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Soil Resources Specialist's Report

4 Forest Restoration Initiative

Flagstaff and Mogollon Rim Ranger Districts, Coconino National Forest
Williams and Tusayan Ranger Districts, Kaibab National Forest
Coconino County, Arizona.

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Introduction

This report is the specialist report for soil resources relevant to the proposed 4 Forest Restoration Initiative Fuels Reduction Project. The report contains the current conditions of soil and water resources within the project area, and the effects of proposed alternatives on soil resources. This report will be used for the analysis of soil resources within the 4 Forest Restoration Initiative Fuels Reduction Project Environmental Assessment.

The Four-Forest Restoration Initiative (4FRI) is a planning effort designed to restore forest resiliency and function across four National Forests in Arizona including the Coconino, Kaibab, Apache-Sitgreaves and Tonto. This environmental analysis focuses on the Coconino National Forest (hereafter referred to as Coconino NF) and the Kaibab National Forest (hereafter referred to as Kaibab NF) with a project area totaling approximately 988,764 acres.

This analysis focuses on soil resources, on the Coconino NF and Kaibab NF. It also contains information on effects to water quality. It discloses the affected environment and predicted environmental effects on soil resources from implementation of each alternative.

Structure of Report:

This Soil Specialist report analysis follows the table of contents and includes a description of the affected environment which describes the current condition of soil resources but also has information describing effects to water resources in the project area. Water resources are analyzed in detailed in another report (MacDonald, 2012). Following the description of the affected environment, a section describing the predicted environmental consequences (effects) of implementing the no action and all action alternatives to soil resources is described. Due to the scope and complexity of the project, there are numerous lengthy tables and appendixes included interpreting soil conditions and characteristics and two attachments.

Attachment #1 displays soil disturbance by treatment type, treatment area and 6th Hydrologic Unit Code (HUC) watershed. Attachment #2 displays Disturbed Water Erosion Prediction Project (WEPP) soil erosion modeling runs and Attachment #3 displays soil interpretations by 6th HUC watershed, strata and Terrestrial Ecosystem Survey (TES) map unit. Attachment #4 lists soil disturbance by 6th HUC watershed and analyzes cumulative effects soil disturbances. Additional maps detailing treatment areas and photos can be found in the fire, vegetation and forestry specialist reports.

Purpose and Need

The purpose and need for proposing an action was determined by comparing the objectives and desired conditions in the Coconino NF and Kaibab NF Land Resource and Management Plans (forest plans) to the existing conditions related to forest resiliency and forest function. Where plan information was dated or not explicit, local research and the best available science was utilized. The results of the comparison are displayed in narrative, tables, and photographs; in summary, there is a need for:

- moving vegetation structure and diversity towards desired conditions by creating a mosaic of interspaces and tree groups of varying sizes and shapes

- moving towards a forest structure with all age and size classes represented as identified in the 1996 forest plan amendment for northern goshawk and Mexican spotted owl habitat
- managing for old age (pre-settlement) trees such that old forest structure is sustained over time across the landscape by moving towards forest plan old growth standards of 20 percent at a forest EMA scale
- improving forest health by reducing the potential for stand density-related mortality and by reducing the level of dwarf mistletoe infection
- moving towards desired conditions for vegetation diversity and composition by maintaining and promoting Gambel oak, aspen, grasslands, and pine-sage
- moving towards the desired condition of having a resilient forest by reducing the potential for undesirable fire behavior and its effects
- moving towards the desired condition of maintaining the mosaic of tree groups and interspaces with frequent, low-severity fire by having a forest structure that does not support wide-spread crown fire
- move towards desired conditions for soils and watersheds by protecting soil productivity and improving soil and watershed function
- move toward desired conditions for soils and watersheds to reduce the threat to life, property, soil productivity and water quality from post wildfire storm events (flooding and debris flows)
- moving toward desired conditions in riparian ecosystems by having springs and seeps function at, or near, potential
- moving towards desired conditions for degraded ephemeral channels by restoring channel function
- moving towards restoring select closed and unauthorized roads to their natural condition by restoring soil function and understory species

Desired Conditions for Soil and Watersheds

- Long-term soil productivity is protected by maintaining or improving soil condition and function.
- Soil condition and function is maintained or improved toward satisfactory.
- The vegetative ground cover is adequate to protect against accelerated erosion resulting in maintained soil stability, soil and vegetative productivity. Soil loss is below tolerance, and no visible signs of excessive erosion are present.
- Adequate vegetative ground cover is present to reduce the threat to life, property, soil productivity and water quality from post wildfire storm events (flooding and debris flows).
- Surface soil hydrologic soil function is in satisfactory condition with well aggregated, granular surface soil structure and tubular pores with sufficient porosity to effectively infiltrate water.

- Soil nutrient cycling is in satisfactory condition. Vegetative ground cover, plant basal area, species composition and forage productivity and herbaceous understory approaches natural conditions in PPC.
- Forests are restored at the landscape-scale that will provide for sustainable, forest health, wildlife and plant diversity while at the same time maintain and improve long-term soil productivity. The resultant forests are fire-adapted with the majority of fires occurring as ground fires at low fire severity to watershed.
    - Watershed function is maintained or improved towards functioning properly and exhibit high geomorphic, hydrologic, and biotic integrity relative to their natural potential condition. Fire regime condition class and tree density is reduced and moves towards FRCC 1 (historical range), unneeded roads are decommissioned or restored to natural condition, soil and riparian condition and function is improved and moving towards satisfactory and properly functioning.

Relevant Laws, Regulations and Policy

All alternatives are designed to guide the Coconino NF's management activities in meeting all applicable Federal and State laws, regulations, and policies.

Clean Water Act (see Federal Water Pollution Control Act)

Emergency Flood Prevention (Agricultural Credit Act) Act of August 4, 1978 - Authorizes the Secretary of Agriculture to undertake emergency measures for runoff retardation and soil-erosion prevention, in cooperation with land owners and users, as the Secretary deems necessary to safeguard lives and property from floods, drought, and the products of erosion on any watershed whenever fire, flood, or other natural occurrence is causing or has caused a sudden impairment of that watershed.

Federal Land Policy and Management Act of October 21, 1976 - Requires that public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values; that, where appropriate, will preserve and protect certain public lands in their natural condition; that will provide food and habitat for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use. Also states that the United States shall receive fair market value of the use of the public lands and their resources unless otherwise provided for by law.

