TMDL associated with the subbasin addressing these segments.

MA 13. Big Creek/Stibnite

Elevations range from 5,250 feet on the East Fork South Fork River to 9,233 feet atop Greeley Mountain. The area is predominantly underlain by granites of the Idaho batholith and associated metamorphic roof pendants, mostly quartzite, marble, and calc-silicates. Soils generally have moderate to high surface erosion potential.

The MA comprises portions of four watersheds that extend across three subbasins. Part of the MA is in the Upper East Fork South Fork watershed of the South Fork Salmon River subbasin. However, the area also includes a long cherry stem into the Upper Monumental Creek watershed of the Lower Middle Fork Salmon subbasin, with a small portion in the Upper Marble Creek watershed of the Upper Middle Fork Salmon subbasin. The Big Creek area comprises a portion of the Upper Big Creek watershed in the Lower Middle Fork Salmon subbasin. The major streams in the area are the East Fork South Fork Salmon River, Big Creek, Profile Creek, and Monumental Creek. No Mans-Boulder subwatershed is considered part of the state-regulated public water system for the community of Yellow Pine.

Forest Plan Direction

The following Soil and Water Resource Management Direction (Forest Plan 2003) has been developed specifically for this area and is pertinent to this analysis:

- Restore or maintain riparian area composition, structure, and function in localized areas of the Upper East Fork South Fork Salmon River drainage by improving riparian vegetation and hydrologic function through decommissioning or obliterating roads within riparian areas and returning road surfaces, cuts, and fills to productivity (p. III-264: Objective 1315).
- Reduce impacts to riparian areas from recreation sites or uses. Identify recreational campsites, parking areas, or trails that are contributing unacceptable levels of accelerated sediment, compaction, or vegetation loss. Rehabilitate, relocate, or harden sites where needed to reduce impacts (p. III-264: Objective 1317).

Current Travel Access Effects on Water Quality and Soil Productivity

The following table provides the current number for each Soil and Water Indicator.

Table SW-14. Existing Condition of Soil and Water Indicators for MA 13.

MA 13: Soil and Water Indicators	Existing Condition
1. Percent (and acres) of the MA designated open to cross-country motor vehicle use and/or limited motorized access.	6% (5,470 acres)
2. Percent (and acres) of RCAs in designated areas open to cross-country motor vehicle use and/or limited motorized access.	17% (2,800 acres)
3. Miles of designated roads.	35.1
4. Miles of designated two-wheel motorized trails.	6.0
5. Miles of designated ATV and OHV trails.	4.9
6. Miles of designated roads and motorized trails in subwatersheds with a high watershed vulnerability rating.	8.5
7. Miles of designated roads and motorized trails within RCAs.	23.0
8. Number of inventoried stream crossings on designated roads and motorized trails.	41

The entire MA is closed to motorized cross-country vehicle use with the exception of 5,550 acres open to limited motorized access (300 feet on each side of designated roads and 100 feet on each side of motorized trails). Approximately 17 percent (2,840 acres) of the RCAs are open to limited motorized access. Approximately 18 percent of the motorized trails are within subwatersheds with high vulnerability and 50 percent of the roads and trails are located within RCAs.

Subwatershed Vulnerability ratings range from low to high, with the majority being moderate (Table SW-1). Because the majority of this MA is located on fluvial granitics of the Idaho Batholith, impacts on erosion and sediment delivery from roads, trails, and off-road use is moderate to high.

Geomorphic Integrity ratings for the subwatersheds vary from high to low. The Upper East Fork South Fork Watershed has impacts from past mining operations and roads, including accelerated sediment, chemical contamination, and channel modification. Big Creek and Upper Monumental Creek watersheds also have impacts from past mining operations and roads. Impacts are accelerated sediment and channel modification.

Water Quality Integrity ratings for the subwatersheds vary from high (functioning appropriately) to moderate (functioning at risk) to low (not functioning appropriately) (Table SW-1). Watersheds also have localized impacts from past mining operations and roads. Impacts are accelerated sediment and channel modification.

Five of the 14 subwatersheds in the area (Upper Monumental Creek, No Mans-Boulder, Sugar Creek, and Upper East Fork South Fork Salmon River) were listed as having impaired water bodies under Section 303(d) of the CWA. The pollutants of concern are sediment and metals. There are no TMDL-assigned subbasins associated with this MA.

3.4.5 Environmental Consequences

Introduction

The type, extent, and location of designated areas open to cross-country motor vehicle use and/or limited motorized access and designated roads and motorized trails have an effect on soil productivity and water quality. Soil productivity is generally assessed by Total Soil Resource Commitment (TSRC) and soil detrimental disturbance (DD). (Forest Plan 2003: p. III-21). Water

quality is affected by accelerated erosion and sediment delivered to streams. The following is a general discussion of the eight Soil and Water Indicators (SWIs) and how they are used to evaluate the differences between alternatives on the soil and water resources.

Direct and Indirect Effects Common to All Management Areas

The following is a discussion of the eight Soil and Water indicators (SWIs) common to all Management Areas. The discussion centers on how they are used to evaluate the differences between alternatives on the soil and water resources.

SWI 1: Percent (and acres) of the Management Area designated open to cross-country motor vehicle use and/or limited motorized access

In all action alternatives across all MA's, limited access for parking and dispersed camping would be allowed within 300 feet of a designated road and within 100 feet of a designated motorized trail. The exception is in the Lake Creek area of Management Area 11, areas with northern Idaho ground squirrel colonies, and on the Krassel Ranger District in Management Area 12 and 13, where travel off of designated routes would not be allowed for any purpose. In these areas, off road travel would be limited to designated parking areas along short road sections.

Detrimental Disturbance (DD) should be reduced with implementation of Alternatives B, C, D, and E due to the reduction of areas open to motorized cross-country vehicle use. DD would continue to occur along designated roads and motorized trails due to permitted limited access for parking and dispersed camping in those areas. With proper education and enforcement, unauthorized DD should be limited in areas closed to motorized cross-country vehicle use.

TSRC would remain the same in all alternatives because this project does not propose to remove any roads and trails from the landscape. In all alternatives, TSRC may increase along designated roads and motorized trials due to permitted limited motorized access along those areas.

Water quality is expected to improve with the reduction of areas open to cross-country motor vehicle use and/or limited motorized access. There would be a slight improvement due to the elimination of motorized use on and adjacent to the open unauthorized roads. However, accelerated erosion and sediment delivery would continue from these unauthorized roads until such time as restoration plans are made and implemented. Adverse effects to water quality are expected to continue on areas open to limited motorized access along the designated roads and motorized trails.

This indicator is best used to evaluate the differences between the No Action and the action alternatives from the effects of reducing the area open to cross-country motor vehicle use and/or limited motorized access.

General Effects Common to All Management Areas (MAs)

Non-motorized Trails, Unauthorized Roads, Closed NFS Roads, and Unauthorized Motorized Vehicle Use

The following general effects discussions are common to non-motorized trails, unauthorized roads, closed NFS roads, and unauthorized motor vehicle use in all MAs.

Non-motorized trails: Maintenance is conducted on approximately 15 percent of the Forest trails annually. However, erosion continues on all trails. Sediment delivery is greatest where the trails are located in subwatersheds with high watershed vulnerability, within RCAs, and intersect stream crossings.

Unauthorized roads: Unauthorized roads may or may not be open or drivable. Access may be physically blocked by down or live trees. These roads receive no maintenance, so most have drainage and erosion problems. Drainage structures such as ditches, cross-drains, waterbars, or dips may have never been constructed or are no longer functioning. Failures at stream crossings are common, resulting in erosion and sediment delivery.

Closed NFS (Level 1 maintenance) roads: These roads are designated NFS roads that have been closed to use, but that may actually be operationally open. In recent years, some of these roads have been physically closed, waterbars have been installed, and roadbeds and cut and fill slopes have been scarified and seeded. Stream crossings have been stabilized by removing non-functioning and old log culverts, removal of fill within the channel, and restoration and stabilization of stream banks. However, the majority of these roads still need to be physically closed and stabilized to keep them from contributing sediment to adjacent streams.

Unauthorized motor vehicle use: Unauthorized motorized use would continue to be a problem that adversely affects soil productivity and water quality. The major problems occur on unauthorized roads, Level 1 roads posted but not physically closed, and in meadows and open slopes adjacent to roads and motorized trails.

Direct and Indirect Effects by Management Area

Effects of Summer Motorized Travel on Soil Productivity and Water Quality

The tables displayed for each MA provide a numerical depiction of how the Soil and Water Indicators (SWIs) change in each action alternative compared with the No Action Alternative (Alternative A). Effects were determined to be an improvement, no change, or degradation. The extent of the effects is relative to each other. A negative change indicates an improvement to water quality or soil productivity, a positive number indicates degradation, and zero indicates no change. The larger the negative number – the greater relative improvement to the soil and water resources. The larger the positive number – the greater relative degradation to the soil and water resources.

MA 1. Hells Canyon

Table SW-15 below provides a numerical display of the SWIs. A narrative description of each indicator describes the environmental effects on the soil and water resources.

SWI 1: Percent (and acres) of MA open to cross-country motor vehicle use and open to limited motorized access for parking

Because the majority of the 35,063 acre Hells Canyon Management Area (MA) is currently closed to cross-country motor vehicle use (with the exception of 2,040 acres open to limited motorized access) there would be little to no change on the soil and water resources from the action alternatives. Alternative C would increase limited cross-country motorized access for parking within the MA by about +50 acres (less than 1 percent) due to the increase of 2 miles of ATV trail.

SWI 2: Percent (and acres) of RCAs open to cross-country motor vehicle use and limited motorized access for parking

There is a total of 5,340 acres of RCAs within the Hells Canyon MA. In all alternatives, 18 percent (950 acres) of the RCAs will remain open to limited motorized access for parking. There would be no change in this indicator, signifying no change between alternatives, in the potential to protect the soil and water resources over the No Action Alternative.

Table SW-15. Effects on the Soil and Water Indicators for MA 1

MA 1: Soil and Water Indicators	Existing Condition	Change by Alternative				
		A	B	C	D	E
1. Percent (and acres) of MA designated open to cross-country motor vehicle use and/or limited motorized access.	6% 2,040 acres	0% 0 acres	0% 0 acres	0% +50 acres	0% 0 acres	0% 0 acres
2. Percent (and acres) of RCAs in areas open to cross-country motor vehicle use and/or limited motorized access.	18% 950 acres	0% 0 acres	0% 0 acres	0% 0 acres	0% 0 acres	0% 0 acres
3. Miles of designated roads.	1.7	0	0	0	0	0
4. Miles of designated two-wheel motorized trails.	2.9	0.0	0.0	0.0	0.0	0
5. Miles of designated ATV and OHV trails.	0.0	0.0	0.0	+2.0	0.0	0
6. Miles of designated roads and motorized trails in subwatersheds with high vulnerability rating.	4.6	0.0	0.0	+1.9	0.0	0.0
7. Miles of designated roads and motorized trails within RCAs.	0.1	0.0	0.0	0.0	0.0	0.0
8. Number of inventoried stream crossings on designated roads and motorized trails.	31	0	0	0	0	0

SWI 3 & 4: Miles of designated roads & Miles of designated two-wheel motorized trails

There would be no change in DD and water quality along the designated roads. In all alternatives, there would be no change in TSRC since there would be no change in the amount of roads and two-wheel motorized trails.

SWI 5: Miles of designated ATV and OHV trails

In Alternative B, D, and E, there would be no change in DD and water quality. In Alternative C, this indicator shows a potential degrade in DD and water quality due to the increase in 2.0 miles of ATV trails. In all alternatives, TSRC would not change because no road and trails would be removed or added to the landscape.

SWI 6: Miles of designated roads and motorized trails in subwatersheds with a high watershed vulnerability rating

In Alternative C, opening 1.9 miles of a closed NFS road to ATV use in subwatersheds with a high watershed vulnerability rating indicates a potential degrade in water quality.

SWI 7 & 8: Miles of designated roads and motorized trails within RCAs & Number of inventoried stream crossings on designated roads and motorized trails

In all alternatives, there would be no change in the amount of motorized roads and trails within RCAs and no change in the number of inventoried stream crossings. In all alternatives, these indicators signify there would be no changes to water quality associated with roads or trails within RCA's or crossing streams.

Cumulative Effects for MA 1

MA 1 is comprised mostly of steep canyonland breaks of the Snake River. The primary management prescription for this MA is "4.1a-Undeveloped Recreation: Maintain Inventoried Roadless Areas." Based on the steep inaccessible terrain, dominant NFS land ownership within the MA, and limited extent of other activities identified below. Based on this, proposed changes in travel management associated with this project are not expected to contribute to cumulative effects to the soil or water resource.

Non-motorized Trails, Unauthorized Roads, Closed NFS Roads, and Unauthorized Motorized Vehicle Use

Effects to soil and water resources would continue from non-motorized trails, unauthorized roads, closed NFS roads, and unauthorized use. About 36 miles of non-motorized trail are located in subwatersheds with high watershed vulnerability. The MA contains 15.7 miles of closed NFS roads. Unauthorized motorized use would continue to be a problem that adversely affects soil productivity and water quality. Problems are expected to occur adjacent to designated roads and motorized trails, especially on the open rangelands and ridge tops.

Other Forest Service Ongoing and Reasonably Foreseeable Actions

Reasonably foreseeable actions that contribute to cumulative effects on the soil and water resources include livestock grazing, fire suppression, firewood cutting, and dispersed recreation. No new projects are proposed for this MA (Appendix D).

Cumulative Effects Conclusion for MA 1

There is no difference between Alternatives A (Existing Condition) and Alternatives B, D, and E within MA 1. Hells Canyon MA is currently closed to all cross country motorized vehicle use. The Existing Condition and all action alternatives allow for travel up to 300 feet for parking and dispersed camping. Alternative C opens a closed system road and designates that road open to ATV use. This designation would only occur once Project Design Features (PDFs) are applied. PDFs are expected to minimize impacts to the soil and water resources, and thus minimize the potential cumulative effects. While no foreseeable projects have been identified, opportunities for soil and water improvements include decommissioning of unauthorized roads and closed NFS roads. Based on the steep inaccessible terrain, dominant NFS land ownership within the MA, and limited extent of other activities identified above, the cumulative effects for all alternatives are likely to be maintained at the existing condition. There are very little differences between any of the alternatives.

Forest Plan Consistency

Alternatives B, C, D, and E would be in compliance with Guideline 0111 to "avoid [new] ground-disturbing management activities on potentially unstable areas…" In Alternative C, the proposed ATV route on an existing closed NFS road could not be used until after Project Design Features (PDFs) are applied. PDFs are designed to minimize the additional adverse effects on the soil and water resources.

No activities are proposed in MA 1 to move toward Desired Conditions for soil and water resources. The existing closure to cross-country motor vehicle use (with the exception of limited motorized access for parking) provides maintenance and protection to the soil and water resources.

Alternative C, Proposal 1-1, would not be consistent with the Forest Plan for protection of the soil and water resources. This proposal opens a closed system road in a closed area and designates that road open to ATV use. The problem is that there are no activities proposed in MA 1 to move toward Desired Conditions for soil and water resources. Proposal 1-1, would require a one-time, site-specific, non-significant amendment for Forest Plan Standard SWST04: "Management actions will neither degrade nor retard attainment of properly functioning soil, water, riparian, and aquatic desired conditions, except: a) Where outweighed by demonstrable short- or long-term benefits to watershed resource conditions" (Forest Plan: p. III-22)

MA 2. Snake River

Table SW-16 provides a numerical display of the SWIs. A narrative description of each indicator describes the environmental effects on the soil and water resources.

Table SW-16. Effects to the Soil and Water Indicators for MA 2

MA 2: Soil and Water Indicators	Existing Condition	Change by Alternative				
		A	B	C	D	E
1. Percent (and acres) of MA designated open to cross-country motor vehicle use and/or limited motorized access.	52% 77,790 acres	0% 0 acres	-36% -54,210 acres	-35% -53,630 acres	-36% -54,210 acres	-35% -53,810 acres
2. Percent (and acres) of RCAs in areas open to cross-country motor vehicle use and/or limited motorized access.	42% 11,330 acres	0% 0 ac.	-22% -6,023 acres	-22% -5,910 acres	-22% -6,020 acres	-22% -5,960 acres
3. Miles of designated roads.	270.8	0	+2.9	+2.9	0.0	+2.9
4. Miles of designated two-wheel motorized trails.	77.7	0.0	-20.8	-1.0	-20.8	-12.2
5. Miles of designated ATV and OHV trails.	2.1	0.0	+0.3	+4.9	0.0	+0.9
6. Miles of designated roads and motorized trails in subwatersheds with high vulnerability rating.	41.7	0.0	-5.2	+0.8	-5.2	-4.5
7. Miles of designated roads and motorized trails within RCAs.	73.5	0.0	-1.5	+4.2	-1.9	+1.1
8. Number of inventoried stream crossings on designated roads and motorized trails.	288	0	-11	+15	-16	-8

SWI 1: Percent (and acres) of MA open to cross-country motor vehicle use and/or limited motorized access for parking

There is a total of 151,590 acres within the Snake River MA. In Alternative A, approximately 52 percent (77,790 acres) of the MA is open to cross-country motor vehicle use and open to limited motorized access for parking. In all action alternatives, a reduction of -35 to -36 percent (-53,630 to -54,210 acres) of the MA open to cross-country motor vehicle use indicates a major improvement in the potential to protect the soil and water resources over the No Action Alternative.

SWI 2: Percent (and acres) of RCAs open to cross-country motor vehicle use and limited motorized access for parking

There is a total of 27,070 acres of RCAs within the MA. In Alternative A, approximately 42 percent (11,330 acres) of the RCAs are open to cross-country motor vehicle use and open to limited motorized access for parking. In all action alternatives, there is a reduction of approximately -22 percent (-5,910 to -6,023 acres) that are open to motorized cross-country vehicle use. This indicates a major improvement in potential protection of soil and water resources compared to the No Action Alternative.

SWI 3: Miles of designated NFS roads

Alternatives B, C, and E would increase open designated roads by 2.9 miles which would indicate a degrade to DD and water quality. In Alternatives D, there would be no change in the number of miles of designated roads, hence there would be no change in TSRC, DD, or water quality associated with designated NFS roads.

SWI 4: Miles of designated two-wheel motorized trail

While Alternatives B and D would close more than 20 miles, Alternative C would close 1 mile, and Alternative E would close more than 12 miles of two-wheel motorized trail. In all action alternatives, there would be a potential improvement in DD and water quality from the closures.

SWI 5: Miles of designated ATV and OHV trails

Alternatives B, C, and E would increase ATV trails by 0.3 miles, 4.9 miles, and 0.9 miles, respectively, and water quality would potentially degrade due to the increase of ATV trails. Alternative D would result in no change in the miles of ATV trail, and thus, no change in DD or water quality.

SWI 6: Miles of designated roads and motorized trails in subwatersheds with a high watershed vulnerability rating

In Alternatives B and D there would be a reduction of 5.2 miles of motorized roads and trails within subwatersheds with a high watershed vulnerability rating. In Alternative E there would be a reduction of 4.5 miles. In Alternative C there would be a minor increase of 0.8 miles. In Alternatives B, D, and E, water quality would improve, while in Alternative C, water quality would degrade.

SWI 7: Miles of motorized NFS roads and trails within RCAs

Decreases of 1.5 and 1.9 miles in Alternatives B and D respectively would improve water quality. Increases of 4.2 and 1.1 miles in Alternative C and E would degrade water quality.

SWI 8: Number of inventoried stream crossings on designated roads and motorized trails

In Alternative B, D, and E the reduction of stream crossings would improve water quality. In Alternative C, the additional stream crossings would degrade water quality.

Cumulative Effects for MA 2

Management prescriptions within MA 2 range widely from Undeveloped Recreation; Active Restoration and Maintenance of Aquatic, Terrestrial, and Hydrologic Resources; to Commodity Production. The MA contains several private land holdings including the OX Ranch, and the communities of Bear and Cuprum. Based on recreation use growth trends and other uses identified below adverse effects on the soil and water resources are likely to increase.

Non-motorized Trails, Unauthorized Roads, Closed NFS Roads, and Unauthorized Motorized Vehicle Use

Effects to soil and water resources would continue from non-motorized trails, unauthorized roads, closed NFS roads, and unauthorized use. The MA contains 58.4 miles of non-motorized trail located in subwatersheds with low, moderate, and high watershed vulnerability. About 165 miles of closed NFS roads and 264 miles of inventoried unauthorized roads occur within the MA.

Other Forest Service Ongoing and Reasonably Foreseeable Actions

Reasonably foreseeable actions that may contribute to cumulative effects on the soil and water resources include livestock grazing, fire suppression, firewood gathering, and dispersed recreation. Beside these activities there are two proposed projects in the MA: the Bear Tornado and Crooked River Vegetation Management Projects and Lick Creek Vegetation Management (see Appendix D). While these projects have the potential to increase adverse impacts to soil productivity and water quality through timber harvesting and road construction and reconstruction, Forest Plan direction is to minimize and avoid such effects.

Cumulative Effects Conclusion for MA 2

Currently 48 percent of the Snake River MA is closed to all cross country motorized vehicle use. All action alternatives reduce the area open to cross country motorized use by an additional 36 percent. This additional closure provides a consistent message to the public and through time and enforcement, new user defined roads and trails should be minimized. Approximately 14 percent (24,000 acres) of the area will remain open for limited access to cross-country motorized vehicles. This limited access is along open roads and trails where the majority of cross-country motorized travel currently occurs. Existing problems on open roads, closed roads, and unauthorized roads will still occur, in all alternatives. None of the alternatives authorizes watershed restoration activities. Existing unauthorized roads will not be physically blocked or rehabilitated and will remain on the landscape, contributing to soil and water resource degradation. In all alternatives, watershed improvement opportunities exist when future and current NEPA projects are implemented. For example, in all alternatives, the Bear Tornado and Crooked River Vegetation Management Project and the Lick Creek Vegetation Management provide opportunities to improve watershed conditions through closure and decommissioning of selected unauthorized roads and closed NFS roads in accordance with Forest Plan direction (Forest Plan 2003: p. III-60: FRGU04).

Slight changes occur between action alternatives, based on the open or closed motorized status of roads and trails as disclosed by the Soil and Water Indicators (SWIs) in the Environmental Consequences Section. Alternatives B, C, and E converts several closed roads and unauthorized roads to an open road status or ATV use. For example, in Alternatives C and E, Proposal 2-11 takes a closed road in an open area and also converts it to an open ATV trail. In Alternatives C, Proposals 2-12 and 2-13 take a closed road in a closed area and also converts it to an open ATV trail. There are little differences between Alternatives B, D, and E, except E converts less two wheel motorized trail to non-motorized trail. Alternative C shows the least improvement with the least reduction of two wheel motorized trail and more ATV trails on closed roads in both open and closed areas.

Based on recreation use growth trends and other foreseeable uses within the Snake River MA, adverse effects of the soil and water resources are likely to increase in all alternatives. The closure of an additional 36 percent to cross-country motorized travel in all action alternatives should help incrementally reduce cumulative impacts from cross country motorized travel.

Forest Plan Consistency

MA Objectives 0230 and 0231 address improving water quality by implementing watershed restoration activities. While outside the scope of this project, future opportunities exist to meet these objectives. Within the MA, all action alternatives would move toward the Desired Conditions for the soil and water resources by reducing the area open to cross-country motorized vehicle use.

MA 3. Weiser River

Table SW-17 below provides a numerical display of the SWIs. A narrative description of each indicator describes the environmental effects on the soil and water resources.

SWI 1: Percent (and acres) of MA open to cross-country motor vehicle use and open to limited motorized access for parking

There is a total of 299,990 acres within the Weiser River MA. In Alternative A, approximately 80 percent (240,600 acres) of the MA is open to cross-country motor vehicle use and open to limited motorized access for parking and dispersed camping. In all action alternatives, a reduction of -59

to -60 percent (-178,370 to -180,600 acres) of the MA open to cross-country motor vehicle indicates an improvement to protect the soil and water resources compared with the No Action Alternative.

SWI 2: Percent (and acres) of RCAs open to cross-country motor vehicle use and limited motorized access for parking

There is a total of 57,660 acres of RCAs within the Weiser River MA. In Alternative A, approximately 75 percent (43,160 acres) of the RCAs are open to cross-country motor vehicle use and open to limited motorized access for parking and dispersed camping. In all action alternatives, there is a reduction of -41 to -42 percent (-23,480 to -24,387 acres) of RCA acres open to motorized cross-country vehicle use. This reduction of RCA acres open to cross-country motor vehicle use indicates an improvement to protect the soil and water resources compared with the No Action Alternative.

Table SW-17. Effects to the Soil and Water Indicators for MA 3

MA 3: Soil and Water Indicators (SWI)	Existing Condition	Change by Alternative				
		A	B	C	D	E
1. Percent (and acres) of MA designated open to cross-country motor vehicle use and/or limited motorized access.	80% 240,600 acres	0% 0 acres	-60% -180,600 acres	-59% -178,370 acres	-60% -179,440 acres	-60% -179,230 acres
2. Percent (and acres) of RCAs in areas open to cross-country motor vehicle use and/or limited motorized access.	75% 43,160 acres	0% 0 acres	-42% -24,387 acres	-41% -23,480 acres	-41% -23,810 acres	-42% -24,070 acres
3. Miles of designated roads.	815.0	0.0	-20.7	+1.0	-18.3	-7.1
4. Miles of designated two-wheel motorized trails.	70.9	0.0	-16.0	-10.5	-22.6	-9.6
5. Miles of designated ATV and OHV trails.	21.1	0.0	+7.4	+30.9	0.0	+21.1
6. Miles of designated roads and motorized trails in subs w/high watershed vulnerability rating.	11.6	0.0	0.0	0.0	0.0	0.0
7. Miles of designated roads and motorized trails within RCAs.	305.9	0.0	-16.8	+3.5	-19.6	-8.5
8. Number of inventoried stream crossings on designated roads and motorized trails.	762	0	-29	-1	-40	-8

SWI 3: Miles of designated roads

Alternatives B, D, and E would reduce designated roads by 20.7, 18.3, and 7.1 miles respectively, while Alternative C would increase these roads by 1.0 mile. In Alternative B, D, and E, DD and water quality would improve due to the reduction in designated roads. In Alternative C, DD and water quality would degrade due to the increase in designated roads.

SWI 4: Miles of designated two-wheel motorized trail

Alternatives B, C, D, and E would reduce these trails by 16.0 miles, 10.5 miles, 22.6 miles, and 9.6 miles, respectively. In all action alternatives, DD and water quality would be improved due to the reduction in miles of two-wheel motorized trail.

SWI 5: Miles of designated ATV and OHV trails

Alternatives B, C, and E would increase ATV trails by 7.4, 30.9 miles, and 21.1 miles, respectively, and water quality would likely degrade from the increase in ATV trails. There would be no change in ATV or OHV trails in Alternative D, therefore no change in DD or water quality is expected.

SWI 6: Miles of designated roads and motorized trails in subwatersheds with a high watershed vulnerability rating

In this MA, only one of 51 subwatersheds is rated a having high watershed vulnerability and there are no differences in miles of designated roads or motorized trails among the action alternatives. Based on this, all action alternatives would result in no change in water quality.

SWI 7: Miles of motorized NFS roads and trails within RCAs

In Alternatives B, D, and E, water quality would improve due to the reduction of 16.8 miles, 19.6 miles, and 8.5 miles of motorized roads and trails within RCAs, respectively. In Alternative C the increase of 3.5 miles within RCAs would degrade water quality.