Federal Water Pollution Control Act and Amendments of 1972 (Clean Water Act) - Enacted to restore and maintain the chemical, physical, and ecological integrity of the Nation's waters. Provides for measures to prevent, reduce, and eliminate water pollution; recognizes, preserves, and protects the responsibilities and rights of States to prevent, reduce, and eliminate pollution, and to plan the development and use (including restoration, preservation, and enhancement) of land and water resources; and provides for Federal support and aid of research relating to the prevention, reduction, and elimination of pollution, and Federal technical services and financial aid to state and interstate agencies and municipalities for the prevention, reduction, and elimination of pollution.

Established goals for the elimination of water pollution; required all municipal and industrial wastewater to be treated before being discharged into waterways; increased Federal assistance for municipal treatment plant construction; strengthened and streamlined enforcement policies; and

expanded the Federal role while retaining the responsibility of States for day-to-day implementation of the law.

Federal Water Project Recreation Act of July 9, 1965 - Requires that recreation and fish and wildlife enhancement opportunities be considered in the planning and development of Federal water development.

Forest and Rangeland Renewable Resources Planning Act of August 17, 1974 - Directs the Secretary of Agriculture to prepare a Renewable Resource Assessment every ten years; to transmit a recommended Renewable Resources Program to the President every five years; to develop, maintain, and, as appropriate, revise land and resource management plans for units of the National Forest System; and to ensure that the development and administration of the resources of the National Forest System are in full accord with the concepts of multiple use and sustained yield.

Organic Administration Act of June 4, 1897 - Authorizes the President to modify or revoke any instrument creating a national forest; states that no national forest may be established except to improve and protect the forest within its boundaries, for the purpose of securing favorable conditions of water flows, and to furnish a continuous supply of timber for the use and necessities of citizens of the United States. Authorizes the Secretary of Agriculture to promulgate rules and regulations to regulate the use and occupancy of the national forests.

Multiple-Use Sustained-Yield Act of June 12, 1960 - States that it is the policy of Congress that the national forests are established and shall be administered for outdoor recreation, range, timber, watershed, and wildlife and fish purposes, and authorizes and directs the Secretary of Agriculture to develop and administer the renewable surface resources of the national forests for the multiple use and sustained yield of products and services.

National Environmental Policy Act of January 1, 1970 - Directs all Federal agencies to consider and report the potential environmental impacts of proposed Federal actions, and established the Council on Environmental Quality.

National Forest Management Act of October 22, 1976 - The National Forest Management Act reorganized, expanded, and otherwise amended the Forest and Rangeland Renewable Resources Planning Act of 1974, which called for the management of renewable resources on National Forest System lands. The National Forest Management Act requires the Secretary of Agriculture to assess forest lands, develop a management program based on multiple-use, sustained-yield principles, and implement a resource management plan for each unit of the National Forest System. It is the primary statute governing the administration of National Forests.

Safe Drinking Water Amendments of November 18, 1977 - Amended the Safe Drinking Water Act to authorize appropriations for research conducted by the Environmental Protection Agency relating to safe drinking water; Federal grants to states for public water system supervision programs and underground water source protection programs; and grants to assist special studies relating to the provision of a safe supply of drinking water.

Soil and Water Resources Conservation Act of November 18, 1977 - Provides for a continuing appraisal of the United States' soil, water and related resources, including fish and wildlife habitats, and a soil and water conservation program to assist landowners and land users in furthering soil and water conservation.

Surface Mining Control and Reclamation Act of August 3, 1977 - Authorizes the Secretary of Agriculture to enter into agreements with landowners, providing for land stabilization, erosion, and sediment control, and reclamation through conservation treatment, including measures for the conservation and development of soil, water, woodland, wildlife, and recreation resources, and agricultural productivity of such lands.

Travel Management Rule - On December 9, 2005, the Forest Service published the TMR. The agency rewrote direction for motor vehicle use on National Forest Service (NFS) lands under 36 CFR, Parts 212, 251, and 261, and eliminated 36 CFR 295. The rule was written to address at least in part the issue of unmanaged recreation. The rule provides guidance to the Forest Service on how to designate and manage motorized recreation on the Forests. The rule requires each National Forest and Grassland to designate those roads, motorized trails, and Areas that are open to motor vehicle use.

Water Quality Improvement Act of April 3, 1970 - Amends the prohibitions of oil discharges, authorizes the President to determine quantities of oil which would be harmful to the public health or welfare of the United States; to publish a National Contingency Plan to provide for coordinated action to minimize damage from oil discharges. Requires performance standards for marine sanitation device and authorizes demonstration projects to control acid or other mine pollution, and to control water pollution within the watersheds of the Great Lakes. Requires that applicants for Federal permits for activities involving discharges into navigable waters provide state certification that they will not violate applicable water quality standards.

At this time, there is uncertainty whether a National Pollution Discharge Elimination System (NPDES) permit under Section 402 of the Act would be required for stormwater discharges from logging roads associated with this project. Although the Environmental Protection Agency has published a final rule exempting logging road stormwater discharge from NPDES permitting requirements, the United States Supreme Court is currently reviewing the matter. Until the Supreme Court rules, it will be uncertain whether a NPDES permit is required for this project.

Watershed Protection and Flood Prevention Act of August 4, 1954 - Establishes policy that the Federal government should cooperate with states and their political subdivisions, soil or water conservation districts, flood prevention or control districts, and other local public agencies for the purposes of preventing erosion, floodwater, and sediment damages in the watersheds of the rivers and streams of the United States; furthering the conservation, development, utilization, and disposal of water, and the conservation and utilization of land; and thereby preserving, protecting, and improving the Nation's land and water resources and the quality of the environment.

Alternatives

The following table summarizes the alternatives within this analysis:

Table 1. Summary of Alternatives Analyzed in Detail

Proposed Activity	Alternative A (No Action)	Alternative B (Proposed Action)	Alternative C	Alternative D
Vegetation mechanical treatment (acres)	0	388,489	434,001	388,489
Prescribed Fire (acres)	0	587,923	593,211	178,790
Mexican spotted owl protected activity center (PAC) habitat treatments	N/A	Mechanically thin up to 16 inch dbh in 18 PACs (excluding nest areas) Prescribe burn 72 MSO PACs (excluding nest areas	Mechanically thin up to 18 inch dbh in 18 PACs, Prescribe burn 72 (56 in core areas) MSO PACs including nest areas, Prescribe burn 16 MSO PACs excluding nest areas	Mechanically thin up to 16 inch dbh in 18 PACs (excluding nest areas)
Springs/Seeps Restored (number)	0	74	Same as alternative B	
Springs protective fence construction (miles)	0	4	Same as alternative B	
Aspen protective fencing (miles)		Up to 82	Same as alternative B	
Ephemeral stream restoration (miles)	0	39	Same as alternative B	
Existing road decommission* (miles)	0	770	Same as alternative B	
Unauthorized route decom	0	134	Same as alternative B	
Temporary road construction and decom.	0	517	Same as alternative B	
Road Reconstruction-Improvement (miles)		Up to 30	Same as alternative B	
Road recon/reloc. (miles)	0	Up to 10	Same as alternative B	