SWI 8: Number of inventoried stream crossings on designated roads and motorized trails

In Alternatives B, C, D, and E, water quality would improve due to the reduction of stream crossing by 29, 1, 40, and 8, respectively.

Cumulative Effects for MA 3

The dominant management prescription for this MA is Commodity Production. The MA contains numerous state and private in-holdings including a 28,000 acres block of state land northwest of Council and approximately 20,000 of private timberland south and east of Council Mountain. The MA forms a large semi-circle around the agricultural communities of Council, Cambridge, and Indian Valley. Primary uses have been timber management, livestock grazing, irrigation, and dispersed recreation. Based on the large extent of private lands, recreation use growth trends and other uses identified below – adverse effects on the soil and water resources are likely to increase.

Non-motorized Trails, Unauthorized Roads, Closed NFS Roads, and Unauthorized Motorized Vehicle Use

Effects to soil and water resources would continue from non-motorized trails, unauthorized roads, closed NFS roads, and unauthorized use. The MA contains 78.5 miles of non-motorized trail located in subwatersheds with mostly low and moderate watershed vulnerability. About 354 miles of closed NFS roads and 426 miles of inventoried unauthorized roads occur within the MA.

Other Forest Service Ongoing and Reasonably Foreseeable Actions

Reasonably foreseeable actions that may contribute to cumulative effects on the soil and water resources include livestock grazing on public and private lands, fire suppression, firewood gathering, and dispersed recreation. Four projects are proposed in the MA: Brownlee/Seid Creek Improvement Thin, Lick Creek Vegetation Management Project, Upper Weiser Fire Regime/ Condition Class Project, Summit Gulch Vegetation Management Project, (Appendix D). While these projects have the potential to increase adverse impacts to soil productivity and water quality through timber harvesting, vegetation removal, ground disturbance, and road construction and reconstruction, Forest Plan direction is to minimize and avoid such effects.

Cumulative Effects Conclusion for MA 3

Currently only 22 percent of the Weiser River MA is closed to all cross country motorized vehicle use. All action alternatives reduce the area open to cross-country motorized use by an additional

60 percent. This additional closure provides a consistent message to the public and through time and enforcement, new user defined roads and trails should be minimized. Approximately 18 percent (60,000 acres) of the area will remain open for limited access to cross-country motorized vehicles. Approximately 19,000 acres will remain open to limited access within RCAs. This limited access is along open roads and trails where the majority of cross-country motorized travel currently occurs. In all alternatives, existing problems on open roads, closed roads, and unauthorized roads will still occur. None of the alternatives authorizes watershed restoration activities. Existing unauthorized roads will not be physically blocked or rehabilitated and will remain on the landscape, contributing to soil and water resource degradation. In all alternatives, watershed improvement opportunities exist when future and current NEPA projects are implemented. For example, in all alternatives, vegetation management projects provide opportunities to improve watershed conditions through closure and decommissioning of selected unauthorized roads and closed NFS roads in accordance with Forest Plan direction (Forest Plan 2003: p. III-60: FRGU04).

In general, Alternatives B, C, and E convert several closed roads and unauthorized roads to an open road status or ATV use. As disclosed, the majority of these conversions from closed or unauthorized roads to open roads or ATV trails occur in Alternatives C and E. Alternative D does not add any new roads or ATV trails over the existing condition and converts several two-wheel motorized trails to non-motorized. Most of the new road and ATV designations occur in areas that are currently designated open to cross country travel. These new ATV designations will only occur once Project Design Features (PDFs) are applied. PDFs are expected to minimize impacts to the soil and water resources, and thus minimize the potential cumulative effects.

Based on recreation use growth trends and other foreseeable uses within the Weiser River MA, adverse effects of the soil and water resources are likely to increase in all alternatives. The closure of an additional 60 percent to cross country motorized travel in all action alternatives should help reduce impacts of creating new routes from cross country motorized travel. However, an estimated 354 miles of designated closed roads and 426 miles of unauthorized road remain within this MA, and it is expected unauthorized use may continue on many of these roads. The differences between the action alternatives are based on the open or closed motorized status of roads and trails as disclosed by the Soil and Water Indicators (SWIs) in the Environmental Consequences Section. Alternative D shows the greatest improvement to the soil and water resources, with B being similar to D. Alternatives C, shows the least improvement with E being similar to C.

Forest Plan Consistency

MA Objectives 0318, 0319, and 0322 address improving water quality by implementing watershed restoration activities. While outside the scope of this project, future opportunities exist to meet these objectives. Within the MA , all action alternatives would move toward the Desired Conditions for the soil and water resources by reducing the area open to cross-country motorized vehicle use.

MA 4. Rapid River

Table SW-18 below provides a numerical display of the SWIs. A narrative description of each indicator describes the environmental effects on the soil and water resources.

SWI 1: Percent of the MA designated open to cross-country motor vehicle use and/or limited motorized access

There is a total of 62,140 acres of RCAs within the Rapid River MA. In Alternative A, approximately 20 percent (12,570 acres) of the MA is open to cross-country motor vehicle use and open to limited motorized access for parking and dispersed camping. In all action alternatives, a reduction of -15 to -16 percent (-9,460 to -9,770 acres) of the MA open to cross-country motor vehicle indicates an improvement to protect the soil and water resources compared with the No Action Alternative.

SW 2: Percent (and acres) of RCAs in designated areas open to cross-country motor vehicle use and/or limited motorized access

There is a total of 12,330 acres of RCAs within the Rapid River MA. In Alternative A, approximately 23 percent (2,790 acres) of the RCAs are open to cross-country motor vehicle use and open to limited motorized access for parking and dispersed camping. In all action alternatives, there is a reduction of -17 percent (-2,120 to -2,150 acres) of RCA acres open to motorized cross-country vehicle use. In all action alternatives, the reduction of the RCAs open to cross-country motor vehicle use indicates an improvement to protect the soil and water resources compared with the No Action Alternative.

Table SW-18. Effects to the Soil and Water Indicators for MA 4

MA 4: Soil and Water Indicators	Existing Condition	Change by Alternative				
		A	B	C	D	E
1. Percent (and acres) of MA designated open to cross-country motor vehicle use and/or limited motorized access.	20% 12,570 acres	0% 0 acres	-16% -9,760 acres	-15% -9,460 acres	-16% -9,770 acres	-15% -9,510 acres
2. Percent (and acres) RCAs in areas open to cross-country motor vehicle use and/or limited motorized access.	23% 2,790 acres	0% 0 acres	-17% -2,150 acres	-17% -2,120 acres	-17% -2,150 acres	-17% -2,120 acres
3. Miles of designated roads.	26.1	0	0.0	0.0	0.0	0.0
4. Miles of designated two-wheel motorized trails.	46.6	0.0	-9.0	0.0	-9.4	+1.8
5. Miles of designated ATV and OHV trails.	3.5	0.0	-3.5	0.0	-3.5	-3.5
5. Miles of designated roads and motorized trails in subs w/ high watershed vulnerability rating.	1.6	0.0	-0.2	0.0	-0.2	0.0
7. Miles of designated roads and motorized trails within RCAs.	15.0	0.0	-1.4	0.0	-1.4	0.0
8. Number of inventoried stream crossings on designated roads and motorized trails.	73	0	-5	0	-5	0

SWI 3: Miles of designated roads

In all alternatives, this indicator signifies there would be no change in TSRC, DD, or water quality because there would be no changes in designated roads.

SWI 4: Miles of designated two-wheel motorized trail

Alternatives B and D would reduce two-wheel motorized trails by 9.0 miles and 9.4 miles, respectively; thereby improving DD and water quality. Alternative C would cause no change. Alternative E would increase miles of two-wheel motorized trail by 1.8 and therefore would increase DD and degrade water quality.

SWI 5: Miles of designated ATV and OHV trails

Alternatives B, D, and E would improve DD and water quality due to reductions in ATV trails. Alternatives C does not change ATV/OHV trail miles and therefore would not change DD and water quality.

SWI 6: Miles of designated roads and motorized trails in subwatersheds with a high watershed vulnerability rating

In Alternatives B and D, the reduction of 0.2 miles of designated roads and motorized trails within subwatersheds with high watershed vulnerability would improve water quality. There would be no change in Alternatives C and E given no changes occur within high vulnerability watersheds.

SWI 7: Miles of designated roads and motorized trails within RCAs

In Alternative B and D, water quality would improve from closure of 1.4 miles of motorized trails within RCAs. In Alternatives C and E, no change to water quality would occur with this indicator.

SWI 8: Number of inventoried stream crossings on designated roads and motorized trails

In Alternative B and D, a decrease of 5 stream crossings would improve water quality. In Alternatives C and E, this indicator signifies no change to water quality.

Cumulative Effects for MA 4

The dominant management prescription for MA 4 is Passive Restoration and Maintenance of the Aquatic, Terrestrial, and Hydrologic resources. Private in-holdings total less than one percent of the MA. Based on the steep inaccessible terrain, dominant NFS land ownership within the Rapid River MA, and limited other activities identified below, the effects from all activities are likely to be maintained at existing conditions.

Non-motorized Trails, Unauthorized Roads, Closed NFS Roads, and Unauthorized Motorized Vehicle Use

Effects from non-motorized trails, unauthorized roads, closed NFS roads, and unauthorized use would continue. The MA contains 57.9 miles of non-motorized trail located in subwatersheds with low, moderate, and high watershed vulnerability. There are 19.6 miles of closed NFS roads and 4.2 miles of inventoried unauthorized roads within the MA. Unauthorized motorized use would continue to be a problem that adversely affects soil productivity and water quality. The major problems occur on closed and unauthorized roads and within meadows adjacent to designated roads and motorized trails. If and when closed and unauthorized roads are physically closed and obliterated improvements to soil productivity and water quality would occur.

Other Forest Service Ongoing and Reasonable Foreseeable Actions

Reasonable foreseeable actions that may contribute to cumulative effects on the soil and water resources include livestock grazing, fire suppression, firewood cutting, and dispersed recreation. No projects are proposed in the MA (see Appendix D).

Cumulative Effects Conclusion for MA 4

Currently, most (80 percent) of the Rapid River MA is closed to all cross country motorized vehicle use. All action alternatives reduce the area open to cross-country motorized use by an additional 15 to 16 percent. This additional closure provides a consistent message to the public and through time and enforcement, new user defined roads and trails should be minimized within this MA and across the Forest. Approximately 5 percent (3,000 acres) of the area will remain open for limited access to cross country motorized vehicles. Approximately 700 acres will remain open to limited access within RCAs. This limited access is along open roads and trails where the majority of cross-country motorized travel currently occurs. In all alternatives, existing problems on open roads, closed roads, and unauthorized roads will still occur. None of the alternatives authorizes watershed restoration activities. Existing closed roads and unauthorized roads will not be physically blocked or rehabilitated and will remain on the landscape, contributing to soil and water resource degradation. In all alternatives, watershed improvement opportunities exist when future and current NEPA projects are implemented. At this time, there are no plans to implement watershed improvement projects within this MA.

The primary difference between the action alternatives is that Alternatives B and D converts several two-wheel motorized trails and one ATV trail to non-motorized thus providing extra protection to the soil and water resources, while Alternative C and E maintains the existing condition. Based on the steep inaccessible terrain, dominant NFS land ownership within the Rapid River MA, and limited other activities identified above The effects from all alternatives and activities are likely to be maintained at or near existing conditions. Given improvements or no change to most SWIs, and relatively small increases in motorized use (1.8 miles of two-wheel trail in Alternative E) changes in travel management designations associated with action alternatives are not expected to contribute to measurable changes in cumulative effects on the soil and water resource.

Forest Plan Consistency

MA Objectives 0429, 0433, and 0436 address improving water quality by implementing watershed restoration activities. While outside the scope of this project, future opportunities exist to meet these objectives. Within the MA, all action alternatives would move toward the Desired Conditions for the soil and water resources by reducing the area open to cross-country motorized vehicle use by 15 to 16 percent.

MA 5. Middle Little Salmon River

Table SW-19 below provides a numerical display of the SWIs. A narrative description of each indicator describes the environmental effects on the soil and water resources.

SWI 1: Percent of the MA designated open to cross-country motor vehicle use and/or limited motorized access

There is a total of 35,580 acres of RCAs within the Middle Little Salmon River MA. In Alternative A, approximately 87 percent (30,860 acres) of the MA is open to cross-country motor vehicle use and open to limited motorized access for parking and dispersed camping. In all action alternatives, a reduction of -67percent (-23,890 acres) of the MA open to cross-country motor vehicle indicates an improvement to protect the soil and water resources compared with the No Action Alternative.

Table SW-19. Effects to the Soil and Water Indicators for MA 5

MA 5: Soil and Water Indicators	Existing Condition	Change by Alternative				
		A	B	C	D	E
1. Percent (and acres) of MA designated open to cross-country motor vehicle use and/or limited motorized access.	87% 30,910 acres	0% 0 acres	-67% -23,890 acres	-67% -23,890 acres	-67% -23,890 acres	-67%-23,890 acres
2. Percent (and acres) RCAs in areas open to cross-country motor vehicle use and/or limited motorized access.	78% 6,820 acres	0% 0 acres	-55% -4,790 acres	-55% -4,790 acres	-55% -4,790 acres	-55% -4,790 acres
3. Miles of designated roads.	98.3	0	0	0	0	0
4. Miles of designated two-wheel motorized trails.	3.0	0.0	0.0	0.0	0.0	0.0
5. Miles of designated ATV and OHV trails.	0.0	0.0	0.0	0.0	0.0	0.0
6. Miles of designated roads and motorized trails in subs with a high vulnerability rating.	0.1	0.0	0.0	0.0	0.0	0.0
7. Miles of designated roads and motorized trails within RCAs.	30.9	0.0	0.0	0.0	0.0	0.0
8. Number of inventoried stream crossings on designated roads and motorized trails.	120	0	0	0	0	0

SWI 2: Percent (and acres) of RCAs in designated areas open to cross-country motor vehicle use and/or limited motorized access

There is a total of 8,680 acres of RCAs within the Middle Little Salmon River MA. In Alternative A, approximately 78 percent (6,820 acres) of the RCAs are open to cross-country motor vehicle use and open to limited motorized access for parking and dispersed camping. In all action alternatives, there is a reduction of -55 percent (-4,790 acres) of RCA acres open to motorized cross-country vehicle use. In all action alternatives, the reduction of the RCAs open to cross-country motor vehicle use indicates an improvement to protect the soil and water resources compared with the No Action Alternative.