Methodology and Analysis Process

- The Terrestrial Ecosystem Survey (TES) of the Coconino (USDA, 1995) and Kaibab (USDA, 1989) national forests were used for soil and potential plant community (PPC) (ecological unit) interpretations. TES map units were aggregated into strata for landscape level analysis that have similar soils and PPCs. Strata aggregation stems from a collaborative effort between Coconino and Kaibab National Forest soil scientists and the Ecological Restoration Initiative Soil Scientist Dave Brewer. Aggregations were reviewed by the R3soil scientists and adjusted to the current strata.

- The strata were used to identify soil types, suitabilites, hazards and limitations and PPC potentials to design 4-FRI silvicultural treatments and identify necessary BMPs to implement.

- Limitations and accuracy of data including their use to determine soil suitability, hazards and limitation for timber harvest and other management actions are described in the Soils Affected Environment chapter.

- Analysis is by treatment type, strata and 6th hydrologic unit code (HUC) watershed.

- Analysis by restoration unit or restoration subunit (RSU) was considered but not used because effects to soil and water resources (especially water flow) is better expressed at the watershed level rather than artificial boundaries used in the RSU.

- Water Erosion Prediction Project (WEPP) erosion models were used with accuracy plus or minus 50 percent. Although the accuracy seems high, the values generated from the model are believed to be consistent across alternatives and useful in comparing alternatives. The disturbed WEPP interface was used becaue it can model differences in vegetative gournd cover predicted from timber harvest activities and low, moderate and high burn severity soils across watersheds. Disturbed WEPP is designed to predict runoff and sediment yield from undisturbed and harvested forests and prescribed and wildfires. The WEPP (USDA 2006) model can be found online at http://forest.moscowfsl.wsu.edu/fswepp/.

- Assumptions made for mechanical and fire disturbance, erosion modeling. The analysis of environmental effects compares soil disturbance and soil erosion above tolerable soil loss amongst each alternative.

- Proposed mechanical treatments were aggregated into 5 major treatments types with corresponding soil disturbances assigned based on past observations, aerial photo interpretive estimates and monitoring data from similar harvesting techniques. Acres and percent of soil disturbance by treatment type, 6th HUC watershed and treatment area wide and acres of soil condition and productivity improved, maintained and protected and relative change in watershed function are the units of measure used to compare each alternative in this analysis. The treatment types and corresponding averages of soil disturbance carried forward in this analysis are the following:

    1. **Grassland Restoration:** Disturbance is predicted at about 1-5 percent and 3 percent used in calculation of soil disturbance.

2. **Ponderosa Pine Restoration Higher Intensity Mechanical**: Includes all WUI and 40-55 cover value treatments. Disturbance is predicted at 10-20 percent and the midpoint of 15 percent is used.

3. **Ponderosa Pine Restoration Lower Intensity Mechanical**: Includes all treatments less than 40-55 cover value and pine sage treatments and owl or goshawk sensitive treatment sites where thinning is proposed. Disturbance is predicted at 10-15 percent and 12 percent is used.

4. **Savanna**: Disturbance is predicted at 10-20 percent and the midpoint of 15 percent is used.

5. **Aspen**: Disturbance is predicted at 10-20 percent and the midpoint of 15 percent is used.

Proposed fire treatments analyzed include prescribed fire, managed fire and wildfire. Acres of potential high severity burns by treatment type, 6th HUC watershed and treatment area wide are compared by alternative. Assumptions made to predict acres that would be burned in the high severity class include the following:

1. Prescribed and managed fire would result in 1-3 percent burning in high severity. This is based on recent managed fire data averages from Coconino national forest BAER assessments (2009-2011 in office files) and (Lata, 2013 and per. com. Mary Lata, 2/2012).

2. Wildfires would result in about 33 percent high burn severity. This is based on (Lata, Fire Specialist Report, 2013) and recent BAER assessments on the Coconino National Forest

Proposed road treatments and channel restoration acres were calculated by treatment type and 6th HUC watershed and included in overall determination of soil disturbance.

Units of Measure

The units of measure for soil resources will be displayed for the treatment area (about 595,000) and for the entire 6th HUC watershed and by alternative for soil productivity and watershed function. The units of measure are:

- Acres and percent of treatment area and 6th HUC watershed with soil disturbance from mechanical activities and equipment use.

- Acres and percent of treatment area and 6th HUC watershed with soil disturbance from potential high severity burns.

- Total soil disturbance in acres and percent of treatment area and 6th HUC watershed from both mechanical activities and potential high burn severity. With that being said, adverse effects to soil and water resources are expected to be mitigated and reduced through the use of resource protection measures (BMP's) and through sequencing treatments and prescribed fires temporally (at different times).

- Percent of treatment area with mechanical and fire treatments resulting in soil erosion above soil tolerable levels (threshold). For fire treatments, two scenarios are analyzed.

    1. 100 percent acres burned in high severity and

    2. 33 percent acres burned in high severity. 33 percent is a more realistic number of acres (33 percent) calculated by fire modeling (Lata, fire specialist report, 2013), and recent data from several resource benefit fires on the Coconino NF).

- Acres of soil condition and productivity improved, maintained and protected.

- Relative change in watershed function (improved and maintained).

The No Action (Alt A) assumes potential disturbance resulting from high severity fires. Alt A does not directly cause soil disturbance because no ground disturbance would occur.

For water quality measures, no physical stream measurements will be taken to determine water quality. A narrative description will describe the effects to water quality by Alternative identifying the most current water quality status of perennial waters including streams and lakes as identified by ADEQ.

Resource Protection Measures

Resource protection measures listed below include references to the standard contract clauses (BT and CT) Forest Service Timber Sale Contract (TSC) and to Best Management Practices (BMP's) the Soil and Watershed Conservation Practices Handbook (USDA 1991a). Resource protection measures are put in place to minimize nonpoint source pollution as outlined in the intergovernmental agreement between the Arizona Department of Environmental Quality and the Southwestern Region of the Forest Service (ADEQ 2010). Note that no resource protection measures are needed for the No Action Alternative since no ground disturbance would occur.