SWI 3, 4, & 5: Miles of designated roads, Miles of designated two-wheel motorized trail, & Miles of designated ATV and OHV trails

In all alternatives, there is no change in TSRC or DD and water quality since there would be no change in designated roads or two-wheel motorized and ATV trails.

SWI 6 & 7 & 8: Miles of designated roads and motorized trails within subwatersheds with a high watershed vulnerability rating, Miles of designated roads and motorized trails within RCAs, Number of inventoried stream crossings on designated roads and motorized trails

All alternatives show no major water quality impacts in relation to these indicators.

Cumulative Effects for MA 5

The dominant management prescription for this MA is "5.1-Retoration and Maintenance Emphasis within Forested Landscapes." Emphasis is on restoring vegetation within the desired condition with commodity production an outcome. Approximately 14 percent of the MA contains private timber lands. Based on the large extent of private lands, recreation use growth trends and other uses identified below – adverse cumulative effects on the soil and water resources are likely to maintain at existing levels.

Non-motorized Trails, Unauthorized Roads, Closed NFS Roads, and Unauthorized Motorized Vehicle Use

Effects from non-motorized trails, unauthorized roads, closed NFS roads, and unauthorized use would continue. The MA contains 7.1 miles of non-motorized trail located in subwatersheds with low to high watershed vulnerability, 81.3 miles of closed NFS roads, and 34.9 miles of inventoried unauthorized roads.

Other Forest Service Ongoing and Reasonably Foreseeable Actions

Reasonably foreseeable actions that may contribute to increased cumulative effects on the soil and water resources include the following ongoing activities: livestock grazing on public and private lands, fire suppression, firewood gathering, and dispersed recreation. The Meadows Slope Wildland Fire Protection Project has been approved for this MA (Appendix D).

Cumulative Effects Conclusion for MA 5

Currently, only 13 percent of the Middle Little Salmon River MA is closed to all cross-country motorized vehicle use. All action alternatives reduce the area open to cross-country motorized use by an additional 67 percent. This additional closure provides a consistent message to the public and through time and enforcement, new user defined roads and trails should be minimized. Approximately 20 percent (7,000 acres) of the area will remain open for limited access to cross-country motorized vehicles. Approximately 2,000 acres will remain open to limited access within RCAs. This limited access is along open roads and trails where the majority of cross-country motorized travel currently occurs. In all alternatives, existing problems on open roads, closed roads, and unauthorized roads will still occur, in all alternatives. None of the alternatives authorizes watershed restoration activities. Existing unauthorized roads will not be physically blocked or rehabilitated and will remain on the landscape, contributing to soil and water resource degradation. In all alternatives, watershed improvement opportunities exist when future and current NEPA projects are implemented. Opportunities, such as the Meadows Slope Wildland Fire Protection Project, exist to improve watershed conditions through closure and decommissioning of selected unauthorized and closed roads in future project proposals in accordance with Forest Plan direction (Forest Plan 2003: p. III-60: FRGU04).

There is no change in the designation of roads or trails between any of the alternatives within this MA. All Action Alternatives, which reduce the extent of cross-country motorized travel, should reduce impacts from new unauthorized roads and trails. Based on the large extent of private lands, recreation use growth trends and other uses identified in Appendix D – adverse cumulative effects on the soil and water resources are likely to maintain at existing levels. Given the improvements or no change in most SWIs in the action alternatives, the proposed changes in travel management are not expected to contribute to negative cumulative effects to the soil and water resource.

Forest Plan Consistency

MA Objectives 0518 and 0519 address watershed restoration by reducing road-related accelerated sediment. While outside the scope of this project, future opportunities exist to meet these objectives. Within the MA all action alternatives would move toward the Desired Conditions for the soil and water resources by reducing the area open to cross-country motorized vehicle use by 67 percent.

MA 6. Goose Creek/Hazard Creek

Table SW-20 below provides a numerical display of the SWIs. A narrative description of each indicator describes the environmental effects on the soil and water resources.

Table SW-20. Effects to the Soil and Water Indicators for MA 6

MA 6: Soil and Water Indicators	Existing Condition	Change by Alternative				
		A	B	C	D	E
1. Percent (and acres) of MA designated open to cross-country motor vehicle use and/or limited motorized access.	50% 38,540 ac.	0% 0 acres	-38% -29,220 acres	-38% -28,970 acres	-38% -29,290 acres	-38% -29,100 acres
2. Percent (and acres) RCAs in areas open to cross-country motor vehicle use and/or limited motorized access.	57% 7,480 ac.	0% 0 acres	-40% -5,280 acres	-39% -5,160 acres	-40% -5,290 acres	-40% -5,250 acres
3. Miles of designated roads.	113.4	0	-1.0	-1.0	-1.0	-1.0
4. Miles of designated two-wheel motorized trails.	29.3	0.0	-8.9	0.0	-11.7	-5.2
5. Miles of designated ATV and OHV trails.	7.4	0.0	0.0	+1.5	0.0	+1.5
6. Miles of designated roads and motorized trails in subs w/ high watershed vulnerability rating.	12.0	0.0	-2.4	0.0	-2.4	0.0
7. Miles of designated roads and motorized trails within RCAs.	35.6	0.0	-4.8	+0.1	-5.4	-3.7
8. Number of inventoried stream crossings on designated roads and motorized trails.	154	0	-16	+1	-18.0	-14.0

SWI 1: Percent of the MA designated open to cross-country motor vehicle use and/or limited motorized access

There is a total of 77,120 acres within the Goose Creek/Hazard Creek MA. In Alternative A, approximately 50 percent (38,650 acres) of the MA is open to cross-country motor vehicle use and open to limited motorized access for parking. In all action alternatives, a reduction of -38 percent (-28,970 to -29,290 acres) of the MA open to cross-country motor vehicle indicates a major improvement in the potential to protect the soil and water resources compared with the No Action Alternative.

SWI 2: Percent (and acres) of RCAs in designated areas open to cross-country motor vehicle use and/or limited motorized access

There is a total of 13,100 acres of RCAs within the Goose Creek/Hazard Creek MA. In Alternative A, approximately 57 percent (7,490 acres) of the RCAs are open to cross-country motor vehicle use and open to limited motorized access for parking and dispersed camping. In all action alternatives, there is a reduction of -39 to -40 percent (-5,160 to -5,290 acres) of RCA acres open to motorized cross-country vehicle use. In all action alternatives, the reduction of the RCAs open to cross-country motor vehicle use indicates an improvement to protect the soil and water resources compared with the No Action Alternative.

SWI 3: Miles of designated roads

In all action alternatives, a 1 mile reduction in roads would improve DD and water quality.

SWI 4: Miles of designated two-wheel motorized trails

In Alternatives B, D, and E, reductions in these trails of 8.9 miles, 11.7, and 5.2 miles, respectively, would improve DD and water quality. Alternative C would not change.

SWI 5: Miles of designated ATV and OHV trails

In Alternatives B and D, there would be no change in DD and water quality. The addition of 1.5 miles of ATV trail in Alternatives C and E would potentially increase DD and degrade water quality.

SWI 6: Miles of designated roads and motorized trails within subwatersheds with a high watershed vulnerability rating

In Alternative B and D, water quality would improve from reductions in 2.4 miles roads and motorized trails in high vulnerability watersheds. Alternatives C and E would not change this indicator.

SWI 7: Miles of motorized NFS roads and trails within RCAs

In Alternatives B, D, and E, water quality would improve due to the reduction of 4.8 miles, 5.4 miles, and 3.7 miles of motorized roads and trails within RCAs, respectively. In Alternative C the increase of 0.1 miles within RCAs would slightly degrade water quality.

SWI 8: Number of inventoried stream crossings on designated roads and motorized trails

In Alternatives B, D, and E, water quality would improve due to the reduction of stream crossings by 16, 18, and 14 respectively. Alternative C would indicate a degrade water quality with the increase of one motorized stream crossing.

Cumulative Effects for MA 6

Management prescriptions within the MA include Undeveloped Recreation; Roaded Recreation; Passive Restoration and Maintenance of Aquatic, Terrestrial, and Hydrologic Resources; and Restoration and Maintenance Emphasis within Forested Landscapes. Based on the recreation use growth trends and other uses identified below – adverse effects on the soil and water resources are likely to increase in the Goose Creek area and be maintained at near existing conditions in the Hazard Creek area.

Non-motorized Trails, Unauthorized Roads, Closed NFS Roads, and Unauthorized Motorized Vehicle Use

Effects from non-motorized trails, unauthorized roads, closed NFS roads, and unauthorized use would continue. The MA contains 26 miles of non-motorized trail located in subwatersheds with low, moderate, and high watershed vulnerability. The MA contains 45.8 miles of closed NFS roads and 54.1 miles of inventoried unauthorized roads.

Other Forest Service Ongoing and Reasonably Foreseeable Actions

Reasonably foreseeable actions that may contribute to effects on the soil and water resources include livestock grazing, fire suppression, firewood gathering, and dispersed recreation. The Meadows Slope Wildland Fire Protection Project is approved for this MA (Appendix D).

Cumulative Effects Conclusion for MA 6

Currently, 50 percent of the Goose Creek/Hazard Creek MA is closed to all cross-country motorized vehicle use. All action alternatives reduce the area open to cross-country motorized use by an additional 38 percent. This additional closure provides a consistent message to the public and through time and enforcement, new user defined roads and trails should be minimized.

Approximately 12 percent (9,200 acres) of the area will remain open for limited access to cross-country motorized vehicles. Approximately 2,200 acres will remain open to limited access within RCAs. This limited access is along open roads and trails where the majority of cross-country motorized travel currently occurs. In all alternatives, existing problems on open roads, closed roads, and unauthorized roads will still occur, in all alternatives. None of the alternatives authorizes watershed restoration activities. Existing unauthorized roads will not be physically blocked or rehabilitated and will remain on the landscape, contributing to soil and water resource degradation. In all alternatives, watershed improvement opportunities exist when future and current NEPA projects are implemented. Opportunities, such as the Meadows Slope Wildland Fire Protection Project, exist to improve watershed conditions through closure and decommissioning of selected unauthorized and closed roads in future project proposals in accordance with Forest Plan direction (Forest Plan 2003: p. III-60: FRGU04).

All Action Alternatives improve existing conditions by closing the Duck Lake Road 50268 (Proposal 6-6). Alternative B, D, and E provide additional protection by converting several motorized trail to a non-motorized status. Alternatives D and E, designates one closed road (Proposal 6-8) in an open area to an open ATV trail. PDFs are expected to minimize impacts to the soil and water resources, and thus minimize the potential cumulative effects. This designation will only occur once Project Design Features (PDFs) are applied.

Based on the recreation use growth trends and other uses identified below – adverse effects on the soil and water resources are likely to increase in the Goose Creek area and be maintained at near existing conditions in the Hazard Creek area. The closure of an additional 38 percent to cross-country motorized travel in all action alternatives should help reduce impacts from cross-country motorized travel. Slight changes occur between action alternatives, based on the open or closed motorized status of roads and trails as disclosed by the Soil and Water Indicators (SWIs) in the Environmental Consequences Section. Alternatives B and D are very similar and show the greatest improvement. Alternatives C and E are similar in that they convert a closed road to an open ATV trail, with E showing a slightly greater improvement over C because of two-wheel motorized trail reduction. Given improvements or no change to most SWIs, and relatively small increases in motorized use (1.5 miles of OHV/ATV trail in Alternative C and E) and stream crossings (increase of 1 in alternative C) changes in travel management designations associated with action alternatives are not expected to contribute to measurable changes in cumulative effects on the soil and water resource.

Forest Plan Consistency

MA Objectives 0626, 0627, and 0631 address watershed restoration by reducing sediment. While outside the scope of this project, future opportunities exist to meet these objectives. Objective 0629 states, “Reduce soil compaction and restore vegetation by restricting dispersed camping to specific sites around Goose Lake Reservoir and Brundage Reservoir. Future opportunities exist to inventory and rehabilitate those sites as needed.

Within the MA all action alternatives would move toward the Desired Conditions for the soil and water resources by reducing the area open to cross-country motorized vehicle use.

MA 7. Payette Lakes

Table SW-21 below provides a numerical display of the SWIs. A narrative description of each indicator describes the environmental effects on the soil and water resources.

Table SW-21. Effects to the Soil and Water Indicators for MA 7

MA 7: Soil and Water Indicators	Existing Condition	Change by Alternative				
		A	B	C	D	E
1. Percent (and acres) of MA designated open to cross-country motor vehicle use and/or limited motorized access.	33% 33,530 ac.	0% 0 acres	-27% -26,840 acres	-27% -26,840 acres	-27% -26,930 acres	-27% -26,840 acres
2. Percent (and acres) RCAs in areas open to cross-country motor vehicle use and/or limited motorized access.	35% 5,560 ac.	0% 0 acres	-24% -3,900 acres	-24% -3,900 acres	-24% -3,910 acres	-24% -3,900 acres
3. Miles of designated roads.	59.1	0	+0.2	+0.2	+0.2	+0.2
4. Miles of designated two-wheel motorized trails.	24.8	0.0	0.0	0.0	-4.2	0.0
5. Miles of designated ATV and OHV trails.	4.5	0.0	0.0	0.0	0.0	0.0
6. Miles of designated roads and motorized trails in subs w/ a high watershed vulnerability rating.	0.0	0.0	0.0	0.0	0.0	0.0
7. Miles of designated roads and motorized trails within RCAs.	16.6	0.0	+0.2	+0.2	-0.3	+0.2
8. Number of inventoried stream crossings on designated roads and motorized trails.	101	0	0	0	-1	0

SWI 1: Percent of the MA designated open to cross-country motor vehicle use and/or limited motorized access

There is a total of 100,730 acres of RCAs within the Payette Lakes MA. In Alternative A, approximately 33 percent (33,530 acres) of the MA is open to cross-country motor vehicle use and open to limited motorized access for parking and dispersed camping. In all action alternatives, a reduction of -27 percent (-26,840 to -26,930 acres) of the MA open to cross-country motor vehicle indicates an improvement to protect the soil and water resources compared with the No Action Alternative.

SWI 2: Percent (and acres) of RCAs in designated areas open to cross-country motor vehicle use and/or limited motorized access

There is a total of 16,060 acres of RCAs within the Payette Lakes MA. In Alternative A, approximately 35 percent (5,560 acres) of the RCAs are open to cross-country motor vehicle use and open to limited motorized access for parking and dispersed camping. In all action alternatives, there is a reduction of -24 percent (-3,900 to -3,919 acres) of RCA acres open to motorized cross-country vehicle use. In all action alternatives, the reduction of the RCAs open to cross-country motor vehicle use indicates an improvement to protect the soil and water resources compared with the No Action Alternative.

SWI 3: Miles of designated roads

In all action alternatives there is an increase of 0.2 miles of designated road, and therefore a degrade in DD and water quality.

SWI 4: Miles of designated two-wheel motorized trail

Alternatives B, C, and E would show no change. In Alternative D a reduction of 4.2 miles two-wheeled motorized trail would improve DD and water quality.

SWI 5: Miles of designated ATV and OHV trails

In all alternatives, there would be no change in TSRC or DD and water quality.

SWI 6: Miles of designated roads and motorized trails within subwatersheds with a high watershed vulnerability rating

There are no subwatersheds with a high watershed vulnerability rating in this MA.

SWI 7: Miles of designated roads and motorized trails within RCA

In Alternatives B, C and E, there would be a degrade in water quality. In Alternative D, decreases in this indicator would improve water quality.

SWI 8: Number of inventoried stream crossings on designated roads and motorized trails

In Alternatives B, C, and E, there would be no change in water quality. In Alternative D, reduced stream crossings would improve water quality.

Cumulative Effects for MA 7

The management prescriptions within the MA range widely from Recommended Wilderness; Undeveloped Recreation; both Active and Passive Restoration and Maintenance of Aquatic, Terrestrial, and Hydrologic Resources; to Restoration and Maintenance Emphasis within Forested Landscapes. The MA contains little private land. Due to a increased recreation use growth trends, and other uses identified below – adverse cumulative effects on the soil and water resources are likely to be maintained near existing levels.

Non-motorized Trails, Unauthorized Roads, Closed NFS Roads, and Unauthorized Motorized Vehicle Use

Effects from non-motorized trails, unauthorized roads, closed NFS roads, and unauthorized use would continue. The MA contains 34.8 miles of non-motorized trail, 20.9 miles of closed NFS roads, and 13.1 miles of inventoried unauthorized roads.

Other Forest Service Ongoing and Reasonably Foreseeable Actions

Reasonably foreseeable actions that contribute to increased cumulative effects on the soil and water resources include livestock grazing, fire suppression, firewood gathering, and dispersed recreation. The Meadows Slope Wildland Fire Protection Project is approved for this MA (see Appendix D).

Cumulative Effects Conclusion for MA 7

Currently, the majority (67 percent) of the Payette Lakes MA is closed to all cross-country motorized vehicle use. All action alternatives reduce the area open to cross-country motorized use by an additional 27 percent. This additional closure provides a consistent message to the public and through time and enforcement, new user defined roads and trails should be minimized. Approximately 6 percent (6,700 acres) of the area will remain open for limited access to cross-country motorized vehicles. Approximately 1,600 acres will remain open to limited access within RCAs. This limited access is along open roads and trails where the majority of cross-country motorized travel currently occurs. In all alternatives, existing problems on open roads, closed roads, and unauthorized roads will still occur, in all alternatives. None of the alternatives authorizes watershed restoration activities. Existing unauthorized roads will not be physically

blocked or rehabilitated and will remain on the landscape, contributing to soil and water resource degradation. In all alternatives, watershed improvement opportunities exist when future and current NEPA projects are implemented.

There is little change in the designation of roads or trails between any of the alternatives within this MA. Proposals 7-3 and 7-4 would open up a total of 0.2 miles of unauthorized roads that currently lead to existing dispersed campsites. These two proposals will have little cumulative effects on the soil and water resources. All action alternatives reduce the extent of cross-country motorized travel and may produce a slight reduction in adverse impacts from new unauthorized roads and trails. Alternative D does indicate a slightly greater improvement with the reduction of two-wheel motorized trails. Based on the large extent of private lands, recreation use growth trends and other uses identified in Appendix D – adverse cumulative effects on the soil and water resources are likely to maintain at existing levels. Given the improvements or lack of change to most SWIs and very small increases in motorized use (0.2 miles) in the action alternatives, the proposed changes in travel management are not expected to contribute to negative cumulative effects to the soil and water resource.

Forest Plan Consistency

MA Objectives 0724 and 0730 address watershed restoration by reducing sediment. While outside the scope of this project, future opportunities exist to meet these objectives. Objective 0726 states: "Identify recreational campsite or parking areas that are contributing unacceptable levels of accelerated sediment in the Upper Payette Lakes and Payette Lake Watersheds." This objective would be met by closing all cross-country vehicle travel in the Lake Creek area. Future opportunities exist to inventory and rehabilitate sites as needed.

Objective 0727 states: "Maintain the meadow ecosystem and restore wet meadows in the Bear Basin area by reducing soil compaction, accelerated erosion, and loss of vegetation from motorized recreation. Install information signs and designate the area as non-motorized on the Forest Travel Map." All action alternatives would close Bear Basin to cross-country motorized vehicle use, however, the area (a 600 foot corridor) adjacent to designated roads and motorized trails would still be open to limited access for parking and dispersed camping.

Within the MA, all action alternatives would move toward Desired Conditions by reducing the area open to cross-country motorized vehicle use.

MA 8. Kennally Creek

Table SW-22 below provides a numerical display of the SWIs. A narrative description of each indicator describes the environmental effects on the soil and water resources.

SWI 1: Percent of the MA designated open to cross-country motor vehicle use and/or limited motorized access

There is a total of 34,300 acres within the Kennally Creek MA. In Alternative A, approximately 39 percent (13,430 acres) of the MA is open to cross-country motor vehicle use and open to limited motorized access for parking and dispersed camping. In all action alternatives, a reduction of -29 to -31 percent (-10,110 to -10,570 acres) of the MA open to cross-country motor vehicle indicates an improvement to protect the soil and water resources compared with the No Action Alternative.

SWI 2: Percent (and acres) of RCAs in designated areas open to cross-country motor vehicle use and/or limited motorized access

In all action alternatives, there is a reduction of 28 to 30 percent (-2,330 to -2,510 acres) that are open to motorized cross-country vehicle use. In all action alternatives, the reduction of the RCAs open to cross-country motor vehicle use indicates a major improvement in the potential to protect the soil and water resources compared with the No Action Alternative.

Table SW-22. Effects to the Soil and Water Indicators for MA 8

MA 8: Soil and Water Indicators	Existing Condition	Change by Alternative				
		A	B	C	D	E
1. Percent (and acres) of MA designated open to cross-country motor vehicle use and/or limited motorized access.	39% 13, 430 ac.	0% 0 acres	-31% -10,500 acres	-30% -10,130 acres	-31% -10,570 acres	-29% -10,110 acres
2. Percent (and acres) RCAs in areas open to cross-country motor vehicle use and/or limited motorized access.	43% 3,570 ac.	0% 0 acres	-30% -2,490 acres	-28% -2,340 acres	-30% -2,510 acres	-28% -2,330 acres
3. Miles of designated roads.	26.1	0.0	-4.4	0.0	-4.4	0.0
4. Miles of designated two-wheel motorized trails.	22.5	0.0	-4.5	0.0	-4.5	0.0
5. Miles of designated ATV and OHV trails.	2.8	0.0	0.0	0.0	-2.8	0.0
6. Miles of designated roads and motorized trails in subs w/ a high watershed vulnerability rating.	0.1	0.0	-0.1	0.0	0.0	0.0
7. Miles of designated roads and motorized trails within RCAs.	22.5	0.0	-4.4	0.0	-5.3	0.0
8. Number of inventoried stream crossings on designated roads and motorized trails.	52	0	-8	0	-12	0

SWI 3: Miles of designated roads.

In Alternatives B and D, Proposals 8-4 and 8-5 would implement the Sloan Kennally project EIS's recommended 4.4 miles of road decommissioning. Implementation of Alternative B and D would indicate an improvement in DD and water quality from the reduction of designated roads. In Alternatives C and E there would be no change from the existing condition.

SWI 4: Miles of designated two-wheel motorized trails

In Alternatives B and D, a reduction of 4.5 miles of two-wheeled motorized trails signifies an improvement in DD and water quality. Alternatives C and E would show no change.

SWI 5: Miles of designated ATV and OHV trails

The FEIS has modified the existing condition to reflect the new Paddy Flat EA decision (Proposal 8-3) to converts a closed road to an open ATV trail. Since the Paddy Flat decision and mitigation has not been implemented, all ATV Project Design Features (PDFs) will be implemented before this ATV is designated on the Travel Map. Therefore this FEIS indicates no change between Alternatives A, B, C, and E. In Alternative D, there would be a reduction 2.8 miles of ATV by a new decision not to implement the Paddy Flat decision. This was carried forward in Alternative D since it was originally listed this as non-motorized in the DEIS. Therefore, Alternative D would show an improvement in DD and water quality.

SWI 6: Miles of designated roads and motorized trails within subwatersheds with a high watershed vulnerability rating

There are no subwatersheds with a high watershed vulnerability rating in this MA.

SWI 7: Miles of designated roads and motorized trails within RCAs

In all action alternatives, reduced miles in this indicator signify an improvement to water quality.

SWI 8: Number of inventoried stream crossings on designated roads and motorized trails

In Alternatives B and D a reduced numbers of crossings signify an improvement to water quality. There is no change in Alternative C and D.

Cumulative Effects for MA 8

Management prescriptions include Recommended Wilderness; Undeveloped Recreation; Active and Passive Restoration, Maintenance of Aquatic, Terrestrial, and Hydrologic Resources; and Commodity Production. About twelve percent of the MA is State lands and one percent private lands. Based on the large extent of state lands, recreation use growth trends, and other uses identified below adverse effects to the soil and water resources are likely to increase in the Commodity Production area and be maintained at other management prescription areas.

Non-motorized Trails, Unauthorized Roads, Closed NFS Roads, and Unauthorized Motorized Vehicle Use.

Effects from these roads, trails, and uses would continue. The MA contains 10.4 miles of non-motorized trail, 30.9 miles of closed NFS roads, and 12.5 miles of inventoried unauthorized roads.

Other Forest Service Ongoing and Reasonably Foreseeable Actions

Reasonably foreseeable actions that may contribute to increased effects on the soil and water resources include livestock grazing, fire suppression, firewood gathering, and dispersed recreation. Improvements are planned in the Paddy Flat Vegetation Management Project (Appendix D).

Cumulative Effects Conclusion for MA 8

Currently, the majority (61 percent) of the Kennally Creek MA is closed to all cross-country motorized vehicle use. All action alternatives reduce the area open to cross-country motorized use by an additional 30 percent. This additional closure provides a consistent message to the public and through time and enforcement, new user defined roads and trails should be minimized. Approximately 9 percent (3,000 acres) of the area will remain open for limited access to cross-country motorized vehicles. Approximately 1,100 acres will remain open to limited access within RCAs. This limited access is along open roads and trails where the majority of cross-country motorized travel currently occurs. In all alternatives, existing problems on open roads, closed roads, and unauthorized roads will still occur, in all alternatives. None of the alternatives authorizes watershed restoration activities. Existing unauthorized roads will not be physically blocked or rehabilitated and will remain on the landscape, contributing to soil and water resource degradation. In all alternatives, watershed improvement opportunities exist when future and current NEPA projects are implemented. Opportunities, such as the Paddy Flat Project, exist to improve watershed conditions through closure and decommissioning of selected unauthorized and closed roads in future project proposals in accordance with Forest Plan direction (Forest Plan 2003: p. III-60: FRGU04).

In Alternatives B and D, Proposals 8-4 and 8-5 would implement the Sloan Kennally project EIS's recommended 4.4 miles of road decommissioning. The FEIS has modified the existing

condition to reflect the new Paddy Flat EA decision (Proposal 8-3) to converts a closed road to an open ATV trail. Since the Paddy Flat decision and mitigation has not been implemented, all ATV Project Design Features (PDFs) will be implemented before this ATV is designated on the Travel Map. Specific PDFs for this ATV trail includes, new construction, fixing problems at existing stream crossing, and implementation of PDFs are expected to minimize impacts to the soil and water resources, and thus minimize the potential cumulative effects.

Based on the large extent of state lands, recreation use growth trends, and other uses identified below adverse effects to the soil and water resources are likely to increase in the Commodity Production area and be maintained at other management prescription areas. The closure of an additional 30 percent to cross-country motorized travel in all action alternatives should help reduce impacts from cross-country motorized travel. Slight changes occur between action alternatives, based on the open or closed motorized status of roads and trails as disclosed by the Soil and Water Indicators (SWIs) in the Environmental Consequences Section. Alternatives B and D indicate the greatest improvement, while Alternatives C and E indicate less improvement. Given improvements or no change to SWIs, changes in travel management associated with action alternatives are not expected to contribute to measurable changes in cumulative effects on the soil and water resource.