Table 2. Resource Protection Measures Required for All Action Alternatives

BMP #	Mitigation	Objective
BMP's Common To All Activities		
BMP #1	Implement Best Management Practices prior to project implementation.	To minimize impacts to soil and water resources from project implementation, to minimize non-point source pollution, to adhere to the Clean Water Act, and to adhere to the intergovernmental agreement between Region 3 of the Forest Service and the Arizona Department of Environmental Quality.

BMP #	Mitigation	Objective
BMP #2	Minimize mechanical operations when ground conditions are such that soil compaction can occur. All activities should be limited/restricted to when soils are dry or frozen. If compaction occurs, mitigate through ripping, seeding and covering compacted areas with slash.	To minimize soil compaction, soil detachment and sediment transport. To maintain long-term soil productivity.
BMP #3	All fueling of vehicles will be done on a designated protected, upland site. If more than 1320 of gallons of petroleum products are to be stored on site above ground or if a single container exceeds 660 gallons, then a spill prevention control and countermeasures plan (SPCC) will be prepared as per 40 CFR 112).	To prevent contamination of waters from accidental spills.
BMP #4	The following applies to any personnel implementing ground-disturbing actions: Prior to moving off-road equipment onto a project area, contractor shall identify the location of the equipment's most recent operation. Contractor shall not move any off-road equipment that last operated in an area infested with one or more invasive species of concern onto sale area without having cleaned such equipment of seeds, soil, vegetative matter, and other debris that could contain or hold seeds, and having notified Forest Service, as provided in (iii). If the location of prior operation cannot be identified, then contractor shall assume that the location is infested with invasive species of concern. If the contractor has worked in areas where potential chytrid fungus could occur, contractor shall assume chytrid fungus is present and must disinfect equipment prior to work adjacent to water bodies. (i – intentionally omitted) (ii) Prior to moving Off-road equipment from a cutting unit or cutting area that is shown on contract area or sale area map to be infested with invasive species of concern to, or through any other area that is shown as being free of invasive species of concern, or infested with a different invasive species, contractor shall clean such equipment of seeds, soil, vegetative matter, and other debris that could contain or hold seeds and/or disinfect as necessary, and shall notify the Forest Service, as provided in (iii). (iii) Prior to moving any off-road equipment subject to the cleaning and disinfecting requirements set forth above, contractor, shall advise Forest Service of its cleaning measures and make the equipment available for inspection. Forest Service shall have 2 days, excluding weekends and Federal holidays, to inspect equipment after it has been made available. After satisfactory inspection or after such 2 day period, contractor may move the equipment as planned. Equipment shall be considered clean when a visual inspection does not disclose seeds, soil, vegetative matter, and other debris that could contain or hold seeds. Contractor shall not be required to disassemble equipment unless so directed by the Forest Service after inspection. (iv) If contractor desires to clean off-road equipment on National Forest land, such as at the end of a project or prior to moving to, or through an area that is free of invasive species of concern, contractor shall obtain prior approval from contracting officer as to the location for such cleaning and measures, if any, for controlling impacts.	To minimize the spread of non-native speicies

BMP #	Mitigation	Objective
BMP #5	If construction crews are to live on-site, then an approved camp and suitable sanitation facilities must be provided.	To protect surface and subsurface water from unacceptable levels of bacteria, nutrients and chemical pollutants.
Prescribed burning and managed fires		
BMP #6	On areas to be prescribed burned, fire prescriptions should be designed to minimize soil temperatures over the entire area. High severity fire should occur on 10 percent or less of the entire area. Fire prescriptions should be designed so that soil and fuel moisture temperatures are such that fire severity is minimized and soil health and productivity are maintained. If containment lines are put in place, rehabilitate lines after use by either rolling berm back over the entire fireline, spreading slash across the fireline or waterbar the fireline. If line is only to be waterbarred, disguise the first 400 feet of line to discourage use as a trail.	To maintain long-term soil productivity and minimize sediment delivery from containment lines.
BMP #7	On areas to be prescribed burned, manage for 5-7 tons/acre of coarse woody debris in ponderosa pine be left on-site after the prescribed burns to maintain long-term soil productivity on areas to be burned except in areas of identified WUI treatments. Within the pinyon-juniper cover type, snags would be managed for 1 per acre over 75 percent of the area and coarse woody debris (CWD) would be managed for an after treatment average of 1 to 3 tons per acre. Where available, a portion of the CWD would include two logs ≥10 inches and ≥10 feet in length.	To maintain long-term soil productivity.
BMP #8	On areas to be prescribed burned, establish filter strips (also known as streamside management zones. These stream reaches will be designated as protected streamcourse The following are recommendations to protect streamcourses. **Riparian streamcourse:** Severe erosion hazard: 120 feet on each side of streamcourse. Moderate erosion hazard: 100 feet on each side of streamcourse. Slight erosion hazard: 70 feet on each side of streamcourse. **Non-riparian streamcourse:** Severe erosion hazard: 100 feet on each side of streamcourse. Moderate erosion hazard: 70 feet on each side of streamcourse. Slight erosion hazard: 35 feet on each side of streamcourse. Do not ignite fuels within this buffer area. Some creep may occur into the buffer.	To minimize sediment and/or ash delivery into drainages and maintain water quality.

BMP #	Mitigation	Objective
BMP #9	Intentionally left blank.	
BMP #10	All burning will be coordinated daily with the Arizona Department of Environmental Quality (ADEQ). Burning will not take place on any portion of the project without prior approval from ADEQ. Coordination with ADEQ will take place through the Kaibab and Coconino National Forest Zone Dispatch Center and the Prescribed Burning Boss.	To ensure that smoke management objectives are met.
Road Reconstruction and Channel Restoration		
BMP #11	Complete all required permitting (404 permits) and Water Quality Certification (if necessary), prior to project implementation.	To comply with Clean Water Act provisions.
BMP #12	Site rehabilitation on upland sites for stream channel and road reconstruction projects where ground disturbance occurs: Seed at 5 pounds/acre with native, certified weed free seed mix. Potential vegetation for individual sites should utilize the Kaibab and Coconino National Forest Terrestrial Ecosystem Survey to identify species to be utilized. Where feasible, protect site with slash spread across the disturbed area to create microclimates and protect from grazing ungulates.	To minimize soil erosion and minimize noxious weed spread and mitigate severe erosion hazard.
BMP #13	Site rehabilitation on riparian sites for stream channel and road reconstruction projects where ground disturbance occurs: Seed at 5 pounds/acre with certified weed free native seed mix to rehabilitate the site and minimize impacts of noxious weeds. Potential vegetation for individual sites should utilize the Kaibab and Coconino National Forest Terrestrial Ecosystem Survey to identify species to be utilized. Where feasible, protect site with a variety of methods (e.g., ungulate proof fence, spreading slash etc.).	To comply with State and Federal water quality standards by minimizing soil erosion through the stabilizing influence of vegetation ground cover. Minimize noxious weed spread.
BMP #14	Install silt fences and/or waddles downstream from ground-disturbing activities in stream channels to minimize the chance of sediment being lost downstream during construction and until revegetation is completed.	To comply with State and Federal water quality standards by minimizing sediment delivery to drainages.