Forest Plan Consistency

MA Objectives 0822, 0824, and 0825 address watershed restoration by reducing sediment. While outside the scope of this project, future opportunities exist to meet these objectives. Objective 1238 states, “Identify recreational campsite or parking areas, or trails that are contributing unacceptable levels of accelerated sediment, compaction, or vegetation loss.” Future opportunities exist to inventory and rehabilitate those sites as needed.

MA 9. Lake Creek/French Creek

Table SW-23 below provides a numerical display of the SWIs. A narrative description of each indicator describes the environmental effects on the soil and water resources.

SWI 1: Percent of the MA designated open to cross-country motor vehicle use and/or limited motorized access

There is a total of 83,740 acres within the Lake Creek/French Creek MA. In Alternative A, approximately 8 percent (6,400 acres) of the MA is open to cross-country motor vehicle use and open to limited motorized access for parking and dispersed camping. In all action alternatives, a reduction of -3 to -4 percent (-2,780 to -3,410 acres) of the MA open to cross-country motor vehicle indicates an improvement to protect the soil and water resources compared with the No Action Alternative.

SWI 2: Percent (and acres) of RCAs in designated areas open to cross-country motor vehicle use and/or limited motorized access

There is a total of 13,980 acres of RCAs within the Lake Creek/French Creek MA. In Alternative A, approximately 8 percent (1,150 acres) of the RCAs are open to cross-country motor vehicle use and open to limited motorized access for parking and dispersed camping. In all action alternatives, there is a reduction of -4 to -5 percent (-550 to -750 acres) of RCA acres open to motorized cross-country vehicle use. In all action alternatives, the reduction of the RCAs open to cross-country motor vehicle use indicates an improvement to protect the soil and water resources compared with the No Action Alternative.

Table SW-23. Effects to the Soil and Water Indicators for MA 9

MA 9: Soil and Water Indicators	Existing Condition	Change by Alternative				
		A	B	C	D	E
1. Percent (and acres) of MA designated open to cross-country motor vehicle use and/or limited motorized access.	8% 6,400 ac.	0% 0 acres	-4% -3,280 acres	-3% -2,780 acres	-4% -3,410 acres	-3% -2,860 acres
2. Percent (and acres) RCAs in areas open to cross-country motor vehicle use and/or limited motorized access.	8% 1,150 ac.	0% 0 acres	-5% -740 acres	-4% -550 acres	-5% -750 acres	-4% -560 acres
3. Miles of designated roads.	20.9	0.0	0.0	0.0	0.0	0.0
4. Miles of designated two-wheel motorized trails.	85.1	0.0	-24.1	-2.8	-29.9	-6.4
5. Miles of designated ATV and OHV trails.	0.3	0.0	0.0	0.0	0.0	0.0
6. Miles of designated roads and motorized trails in subs w/ a high watershed vulnerability rating.	6.4	0.0	-6.3	0.0	-6.3	0.0
7. Miles of designated roads and motorized trails within RCAs.	21.9	0.0	-10.2	-2.2	-10.8	-2.7
8. Number of inventoried stream crossings on designated roads and motorized trails.	119	0	-30.0	-9.0	-33.0	-13.0

SWI 3: Miles of designated roads

In all alternatives, this indicator signifies there would be no change in TSRC or DD and water quality due to no changes in designated roads.

SWI 4: Miles of designated two-wheel motorized trail

In all action alternatives, DD and water quality would improve due to reductions in two-wheel motorized trail.

SWI 5: Miles of designated ATV and OHV trails

In all alternatives, there would be no change in TSRC or DD and water quality due to no change in the amount of road and trails on the landscape.

SWI 6: Miles of designated roads and motorized trails within subwatersheds with a high watershed vulnerability rating

Alternatives B and D would improve water quality through reductions in the indicator. Alternatives C and E would show no change.

SWI 7 & 8: Miles of designated roads and motorized trails within RCAs, Number of inventoried stream crossings on designated roads and motorized trails

In all action alternatives, water quality would improve based on reductions in these indicators.

Cumulative Effects for MA 9

The dominant management prescription is Passive Restoration and Maintenance of Aquatic, Terrestrial, and Hydrologic Resources. Since most of the MA is administered by the Forest, effects from other activities are likely to be maintained at existing levels.

Non-motorized Trails, Unauthorized Roads, Closed NFS Roads, and Unauthorized Motorized Vehicle Use

Effects from non-motorized trails, unauthorized roads, closed NFS roads, and unauthorized use would continue. The MA contains 29.1 miles of non-motorized trail, 14.8 miles of closed NFS roads, and 1.5 miles of inventoried unauthorized road.

Other Forest Service Ongoing and Reasonably Foreseeable Actions

Reasonably foreseeable actions that may contribute to increased cumulative effects on the soil and water resources include livestock grazing, fire suppression, firewood gathering, and dispersed recreation. There are no additional foreseeable projects identified in the MA.

Cumulative Effects Conclusion for MA 9

Currently, most (92 percent) of the Lake Creek/French Creek MA is closed to all cross country motorized vehicle use. All action alternatives reduce the area open to cross-country motorized use by an additional 3 to 4 percent. This additional closure provides a consistent message to the public and through time and enforcement, new user defined roads and trails should be minimized. Approximately 5 percent (about 3,300 acres) of the area will remain open for limited access to cross-country motorized vehicles. Approximately 500 acres will remain open to limited access within RCAs. This limited access is along open roads and trails where the majority of cross-country motorized travel currently occurs. In all alternatives, existing problems on open roads, closed roads, and unauthorized roads will still occur, in all alternatives. None of the alternatives authorizes watershed restoration activities. Existing unauthorized roads will not be physically blocked or rehabilitated and will remain on the landscape, contributing to soil and water resource degradation. In all alternatives, watershed improvement opportunities exist when future and current NEPA projects are implemented.

In all action alternatives there is a reduction of two-wheel motorized trail. The majority of the reduction occurs in Alternative B and D, with small reductions in Alternatives C and E. Since most of this MA is currently closed to cross-country motorized travel there is little to no improvement to be found by SWIs 1 and 2. Since most of the MA is administered by the Forest, effects from other activities are likely to be maintained at existing levels.

While there are no planned foreseeable improvement projects within this MA, opportunities will exist to improve watershed conditions through closure and decommissioning of selected unauthorized roads in future project proposals in accordance with Forest Plan direction (Forest Plan 2003: p. III-60: FRGU04). Given improvements or no change to SWIs, changes in travel management associated with action alternatives are not expected to contribute to measurable changes in cumulative effects on the soil and water resource.

Forest Plan Consistency

Forest-wide direction applies, because no specific soil and water resource direction exists for the MA.

MA 10. Fall Creek/Warren

Table SW-24 below provides a numerical display of the SWIs. A narrative description of each indicator describes the environmental effects on the soil and water resources.

Table SW-24. Effects to the Soil and Water Indicators for MA 10

MA 10: Soil and Water Indicators	Existing Condition	Change by Alternative				
		A	B	C	D	E
1. Percent (and acres) of MA designated open to cross-country motor vehicle use and/or limited motorized access.	43% 45,950 acres	0% 0 acres	-37% -39,230 acres	-37% -39,520 acres	-37% -39,680 acres	-37% -39,470 acres
2. Percent (and acres) RCAs in areas open to cross-country motor vehicle use and/or limited motorized access.	44% 8,090 acres	0% 0 acres	-35% -6,360 acres	-35% -6,410 acres	-35% -6,450 acres	-35% -6,400 acres
3. Miles of designated roads.	54.4	0.0	0.0	-6.4	-6.4	-6.4
4. Miles of designated two-wheel motorized trails.	19.6	0.0	-6.0	-6.0	-6.0	-6.0
5. Miles of designated ATV and OHV trails.	10.5	0.0	0.0	+6.4	0.0	+6.4
6. Miles of designated roads and motorized trails in subs w/ a high watershed vulnerability rating.	3.3	0.0	-0.8	-0.8	-2.2	-0.8
7. Miles of designated roads and motorized trails within RCAs.	16.4	0.0	-0.5	-0.6	-2.3	-0.6
8. Number of inventoried stream crossings on designated roads and motorized trails.	49	0	-3	-3	-7	-3

SWI 1: Percent of the MA designated open to cross-country motor vehicle use and/or limited motorized access

There is a total of 105,830 acres within the Fall Creek/Warren Creek MA. In Alternative A, approximately 43 percent (45,950 acres) of the MA is open to cross-country motor vehicle use and open to limited motorized access for parking and dispersed camping. In all action alternatives, a reduction of -37 percent (-39,230 to -39,680 acres) of the MA open to cross-country motor vehicle indicates an improvement to protect the soil and water resources compared with the No Action Alternative.

SWI 2: Percent (and acres) of RCAs in designated areas open to cross-country motor vehicle use and/or limited motorized access

There is a total of 18,190 acres of RCAs within the Fall Creek/Warren Creek MA. In Alternative A, approximately 44 percent (8,080 acres) of the RCAs are open to cross-country motor vehicle use and open to limited motorized access for parking and dispersed camping. In all action alternatives, there is a reduction of -35 percent (-6,360 to -6,450 acres) of RCA acres open to motorized cross-country vehicle use. In all action alternatives, the reduction of the RCAs open to cross-country motor vehicle use indicates an improvement to protect the soil and water resources compared with the No Action Alternative.

SWI 3: Miles of designated roads

In Alternative B, this indicator signifies there would be no change in TSRC or DD and water quality due to no changes in designated roads. In Alternatives C, D, and E, this indicator signifies DD and water quality would improve due to reductions in designated roads.

SWI 4: Miles of designated two-wheel motorized trail

In all action alternatives, DD and water quality would improve due to the reduction of two-wheel motorized trails.

SWI 5: Miles of designated ATV and OHV trails

In Alternatives B and D, there would be no change in DD and water quality. In Alternatives C and E, DD and water quality would degrade due to increased ATV or OHV trail miles.

SWI 6 & 7 & 8: Miles of designated roads and motorized trails within subwatersheds with a high watershed vulnerability rating, Miles of designated roads and motorized trails within RCAs, Number of inventoried stream crossings on designated roads and motorized trails

In all action alternatives, the reductions in these indicators signify water quality would improve.

Cumulative Effects for MA 10

Management prescriptions within the MA range widely from Undeveloped Recreation; both Active and Passive Restoration and Maintenance of Aquatic, Terrestrial, and Hydrologic Resources; to Restoration and Maintenance Emphasis within Forested Landscapes. The MA contains several private land in-holdings primarily around the historic mining community of Warren. Based on potential private housing development and mining activity, recreation use growth trends, and other uses identified below the effects to soil and water resources are likely to increase.

Non-motorized Trails, Unauthorized Roads, Closed NFS Roads, and Unauthorized Motorized Vehicle Use

Effects from non-motorized trails, unauthorized roads, closed NFS roads, and unauthorized use would continue. The MA contains 14.0 miles of non-motorized trail, 19.2 miles of closed NFS roads, and 75.6 miles of inventoried unauthorized roads.

Other Forest Service Ongoing and Reasonably Foreseeable Actions

Reasonably foreseeable actions that may contribute to cumulative effects on the soil and water resources include livestock grazing, fire suppression, firewood gathering, and dispersed recreation. The PNF has approved the Burgdorf Road Management and Abandoned Mine Reclamation Project (see Appendix D). This project's objective is to improve soil productivity and water quality through road obliteration.

Cumulative Effects Conclusion for MA 10

Currently, the majority (57 percent) of the Fall Creek/Warren MA is closed to all cross-country motorized vehicle use. All action alternatives reduce the area open to cross-country motorized use by an additional 37 percent. Approximately 6 percent (about 6,500 acres) of the area will remain open for limited access to cross-country motorized vehicles. Approximately 1,700 acres will remain open to limited access within RCAs. This limited access is along open roads and trails where the majority of cross-country motorized travel currently occurs. In all alternatives, existing problems on open roads, closed roads, and unauthorized roads will still occur, in all alternatives. None of the alternatives authorizes watershed restoration activities. Existing unauthorized roads will not be physically blocked or rehabilitated and will remain on the landscape, contributing to soil and water resource degradation. In all alternatives, watershed improvement opportunities exist when future and current NEPA projects are implemented. Opportunities, such as Burgdorf Road Management and Abandoned Mine Reclamation, will exist to improve watershed conditions through closure and decommissioning of selected unauthorized roads, when implemented. The new ATV trails identified in the Burgdorf Road Management Plan have not been implemented on-

the-ground and all ATV PDFs will be applied before these ATV trails are listed on the Travel Map.

Slight changes occur between action alternatives, based on the open or closed motorized status of roads and trails as disclosed by the Soil and Water Indicators (SWIs) in the Environmental Consequences Section. In all action alternatives there is a reduction of two-wheel motorized trails. In Alternatives C and E, Proposal 10-10 converts an open road which has s erosion and landslide problems to an ATV trail. Alternatives B would leave Proposal 10-10 in its existing open status, while Alternative D would close this road. All action alternatives would improve the soil and water resource conditions by closing an additional 37 percent of the MA to cross-country motorized travel.

Based on potential private housing development and mining activity, recreation use growth trends, and other uses identified the effects to soil and water resources associated with these activities are likely to increase. Given improvements or no change to most SWIs, changes in travel management associated with action alternatives are not expected to contribute to measurable changes in cumulative effects on the soil and water resource. One exception is the potential for an incremental increase in soil and water impacts associated with the addition of 6.4 miles of ATV/OHV trails in Alternatives C and E. However, the cumulative effect of these changes would be minimized through the application of PDFs prior to formal authorization as ATV/OHV trails.