BMP #	Mitigation	Objective
BMP #15	Provide site protection on newly disturbed soils (e.g. hydromulch, erosion mat, spread slash etc.) in channel restoration and road reconstruction sites on all sites as needed and where feasible.	To comply with State and Federal water quality standards by minimizing sediment delivery to drainages, minimize impacts on severe erosion hazard soils, and to create microclimate for regeneration of grass/forb community and minimize noxious weed spread.
BMP #16	Bring rock material from a local upland site to any headcut drop structures that may be installed in channel restoration projects.	To minimize disturbance in drainage systems and minimize sediment production within channel.
BMP #17	Site rehabilitation on disturbed sites at and stream channel shaping on previously obliterated roads: Site rehabilitation consists of several revegetation methods, such as, but not limited to: 1) Store sod removed from the initial ground disturbance and replace the sod from the top of the bank on the disturbed site; 2) Seed with a native seed mix (see BMP's above) 3) Protect site with slash spread across the disturbed area to create microclimates and protect from grazing ungulates. Slash placement will be limited to the upper 2/3 of the bank to limit transport downstream of woody material; 4) Fence out ungulates for 1 to 2 years (or until the site has re-established); 5) consider mycorhizal inoculum on severely disturbed sites where no topsoil is left, and, 6) install erosion mat.	To comply with State and Federal water quality standards by minimizing soil erosion through the stabilizing influence of vegetation ground cover. Minimize noxious weed spread.
BMP #18	Do not borrow road fill or embankment materials from the stream channel or meadow surface on road maintenance projects. End-load all material hauled on-site and compact fill.	To minimize disturbance in drainage systems and minimize sediment production within channel.
BMP #19	Where feasible, relocate roads out of filter strips into an upland position. If this is not feasible, use riprap or velocity checks to stabilize or disperse outfall on road maintenance projects when roads are located within filter strips.	To minimize sediment delivery into drainage and to minimize disturbance in drainage systems and minimize sediment production within channel.
BMP #20	At riparian stream reach restoration sites, restore riparian dependent grasses through 1) seeding of native species, 2) planting plugs of rushes, sedges, and spike rushes to improve success of regeneration efforts. Fence with ungulate proof fencing for 1 to 2 years (or until plants are established) if grazing is inhibiting regeneration efforts.	To comply with State and Federal water quality standards by minimizing soil erosion through stabilization of ground cover. Minimize noxious weed spread.
BMP #21	On areas that have had roads previously obliterated and the remaining roadbed will be removed, add slash/or erosion mat and seed to the disturbed areas.	To add surface roughness and to comply with State and Federal water quality standards by minimizing soil erosion through stabilization of ground cover and to diminish the impact of the first rain event and to speed recovery of the site.

BMP #	Mitigation	Objective
Springs and seeps		
BMP #22	At spring restoration sites, restore riparian dependent species through 1) seeding of native species, 2) planting plugs/cuttings of native plants to improve success of regeneration efforts. Fence with ungulate proof fencing for 1 to 2 years (or until plants are established) if grazing is inhibiting regeneration efforts.	To comply with State and Federal water quality standards by minimizing soil erosion through stabilization of ground cover. Minimize noxious weed spread.
Harvesting operations		
BMP #23	Do not blade roads when the road surface is too dry. If the road surface is too dry, a water truck can apply water, or the project can be scheduled for when adequate moisture occurs to complete the project.	To minimize sediment detachment and to minimize impacts on .severe erosion soils
BMP #24	In grassland restoration sites, limit skidding and designate skid trails if wood is to be removed. Where material is not to be removed, do not skid logs in meadows and lop and scatter is the preferred method of treating slash. Do not machine pile within meadows. If skidding has to occur across a riparian or non-riparian streamcourse, designate any crossing prior to skidding.	To minimize impacts to streams and soils in meadows from tree harvesting operations.
BMP #25	Skid trails and obliterated roads will have slash placed on the trail or cross-ditched (waterbarred) to break the energy flow of water. Placing slash on skid trails is the preferred method to dissipate the energy flow of water. Waterbars are only to be implemented with equipment with an articulating blade (no skidders) or by hand.	To minimize soil erosion and maintain soil productivity. and to minimize impacts on .severe erosion soils
BMP #26	Landing locations will be in upland positions and out of meadows, riparian and non-riparian filter strips.	To minimize sediment delivery into drainage. and to minimize impacts on .severe erosion soils
BMP #27	Mechanical harvest or mechanical fuel treatment are only allowed on Cinder Cones greater than 25 percent slope with designated skid trails and slash mats placed on the skid trails. On other sites, mechanized harvesting can occur up to 40 percent slopes.	To maintain long-term soil productivity on slopes with severe erosion hazard potential
BMP #28	Designated skid trails and log landings will be required within the Integrated Resource Service Contract (BMP 24.18 in FSH 2509.22) on all cutting units. Skid trail design should not have long, straight skid trails that would direct water flow. Skid trails should also be located out of filter strips (exceptions are at approved crossings).	To minimize the number of acres disturbed and to minimize impacts on .severe erosion soils.
BMP #29	Felling to the lead will be required within the Integrated Resource Service Contract (IRSC) to minimize ground disturbance from skidding operations (**BMP 24.18**).	Felling of timber should be done to minimize ground disturbance from skidding operations and to minimize impacts on .severe erosion soils.