Forest Plan Consistency

MA Objectives 1020, 1021, 1024, 1026, 1027, and 1029 address improving water quality by implementing watershed restoration activities. While outside the scope of this project, future opportunities exist to meet these objectives. Objective 1023 states: “Identify recreational camp sites or parking areas that are contributing unacceptable levels of accelerated sediment, compaction, or vegetation loss.” Future opportunities exist to inventory and rehabilitate those sites as needed.

MA 11. Upper Secesh

Table SW-25 below provides a numerical display of the SWIs. A narrative description of each indicator describes the environmental effects on the soil and water resources.

SWI 1: Percent of the MA designated open to cross-country motor vehicle use and/or limited motorized access

There is a total of 83,570 acres within the Upper Secesh MA. In Alternative A, approximately 30 percent (25,190 acres) of the MA is open to cross-country motor vehicle use and open to limited motorized access for parking and dispersed camping. In all action alternatives, a reduction of -24 percent (-19,950 to -20,260 acres) of the MA open to cross-country motor vehicle indicates an improvement to protect the soil and water resources compared with the No Action Alternative.

SWI 2: Percent (and acres) of RCAs in designated areas open to cross-country motor vehicle use and/or limited motorized access

There is a total of 14,860 acres of RCAs within the Upper Secesh MA. In Alternative A, approximately 35 percent (5,160 acres) of the RCAs are open to cross-country motor vehicle use and open to limited motorized access for parking and dispersed camping. In all action alternatives, there is a reduction of -23 percent (-3,370 to -3,470 acres) of RCA acres open to motorized cross-country vehicle use. In all action alternatives, the reduction of the RCAs open to

cross-country motor vehicle use indicates an improvement to protect the soil and water resources compared with the No Action Alternative.

Table SW-25. Effects to the Soil and Water Indicators for MA 11

MA 11: Soil and Water Indicators	Existing Condition	Change by Alternative				
		A	B	C	D	E
1. Percent (and acres) of MA designated open to cross-country motor vehicle use and/or limited motorized access.	30% 25,190 acres	0% 0 acres	-24% -19,950 acres	-24% -19,950 acres	-24% -20,260 acres	-24% -19,990 acres
2. Percent (and acres) RCAs in areas open to cross-country motor vehicle use and/or limited motorized access.	35% 5,160 acres	0% 0 acres	-23% -3,370 acres	-23% -3,370 acres	-23% -3,470 acres	-23% -3,380 acres
3. Miles of designated roads.	33.8	0.0	+0.7	+0.7	+0.7	+1.2
4. Miles of designated two-wheel motorized trails.	29.9	0.0	-0.8	-0.8	-7.1	-0.8
5. Miles of designated ATV and OHV trails.	12.9	0.0	+7.2	+7.1	0.0	+4.9
6. Miles of designated roads and motorized trails in subs w/ a high watershed vulnerability rating.	0.0	0.0	0.0	0.0	0.0	0.0
7. Miles of designated roads and motorized trails within RCAs.	23.1	0.0	+0.7	+0.6	-3.5	+0.4
8. Number of inventoried stream crossings on designated roads and motorized trails.	70	0	+1	+1	-6	+1

SWI 3: Miles of designated roads

All action alternatives would open up a total of 0.7 miles of unauthorized roads that currently lead to existing dispersed campsites. In Alternative E, Proposal 11-7 would designate a new road starting near the Ruby Meadows parking area that runs along the Secesh River. These new designations would indicate a degrade to DD and water quality.

SWI 4: Miles of designated two-wheel motorized trail

In Alternatives B, C, and E, DD and water quality would improve due to the slight (-0.8 miles) reduction of two-wheeled motorized trail. Alternative D would show a greater improvement in DD and water quality due to the reduction of 7.1 miles two-wheel motorized trails.

SWI 5: Miles of designated ATV and OHV trails

In Alternatives B, C, and E, DD and water quality would degrade from the increase in ATV trails. In Alternative D since there is no change in miles of ATV or OHV trails, there would be no change in DD and water quality.

SWI 6: Miles of designated roads and motorized trails within subwatersheds with a high watershed vulnerability rating

There are no subwatersheds with a high watershed vulnerability rating in this MA.

SWI 7: Miles of designated roads and motorized trails within RCAs

In Alternatives B, C, and E, water quality would degrade due to an increase in roads and trails in RCAs. In Alternative D, water quality would improve due to the closure of 3.7 miles of roads and trails in RCAs.

SWI 8: Number of inventoried stream crossings on designated roads and motorized trails

In Alternatives B, C and E, this indicator signifies a degrade in water quality due to the increase in motorized stream crossings. In Alternative D, this indicator signifies an improvement to water quality from closure of 6 stream crossings.

Cumulative Effects for MA 11

Management prescriptions include Active and Passive Restoration and Maintenance of Aquatic, Terrestrial, and Hydrologic Resources. State and private land in holdings make up approximately two percent of the MA. Effects on private land and from recreation are likely to increase. Effects on NFS lands should improve with implementation of Forest Plan direction to restore and maintain the aquatic and hydrologic resources.

Non-motorized Trails, Unauthorized Roads, Closed NFS Roads, and Unauthorized Motorized Vehicle Use

Effects from non-motorized trails, unauthorized roads, closed NFS roads, and unauthorized use would continue. The MA contains 5.3 miles of non-motorized trail, 9.9 miles of closed NFS roads, and 48.9 miles of inventoried unauthorized roads.

Other Forest Service Ongoing and Reasonably Foreseeable Actions

Reasonably foreseeable actions that may contribute to cumulative effects on the soil and water resources include livestock grazing, fire suppression, firewood gathering, and dispersed recreation. The PNF has five ongoing or proposed projects in the MA: Burgdorf Road Management and Abandoned Mine Reclamation, Lucky Ben Access Project, Tollar Ditch Trail 142 Reroute, Burgdorf Fire Trail Restoration, and Grouse Creek Road Relocation Project (see Appendix D).

Cumulative Effects Conclusion for MA 11

Currently, the majority (70 percent) of the Upper Secesh MA is closed to all cross-country motorized vehicle use. All action alternatives reduce the area open to cross-country motorized use by an additional 24 percent. Approximately 6 percent (about 5,000 acres) of the area will remain open for limited access to cross-country motorized vehicles. Approximately 1,700 acres will remain open to limited access within RCAs. This limited access is along open roads and trails where the majority of cross-country motorized travel currently occurs. The current Travel Plan Map includes a special condition within this MA that "All stream channels within the Upper Secesh River Basin closed to motorized use except on designated roads and trails". While this condition was clearly stated on the current Travel Map, it was often ignored and difficult to enforce. PDFs are designed to help improve popular ATV routes that are currently fording wet areas and streams. In all action alternatives, travel off of designated routes would not be allowed for any purpose in the Lake Creek area of Management Area 11.

In all alternatives, existing problems on open roads, closed roads, and unauthorized roads will still occur, in all alternatives. None of the alternatives authorizes watershed restoration activities. Existing unauthorized roads will not be physically blocked or rehabilitated and will remain on the landscape, contributing to soil and water resource degradation. In all alternatives, watershed improvement opportunities exist when future and current NEPA projects are implemented. Future opportunities exist to improve watershed conditions through closure and decommissioning of selected unauthorized roads.

New ATV trails were identified in Alternatives B, C, and E. Field review by the Forest Biologist and Hydrologist revealed implementation of PDFs may be problematic due to extensive wetlands, stream crossings, and water management concerns. Conversion of closed or unauthorized road

ATV trails in areas that are currently closed to stream crossings occur in Proposals 11-2, 11-4, 11-7, 11-10, and 11-11. The ATV trails will require extensive rehabilitation to meet prescribed PDFs. The most problematic proposals 11-10 and 11-11 were dropped out of Alternative E. All PDFs must be implemented before these new routes are placed onto the Travel Map. PDFs are expected to minimize impacts to the soil and water resources, and thus minimize the potential cumulative effects. There are no new ATV trails in Alternative D.

All action alternatives would open up a total of 0.7 miles of unauthorized roads that currently lead to existing dispersed camp sites. In Alternative E, Proposal 11-7 would designate a new road starting near the Ruby Meadows parking area that runs along the Secesh River. Because this route fords a couple of stream channels in an area closed to stream channel crossing, implementation of all PDFs would be required. PDFs are expected to improve the current unauthorized use of this route.

In all action alternatives, the Lake Creek area of Management Area 11, travel off of designated routes would not be allowed for any purpose. Alternative D would have the greatest improvement to the soil and water resources because no new ATV routes are included. Alternatives B and C, would show the least improvement until PDFs on all ATV are completed. Because of past enforcement problems, implementation of PDFs should improve the effects on the soil and water resources. Given increases in motorized designations associated with all action alternatives except Alternative D, there is a potential for incremental cumulative impacts to the soil and water resource. Given application of stated PDFs cumulative impacts to the soil and water resource would be minimized.

Forest Plan Consistency

MA Objectives 1122, 1124, and 1125 address improving water quality by implementing watershed restoration activities that reduces road related accelerated sediment. While outside the scope of this project, future opportunities exist to meet these objectives. All action alternatives would move toward the Desired Conditions for the soil and water resources by reducing the area open to cross-country motorized vehicle use.

MA 12. South Fork Salmon

Table SW-26 below provides a numerical display of the SWIs. A narrative description of each indicator describes the environmental effects on the soil and water resources.

SWI 1: Percent of the MA designated open to cross-country motor vehicle use and/or limited motorized access

There is a total of 359,560 acres within the South Fork Salmon MA. In Alternative A, approximately 10 percent (35,580 acres) of the MA is open to cross-country motor vehicle use and open to limited motorized access for parking and dispersed camping. In all action alternatives, a reduction of -6 to -7 percent (-21,640 to -23,440 acres) of the MA open to cross-country motor vehicle indicates an improvement to protect the soil and water resources compared with the No Action Alternative.

SWI 2: Percent (and acres) of RCAs in designated areas open to cross-country motor vehicle use and/or limited motorized access

There is a total of 14,860 acres of RCAs within the South Fork Salmon MA. In Alternative A, approximately 14 percent (9,780 acres) of the RCAs are open to cross-country motor vehicle use and open to limited motorized access for parking and dispersed camping. In all action alternatives, there is a reduction of -6 to -7 percent (-4,270 to -4,890 acres) of RCA acres open to

motorized cross-country vehicle use. In all action alternatives, the reduction of the RCAs open to cross-country motor vehicle use indicates an improvement to protect the soil and water resources compared with the No Action Alternative.

Table SW-26. Effects to the Soil and Water Indicators for MA 12

MA 12: Soil and Water Indicators	Existing Condition	Change by Alternative				
		A	B	C	D	E
1. Percent (and acres) of MA designated open to cross-country motor vehicle use and/or limited motorized access.	10% or 35,580 ac.	0% 0 acres	-7% -23,380 acres	-6% -21,640 acres	-7% -23,440 acres	-6% -22,310 acres
2. Percent (and acres) RCAs in areas open to cross-country motor vehicle use and/or limited motorized access.	14% or 9,780 ac.	0% 0 acres	-7% -4,830 acres	-6% -4,270 acres	-7% -4,890 acres	-7% -4,470 acres
3. Miles of designated roads.	83.1	0.0	-2.5	0.0	-2.5	-2.5
4. Miles of designated two-wheel motorized trails.	163.6	0.0	-57.3	+4.6	-57.3	-32.9
5. Miles of designated ATV and OHV trails.	8.1	0.0	+2.6	0.0	0.0	0.0
6. Miles of designated roads and motorized trails in subs w/ a high watershed vulnerability rating.	217.0	0.0	-57.0	+4.6	-59.5	-35.1
7. Miles of designated roads and motorized trails within RCAs.	92.7	0.0	-18.5	+0.2	-21.0	-8.5
8. Number of inventoried stream crossings on designated roads and motorized trails.	221	0	-38	+1	-42	-14

SWI 3 & 5: Miles of designated roads, Miles of designated ATV and OHV trails

In Alternatives B, D, and E, the DD and water quality would be improved due to the closure of 2.5 miles of road. However, the improvement in Alternative B is off-set by the degrade resulting from an additional 2.6 miles of ATV trail. Alternative C would not change for either indictor.

SWI 4: Miles of designated two-wheel motorized trail

In Alternatives B, D, and E, the DD and water quality would improve due to closure of two-wheel motorized trail. In Alternative C, increases in the extent of two-wheel motorized trails would indicate a degrade in DD and water quality.

SWI 6 & 7 & 8: Miles of designated roads and motorized trails within subwatersheds with a high watershed vulnerability rating, Miles of designated roads and motorized trails within RCAs, Number of inventoried stream crossings on designated roads and motorized trails

In Alternatives B, D, and E, these indicators are reduced and consequently water quality would improve. In Alternative C, water quality would degrade due to the increase in each of these indicators.

Cumulative Effects for MA 12

The dominant management prescriptions within the MA are Recommended Wilderness and both Active and Passive Restoration and Maintenance of Aquatic, Terrestrial, and Hydrologic Resources. State and private land in holdings make up approximately one percent of the MA. Cumulative effects on NFS lands should improve with implementation of Forest Plan direction to restore and maintain the aquatic and hydrologic Resources.

Non-motorized Trails, Unauthorized Roads, Closed NFS Roads, and Unauthorized Motorized Vehicle Use

Effects from non-motorized trails, unauthorized roads, closed NFS roads, and unauthorized use would continue. The MA contains 172.1 miles of non-motorized trail, 61.6 miles of closed NFS roads, and 2 miles of inventoried unauthorized roads.

Other Forest Service Ongoing and Reasonably Foreseeable Actions

Reasonably foreseeable actions that may contribute to effects on the soil and water resources include livestock grazing, fire suppression, firewood gathering, and dispersed recreation. The PNF is proposing the Yellow Pine Hazardous Fuels Reduction (see Appendix D) in this MA. This project is designed to offset adverse impacts to soil productivity and water quality from timber harvesting and prescribed fire, through road decommissioning and obliteration.