BMP #	Mitigation	Objective
BMP #30	The IRSC outlines the timing and application of erosion control methods to minimize soil loss and sedimentation of streamcourses. Seed mix can include any of the following certified weed free native species at a minimum of 5 lbs./acre pure live seed: Potential vegetation for individual sites should utilize the Kaibab and Coconino National Forest Terrestrial Ecosystem Survey to identify species to be utilized. Corresponding BMP's from FSH 2509.22 to minimize soil loss and sedimentation of include 24.13, 24.21, 24.22, 24.23, 24.24, and 24.25. The preferred erosion control method on the skid trails in the harvest areas will be by spreading slash. Other acceptable erosion control measures include, but are not limited to, waterbarring (waterbars should not be more than two feet deep and need at least a ten foot leadout. Waterbars are only to be implemented with equipment with an articulating blade (no skidders) or by hand.), removing berms, seeding, mulching and cross-ripping. Erosion control after skidding operations must be timely to minimize the effects of log skidding.	Minimize soil loss and sedimentation of streamcourses from skidding operations and to minimize noxious weed spread and re-establish native vegetation and to minimize impacts on .severe erosion soils
BMP #31	Road drainage is controlled by a variety of methods (BMP 41.14), including rolling the grade, insloping outsloping, crowning, water spreading ditches, and contour trenching. Sediment loads at drainage structures can be reduced by installing sediment filters, rock and vegetative energy dissipaters, and settling ponds. Design of roads is included in the transportation plan of the IRSC and T-specs.	To minimize soil movement and maintain water quality and to minimize impacts on .severe erosion soils.
BMP #32	Road maintenance (BMP 41.25) through the IRSC should require prehaul and post haul maintenance on all roads to be used for haul.	To minimize soil movement and maintain water quality. and to minimize impacts on severe erosion soils.
BMP #33	The designation of filter strips (also known as streamside management zones) minimizes on-site soil movement from timber harvest activities along streamcourses (BMP 24.16). These stream reaches will be designated as protected streamcourses. Locations of protected streamcourses are included in the individual Task Order Maps and will be designated with a protected streamcourse designation. The following are recommendations to protect streamcourses within the proposed tree harvest units in relation to riparian and non-riparian streamcourses. The guidelines for filter strip designation are as follows: **Riparian streamcourse:** Severe erosion hazard: 120 feet on each side of streamcourse. Moderate erosion hazard: 100 feet on each side of streamcourse. Slight erosion hazard: 70 feet on each side of streamcourse. **Non-riparian streamcourse:** Severe erosion hazard: 100 feet on each side of streamcourse. Moderate erosion hazard: 70 feet on each side of streamcourse.	Filtering sediment and/or providing bank stability on all streamcourses and to minimize impacts on .severe erosion soils To implement the Oak Creek E. Coli TMDL and Lake Mary Region Mercury TMDL and to filter sediment and/or provide bank stability.

BMP #	Mitigation	Objective
	Slight erosion hazard: 35 feet on each side of streamcourse. Accepted harvest activities within riparian and non-riparian filter strips include mechanical and conventional tree felling and limited skidding on designated skid trails and not across streamcourses. Landings, decking areas, machine piles, and roads (except at designated crossings) are planned outside of riparian and non-riparian filter strips.	
BMP #34	Intentionally left blank.	
BMP #35	Manage for 5 to 7 tons per acre of coarse woody debris in ponderosa pine sites that will be left on-site on all cutting unit sites except in areas of identified WUI treatments.	To promote long-term soil productivity.
BMP #36	Mechanical crushing of lopped slash can only occur on 0-25 percent slopes.	To incorporate slash into the soil to promote long-term soil productivity.
BMP #38	Identify landings, staging area for heavy equipment and sites for any in woods processing sites outside of filter strips and meadows. Sites will be rehabilitated after use by methods such as, but not limited to: 1) ripping to remove compaction, 2) seeding with certified weed free native seed to 5 lbs per acre. Potential vegetation for individual sites should utilize the Kaibab and Coconino National Forest Terrestrial Ecosystem Survey to identify species to be utilized; and, 3) spreading of slash to disguise the site and provide for a mulch for seeds.	To minimize and mitigate impacts from activities that compact sites and to restore long-term soil productivity and to minimize impacts on .severe erosion soils.
BMP #39	Within the pinyon-juniper cover type, snags would be managed for 1 per acre over 75 percent of the area and coarse woody debris (CWD) would be managed for an after treatment average of 1 to 3 tons per acre. Where available, a portion of the CWD would include two logs ≥10 inches and ≥10 feet in length (Huffman per. Com from Brewer, 2008).	To promote long-term soil productivity.

Desired Conditions

- Long-term soil productivity is protected by maintaining or improving soil condition and function.
- Soil condition and function is maintained or improved toward satisfactory.
- The vegetative ground cover is adequate to protect against accelerated erosion resulting in maintained soil stability, soil and vegetative productivity. Soil loss is below tolerance, and no visible signs of excessive erosion are present.
- Surface soil hydrologic soil function is in satisfactory condition with well aggregated, granular surface soil structure and tubular pores with sufficient porosity to effectively infiltrate water.
- Soil nutrient cycling is in satisfactory condition. Vegetative ground cover, plant basal area, species composition and forage productivity and herbaceous understory approaches natural conditions in PPC.

- Forests are restored at the landscape-scale that will provide for sustainable, forest health, wildlife and plant diversity while at the same time maintain and improve long-term soil productivity. The resultant forests are fire-adapted with the majority of fires occurring as ground fires at low fire severity to watershed.

Comparison of Alternatives and Summary of Environmental Effects

This section provides a tabular and narrative summary and comparison of the predicted environmental effects to soils (soil disturbance and erosion above tolerable soil loss) of implementing each alternative in the treatment area (approximately 590,000 acres depending on alternative). All treatment acres are approximate. Total treatment acres in other specialist reports may be slightly different depending on GIS processing but are within about 200 acres or .03 percent. A threshold of 15 percent aerial extent disturbance is assigned as a guideline where soil impairment and productivity may be appreciably reduced. Past direction from FSM 2509.18-91-1 (now superceeded by FSM 2550) suggested 15% as a threshold where soil productivity may be appreciably reduced. Current direction (FSM 2550) recommends the soil quality standard or threshold be set by the Interdisciplinary Team (IDT) and the technical reference Soil Disturbance Field Guide (August, 2009) recognizes the importance the extent of soil disturbance has on soil productivity.

Based on past and current FSM direction as well as the Soil Disturbance Protocol technical reference and observations made in recent hazardous fuel reduction projects, the 4-FRI IDT determined that the 15% guideline is an appropriate threshold where soil disturbance at or below will likely maintain soil productivity. Total treatment acres are about 587,887 acres for Alt. B, 593,175 for Alt. C and 567,278 for Alt. D.