Cumulative Effects Conclusion for MA 12

The South Fork Salmon MA currently provides some of the most stringent protection to the soil and water resources on the Forest. A large portion of the basin has a high watershed vulnerability rating because of the steep canyon breaks and fluvial granitics of the Idaho batholith. Currently, the majority (90 percent) of the South Fork Salmon MA is closed to all cross-country motorized vehicle use. All action alternatives reduce the area open to cross-country motorized use by an additional 6 percent. Approximately 4 percent (about 13,000 acres) of the area will remain open for limited access to cross-country motorized vehicles. Approximately 5,000 acres will remain open to limited access within RCAs. This limited access is along open roads and trails where the majority of cross-country motorized travel currently occurs, but only on the McCall District (Lower SFSR). In all action alternatives, travel off of designated routes would not be allowed for any purpose on the Krassel District.

In all alternatives, existing problems on open roads, closed roads, and unauthorized roads will still occur, in all alternatives. None of the alternatives authorizes watershed restoration activities. One problem is existing closed roads in the South Fork Salmon River that is accessed by motorized trails and ATVs. Even though these roads are closed in a closed area, violations occur. For example, the closed Marten Creek Face road is used and accessed from the two wheel motorized Cougar Creek Trail. User created ATV cutoffs occurs in the closed area along the Teapot Saddle ATV trail. None of the closed roads with chronic erosion problems will be rehabilitated and will remain on the landscape, contributing to soil and water resource degradation. In all alternatives, watershed improvement opportunities exist when future and current NEPA projects are implemented. Opportunities, such as the Yellow Pine Hazardous Fuels Reduction Project, exist to improve watershed conditions through closure and decommissioning of unauthorized roads in accordance with Forest Plan direction (Forest Plan 2003: p. III-60: FRGU04).

Alternatives B, D, and E would improve the soil and water resources through reduction of designated roads and two-wheel motorized trails in subwatersheds with high vulnerability rating, within RCA, and the number of stream crossings. Based on this these alternatives are not expected to contribute to cumulative effects on the soil and water resource. Alternative C would degrade the soil and water resources through an increase in two-wheel motorized trails. Given increases in motorized designations associated with alternative C there is a potential for incremental cumulative impacts to the soil and water resource. Given application of stated PDFs cumulative impacts to the soil and water resource would be minimized.

With implementation of Alternatives B, D, and E cumulative effects on NFS lands should improve with implementation of Forest Plan direction to restore and maintain the aquatic and

hydrologic Resources. The greatest improvements occur in Alternative B and D. Alternative C would not meet this objective.

Forest Plan Consistency

MA Objectives 1234, 1235, 1236, 1237, 1238, and 1240 address watershed restoration by reducing sediment. While outside the scope of this project, future opportunities exist to meet these objectives.

Objective 1236 states: "Rehabilitate, decommission, or stabilize Forest Trail 076 (Davis Ranch Road) in the Jeanot-Rock subwatershed to reduce accelerated erosion and sedimentation." Alternatives B and D would convert the current designated (but closed under special order) two-wheeled motorized trail to a non-motorized trail. Alternative E would retain the current status with plans to develop and implement site-specific rehabilitation and stabilization to reduce erosion and sediment, and then lift the temporary closure. Alternative C would not meet this objective.

Objective 1238 states: "Identify recreational campsites, parking areas, or trails that are contributing unacceptable levels of accelerated sediment, compaction, or vegetation loss." Alternatives B, C, D, and E meet this objective by closing all areas on the Krassel Ranger District to limited motorized access for parking and dispersed camping. All parking and camping would be at designated sites.

Within the MA all action alternatives would move toward the Desired Conditions for the soil and water resources by reducing the area open to cross-country motorized vehicle use by an additional 6 to 7 percent.

MA 13. Big Creek/Stibnite

Table SW-27 below provides a numerical display of the SWIs. A narrative description of each indicator describes the environmental effects on the soil and water resources.

Table SW-27. Effects to the Soil and Water Indicators for MA 13

MA 13: Soil and Water Indicators	Existing Condition	Change by Alternative				
		A	B	C	D	E
1. Percent (and acres) of MA designated open to cross-country motor vehicle use and/or limited motorized access.	5% 5,470 ac.	0% acres	-5% -5,550 ac.	-5% -5,550 ac.	-5% -5,550 ac.	-5% -5,550 ac.
2. Percent (and acres) RCAs in areas open to cross-country motor vehicle use and/or limited motorized access.	17% 2,800 ac.	0% acres	-17% -2,800 ac.	-17% -2,800 ac.	-17% -2,800 ac.	-17% -2,800 ac.
3. Miles of designated roads.	35.1	0.0	0.0	0.0	0.0	-1.5
4. Miles of designated two-wheel motorized trails.	6.0	0.0	0.0	0.0	0.0	-6.0
5. Miles of designated ATV and OHV trails.	4.9	0.0	0.0	0.0	0.0	+4.9
6. Miles of designated roads and motorized trails in subs w/ a high watershed vulnerability rating.	8.5	0.0	0.0	0.0	0.0	0.0
7. Miles of designated roads and motorized trails within RCAs.	23.0	0.0	0.0	0.0	0.0	-1.4
8. Number of inventoried stream crossings on designated roads and motorized trails.	41	0	0	0	0	-3

SWI 1: Percent of the MA designated open to cross-country motor vehicle use and/or limited motorized access

There is a total of 100,279 acres within the Big Creek/Stibnite MA. In Alternative A, approximately 5 percent (5470 acres) of the MA is open to cross-country motor vehicle use and open to limited motorized access for parking and dispersed camping. In all Action Alternatives, none of the MA remains open to limited motorized access. Since there would be no areas along roads and trails open to limited motorized access (a 5 percent reduction) this indicator signifies an improvement to protect the soil and water resources between the No Action and all Action Alternatives.

SWI 2: Percent (and acres) of RCAs in designated areas open to cross-country motor vehicle use and/or limited motorized access

There is a total of 16,480 acres of RCAs within the Big Creek/Stibnite MA. In Alternative A, there is approximately 17 percent (2,800 acres) of the RCAs open to cross-country motor vehicle use and open to limited motorized access for parking and dispersed camping. In all Action Alternatives, none of the RCAs would remain open to limited motorized access. In all Action Alternatives, a reduction of 17 percent of the RCA acres open indicates an improvement to protect the soil and water resources over the No Action Alternative.

SWI 3 & 4: Miles of designated roads & Miles of designated two-wheel motorized trails

In Alternative B, C, and D, there would be no change in DD and water quality along the designated roads and two-wheeled motorized trails. In Alternative E, there would be an improvement by the reduction of 1.5 miles of road and 6.0 miles of trail. However, some of this is offset by the conversion of designated road and two-wheel motorized trail to 4.9 miles of ATV trail as shown in SWI 5.

SWI 5: Miles of designated ATV and OHV trails

In Alternative B, C, and D, there would be no change in DD and water quality. In Alternative E, this indicator shows a potential degrade in DD and water quality due to the increase in 4.9 miles of ATV trails. However, this is offset by the reduction of road and trail, as shown in SWIs 3 and 4.

SWI 6: Miles of designated roads and motorized trails in subwatersheds with a high watershed vulnerability rating

There is no change between any of the alternatives.

SWI 7: Miles of designated roads and motorized trails within RCAs & Number of inventoried stream crossings on designated roads and motorized trails

In Alternative E, there would be an improvement in water quality with a net reduction of 1.4 miles of motorized trail in within RCAs. Other action alternatives do not affect this indicator and thus are expected to maintain water quality.

SWI 8: Number of inventoried stream crossings on designated roads and motorized trails

In Alternative E, there would be an improvement in water quality with a net reduction of 3 inventoried stream crossings. Other action alternatives do not affect this indicator and thus are expected to maintain water quality.

Cumulative Effects for MA 13

The dominant management prescriptions within the MA are Undeveloped Recreation and Active and Passive Restoration and Maintenance of Aquatic, Terrestrial, and Hydrologic Resources. Mining related in-holdings make up approximately four percent of the MA. Based on potential

mining on private land, recreation use growth trends and other uses identified below, effects from these activities are likely to increase. Cumulative effects on NFS lands could improve with implementation of Forest Plan direction to restore and maintain the aquatic and hydrologic resources.

Non-motorized Trails, Unauthorized Roads, Closed NFS Roads, and Unauthorized Motorized Vehicle Use

Effects from non-motorized trails, unauthorized roads, closed NFS roads, and unauthorized use would continue. The MA contains 10.5 miles of non-motorized trail, 2.7 miles of closed NFS roads, and 35.2 miles of inventoried unauthorized roads.

Other Forest Service Ongoing and Reasonably Foreseeable Actions

Reasonably foreseeable actions that may contribute to cumulative effects on the soil and water resources include the fire suppression, firewood gathering, and dispersed recreation. The PNF is proposing two projects in this MA: Big Creek Hazardous Fuels Reduction and Yellow Pine Hazardous Fuels Reduction (see Appendix D). While these projects have the potential to adversely impact soil productivity and water quality, the Yellow Pine project is designed to offset any adverse effects and Forest Plan direction is to minimize and avoid effects.

Cumulative Effects Conclusion for MA 13

Currently, the all of the Big Creek MA is closed to all cross country motorized vehicle use, except for limited access. All action alternatives reduce the area open to cross-country motorized use for limited access by 5 percent. In all action alternatives, travel off of designated routes would not be allowed for any purpose on the Krassel District.

In all alternatives, existing problems on open roads, closed roads, and unauthorized roads will still occur, in all alternatives. None of the alternatives authorizes watershed restoration activities. Existing unauthorized roads will not be physically blocked or rehabilitated and will remain on the landscape, contributing to soil and water resource degradation. In all alternatives, watershed improvement opportunities exist when future and current NEPA projects are implemented. Future opportunities exist to improve watershed conditions through closure and decommissioning of selected unauthorized roads.

In Alternative B, C, and D cumulative effects shows little to no improvement to the soil and water resources. Based on this, these alternatives are not expected to contribute to measurable changes in cumulative effects on the soil and water resource. In Alternative E, Proposal 13-1converts the designation of a two-wheel trail to and ATV/OHV trail. This route is currently used this way despite the two-wheel motorized designation. Alternative E, Proposal 13-8 would close 1.5 miles of road to motorized use, which would be an improvement. Given this Alternative E is not expected to contribute to measurable changes in cumulative effects on the soil and water resource

Forest Plan Consistency

MA Objectives 1315 addresses “improving riparian vegetation and hydrologic function through decommissioning or obliterating roads within riparian areas and returning road surfaces, cuts, and fills to productivity.” While outside the scope of this project, future opportunities exist to meets this objective.

Objectives 1317 states: “Identify recreational campsites, parking areas, or trails that are contributing unacceptable levels of accelerated sediment, compaction, or vegetation loss.” Alternatives B, C, D, and E would meet this objective by closing all areas to limited motorized access. All parking would be at designated sites.

All action alternatives move toward the Desired Conditions for the soil and water resources because travel off of designated routes would not be allowed for any purpose on the Krassel District.

Irreversible and Irretrievable Commitments

None of the alternatives would have irreversible commitments to soil productivity and water quality. In all alternatives, all roads and trails are considered a Total Soil Resource Commitment (TSRC) and an existing irretrievable commitment to soil productivity. All alternatives could result in accelerated erosion and sediment delivered to streams and cause an irretrievable loss to water quality. Application of PDFs and BMPs is expected to minimize potential changes to water quality associated with proposed changes in travel management designations.

Forest Plan Consistency

Forest Plan direction for each individual Management Areas has already been addressed. In addition the three following general themes associated with Forest Plan goals, objectives, standards and guidelines are met by all alternatives except as noted below.

- Adherence to the State Nonpoint Source Management Plan is accomplished by implementing Best Management Practices (BMPs) and Soil and Water Conservation Practices to minimize erosion and sediment delivered to stream and other water bodies. BMPs are primarily met by road and trail maintenance activities. In addition, Project Design Features (PDFs) are listed in Chapter 2. These include an assessment process on all new and reconstructed roads and motorized trails and a mechanism to identify and fix problem areas. Implementation and effectiveness monitoring plans for the soil and water resources are part of the PDFs.
- Ensuring that new proposed management activities within watersheds containing 303(d) listed water bodies improve or maintain water quality is accomplished by implementing BMPs and the PDF process identified in Chapter 2.
- Conduct watershed restoration activities through implementation of the Forest Watershed and Aquatic Recovery Strategy (WARS). Restoration activities are accomplished through implementation of the WARS. While outside the scope of this project, the Travel Plan does not limit future site specific restoration opportunities.

Implementation and monitoring of site specific Project Design Features (PDFs) for any new designated motorized routes in areas currently open to cross country motorized routes would eliminate the need for any Forest Plan amendment. Implementation and monitoring of site specific Project Design Features (PDFs) for any new designated motorized routes in areas currently closed to cross country motorized routes would not require a Forest Plan amendment, if off-setting mitigation occurs in the MA.

Alternative C, Proposal 1-1, would not be consistent with the Forest Plan for protection of the soil and water resources. This proposal opens a closed system road in a closed area and designates that road open to ATV use. The problem is that there are no activities proposed in MA 1 to move toward Desired Conditions for soil and water resources. Proposal 1-1, would require a one-time, site-specific, non-significant amendment for Forest Plan Standard SWST04: “Management actions will neither degrade nor retard attainment of properly functioning soil, water, riparian, and aquatic desired conditions, except: a) Where outweighed by demonstrable short- or long-term benefits to watershed resource conditions” (Forest Plan, p. III-22)

Project Record

The *Soil and Water Specialist Report* in the Project Record is incorporated into this EIS (40 CFR 1502.21). The soil and water specialist relied on the detailed data, methodologies, analyses, conclusions, maps, references, and technical documentation in the *Soil and Water Specialist Report* to make the conclusions presented in this EIS.