Table 3. Comparison of Alternatives and Effects to Soil and Water Resources, Proposed Treatment Areas, 4-FRI

	Alt. A Acres	Alt. A Percent of TA*	Alt. A Percent of WS**	Alt. B Acres	Alt. B Percent of TA*	Alt. B Percent of WS**	Alt. C Acres	Alt. C Percent of TA*	Alt. C Percent of WS**	Alt. D Acres	Alt. D Percent of TA*	Alt. D Percent of WS**
Soil Disturbance from mechanical activities	0	0	0	49,237	8.4	2.4	54,495	9.2	2.7	49,238	8.7	2.4
Soil disturbance form potential high severity	0	0 to potentially 33 without treatment	0	11,758	2.0	.6	11,863	2.0	.6	3,576	.6	.2

burns												
Total soil disturbance from high severity burns and mechanical	**0**	**0**	**0**	**60,995**	**10.4**	**3.0**	**66,358**	**11.2**	**3.3**	**52,814**	**9.3**	**2.6**

*TA – Treatment Area ** WS -watershed

Table 4. Range in Percent of Mechanical and High Severity Fire Disturbance by Treatment Area (TA), and 6th HUC Watershed (WS)

Indicator	Alt. A % of TA*	Alt. A % of WS**	Alt. B % of TA*	Alt. B % of WS**	Alt. C % of TA*	Alt. C % of WS**	Alt. D % of TA*	Alt. D % of WS**
Soil Disturbance from Mechanical Activities & High Severity Fire	0 but potentially 33	0 but potentially 0.1-31.2	0-18.2	0-11.0	0-18.2	0-11.0	0-16.4	0-10

Note: Percents are approximate **WS – Watershed *TA – Treatment Area

Table 5. Potential Percent Soil Erosion Above Tolerable Soil Loss Threshold

Indicator	Alternative A Percent of Treatment Area	Alternatives B-D Percent of Treatment Area
Potential soil erosion above tolerable levels when 33 percent of soils is severely burned	8	Up to 2 (post-treatment)
Potential soil erosion above tolerable levels when all (100 percent) of soils are severely burned	24	Up to 2 (post-treatment)
Soil erosion above tolerable levels from mechanical activities	0	0

Another unit of measure is percent of treatment area with potential soil erosion above threshold or tolerable levels. High and low intensity thinning caused the greatest acres of soil disturbance across action alternatives (attachment #1). Across all action alternatives, total maximum soil disturbance by individual treatment type within treatment areas ranges from less than .1percent to 3.9 percent with high intensity thinning causing the highest soil disturbance (calculations of soil disturbance).

Soil disturbance of all treatment types within the treatment area range from 0 - 18.2 percent and 0 -11.0 percent at the watershed level (table 4). No watersheds have soil disturbance above 11 percent which is 4 percent below the 15 percent threshold and therefore, soil productivity should be maintained at the watershed level.

Alternatives B, C and D (table 5) have a few treatment areas in watersheds where soil disturbance would be above 15 percent but less than 20 percent located in the following watersheds, Government Canyon, Juan Tank Canyon, Curley Wallace Tank, Sinclair Wash and Yeager Draw. Most of these watersheds have very few acres proposed for treatment and therefore are not expected to pose a risk to overall soil productivity at the treatment level. Implementation of identified soil and water resource mitigation measures and BMPs is expected to minimize soil erosion and maintain soil productivity and water quality.

A detailed effects analysis is found and summarized by alternative in this report and also found in the section entitled comparison of alternatives at the end of the effects analysis. Below is a summary of key findings.

Table 5a. Comparison of Effects to Soil Condition and Productivity by Alternative

	Alternative A	Alternative B	Alternative C	Alternative D
Acres Treated for Improvement, Maintenance and Protection of Soil Condition and Productivity	0	587,923	593,211	470,165
Overall change (Improvement, Maintenance and Protection) of Soil Condition, Function and Productivity	None	Would greatly improve, maintain and protect Thinning stands combined with prescribed and maintenance burning would increase herbaceous understory productivity on about 388,500 acres. Burn only on about 199,400 acres would decrease wildfire threat and improve soil condition and protect productivity on about 587,923 acres in the long term.	Would improve, maintain and protect slightly more than B because it improves more grasslands Thinning stands combined with prescribed and maintenance burning would increase herbaceous understory productivity on about 434,000 acres. Burn only on about 159,200 acres would decrease wildfire threat and improve soil condition and protect productivity on about 593,211 acres in the long-term.	.Less than B and C but more than A. Thinning stands would increase herbaceous understory productivity on about 388,500 acres. However, not prescribed or maintenance burning would leave about 25% of those treated acres or 97,125 acres (Lata, 2013) subject to high severity surface fire effects that poses risk to long-term soil productivity. Burn only with maintenance burning on about 178,790 acres with the thinning acres not subject to high severity wildfire (291,375 acres) would decrease wildfire threat and improve soil condition and protect soil productivity on about 470,165 acres

Table 5b. Comparison of Effects to Watershed Function by Alternative

Watershed Condition Indicator and Treatment Improving and Maintaining Watershed Function	Alternative A	Alternative B	Alternative C	Alternative D
Hazardous Fuel Reduction acres resulting in improvement, protection and maintenance of soil condition and productivity	0	587,923	593,211	470,148
Potential for High Severity Burns	200,000 acres or 34%	23,000-41,000 acres or 4-7%	Same as B	23,000-41,000 acres or 4-7% in crown fire in short-term with surface fire intensity similar to A on about 25% of mechanical treatment acres and 50% revert to FRCC 3 in long-term (2050). .50% revert to FRCC 3 in long-term (2050)
Ephemeral Stream Restoration (miles)	0	39 miles. Of which 19 miles are in functioning at risk watersheds, 11 miles are in functioning proper watersheds and 9 miles are in impaired function watersheds	Same as B	Same as B
Road and Route Decommission (miles)	0	904 miles. Of which, 496 miles are in functioning at risk watersheds, 182 miles are in functioning proper watersheds and 226 miles are in impaired function watersheds.	Same as B	Same as B
Overall Change (Improvement & Maintenance) in	None. Continue to have high amounts of	Would greatly improve and maintain watershed function. Moves toward improved watershed	Same as Alternative B. Roads and	Would improve in short-term but not be maintained in long-term. Moves toward improved

Watershed Function	functioning at risk and impaired watersheds	function through a positive change in fuels reduction and improved soil productivity on 23% of the functioning at risk (or about ¼ of the 58% that are currently functioning at risk) and 42% (i.e., almost half) of impaired watersheds would improve. Reduces open road density by 496 miles are in functioning at risk watersheds, and 226 miles are in impaired function watersheds. Stream channel treatments improve water flow regime on 19 miles of functioning at risk and 9 miles in impaired watersheds.	stream channels are the same as Alt B.	watershed function through a positive change in fuels reduction and improved soil productivity on 18% of the functioning at risk and 34% of the impaired watersheds. Overall watershed improvement not as extensive and B and C. Roads and stream channels are the same as Alt B.

Key Finding

Implementation of Alternative A would not meet the projects purpose and need to improve and protect soil condition, productivity and watershed function nor move towards the desired condition of having a resilient forest by reducing the potential for undesirable fire behavior and its effects and maintaining the mosaic of tree groups and interspaces with frequent, low-severity fire by having a forest structure that does not support wide-spread crown fire. Implementation of Alternative A would not increase forest resiliency to natural disturbances and would not improve or protect soil condition and soil productivity or watershed function as well as all other action alternatives Implementation of Alternative A would put soils and watersheds at risk of continued uncharacteristic wildfires that could result in loss of soil productivity and sediment delivery to connected streamcourses.

Key Finding

Implementation of Alternative D does not fully meet the projects purpose and need as well as other action alternatives but would come closer than Alternative A.

Key Finding

Implementation of Alternatives B and C meet the projects purpose and need and meet the Kaibab and Coconino national forest plan standards and guidelines. Implementation of Alternative D

would meet the forest plans standards and guidelines but not fully meet the purpose and need of this project.

Overall, implementation of the proposed action is expected to maintain, improve and protect long-term soil productivity and watershed function much better than Alternative A, a little better than D and about the same as Alternative C. However, implementation of Alternative C would probably better restore grasslands than Alternative B and still has about the same amount of soil disturbance treatment area wide and at the 6th HUC watershed level. Implementation of Alternatives B and C would reduce the risks to life, property, soil productivity and water quality from post wildfire storm events (flooding and debris flows) much better than A and D.

Coconino and Kaibab National Forest Land Management Plan Direction

Table 6 through table 9 summarizes the management direction and the standards and guidelines for soil and water resources in the Coconino (USDA 1987) and Kaibab (USDA 1989) National Forest Plan. Acres are approximate.

Table 6. Summary of Management Areas in the project area from the 1987 Coconino National Forest Plan as amended

Management Area (MA)	Coconino NF Forest Plan (FP) Management Emphasis
3	Emphasize a combination of multiple-uses including a sustained-yield of timber and firewood production, wildlife habitat, livestock grazing, high quality water, and dispersed recreation. FP amendment 11, replacement p. 117
4	Emphasize wildlife habitat, watershed condition, and dispersed recreation. Management intensity is low. FP Errata #1 1/2008, replacement p. 139
6	Emphasize a combination of wildlife habitat, watershed condition, and livestock grazing. Other resources are managed in harmony with the emphasized resources. FP amendment 12, replacement p. 145
7	Emphasize firewood production, watershed condition, wildlife habitat, and livestock grazing. FP, Errata #1 1/2008, replacement p. 156
8	Emphasize wildlife habitat, watershed condition, and dispersed recreation. FP, Errata #1 1/2008, replacement p. 148
9	Emphasize livestock grazing, visual quality, and wildlife habitat. Other resources are managed in harmony with emphasized resources. The smaller mountain meadows in remote areas are managed mostly for wildlife habitat, especially for elk summer range. FP, Errata #1 1/2008, replacement p. 158
10	Emphasize range management, watershed condition, and wildlife habitat. Other resources are managed to improve outputs and quality. Emphasis is on prescribed burning to achieve management objectives. Walnut Canyon National Monument entrance road is within this MA. The management and use of the 1000 foot right-of-way along the entrance road is directed toward the protection and maintenance of the cultural and natural resources of the area. FP, Errata #1 1/2008, replacement p. 162
12	Emphasize wildlife habitat, visual quality, fish habitat, and watershed condition on the wetlands, riparian forest, and riparian scrub. Emphasize dispersed recreation, including wildlife and fish recreation, on the open water portion. FP, Errata #1 1/2008, replacement p. 172
35	Focus on maintenance and/or improvement of soil condition and watershed function. Degraded meadows and stream channels will be improved through a variety of management activities designed to increase herbaceous ground cover and litter and reduce soil erosion. System roads and trails will receive adequate maintenance so that accelerated soil erosion is minimal. Non-system roads will be rehabilitated and some poorly located roads will be re-located.

Management Area (MA)	Coconino NF Forest Plan (FP) Management Emphasis
	The northwestern portion of this MA is within the Urban/Rural Influence Zone. Reduce the risk of catastrophic wildfire, especially within the Urban/Rural Influence Zone. Reduce instances of illegal activities and trash dumping. Maintain scenic quality. Opportunities for firewood or other forest products are rare in the northwest portion; however, firewood sales may be used as a tool for management. In the entire MA, re-introduce fire's natural role as much as possible, and ponderosa pine lands progress towards desired forest structure, including northern goshawk and Mexican spotted owl habitats. In the lakes, maintain the variety of waterfowl, raptors, amphibians, and many different kinds of plants adapted to lake shore environments. Emphasize healthy shorelines adjacent to the water with ample ground cover, and less erosion or compaction. Turbidity is natural to these lakes. Minimize human disturbance to wildlife, where needed, during the critical times. Continue to provide general dispersed and water-based recreation opportunities. Improve wildlife viewing opportunities where wildlife viewing is compatible with wildlife habitat. FP Errata #1 – 1/2008 Replacement Page 206-97and 206-98
37	Provide Recreational Opportunities. Maintain the quality of the recreational experience throughout this MA. North and west of Walnut Canyon emphasize daytime recreation activities, primarily non-motorized. South and east of Walnut Canyon emphasize remote dispersed recreation (day and overnight) with motorized and non-motorized opportunities. Balance recreation demands with protection of the soils, water, vegetation, and sensitive species. Manage to protect the values of Walnut Canyon National Monument and complement National Park Service goals for the Monument as described in the National Park Service's General Management Plan. Maintain scenic quality. Protect the community - A small portion of this MA is within the Urban/Rural Influence Zone. Reduce the risk of catastrophic wildfire, especially within the Urban/Rural Influence Zone. Reintroduce fire's natural role as much as possible. Opportunities for firewood or other forest products are rare north and west of the Canyon, however, firewood sales may be used as a tool for management. Protect Walnut Canyon environs. Focus on maintenance and/or improvement of soil condition and watershed function. Degraded meadows and stream channels will be improved through a variety of management activities designed to increase herbaceous ground cover and litter and reduce soil erosion. System roads and trails should receive adequate maintenance so that accelerated soil erosion is minimal. Nonsystem roads

Management Area (MA)	Coconino NF Forest Plan (FP) Management Emphasis
	will be rehabilitated and some poorly located roads will be re-located. Maintain sensitive species habitat. Ponderosa pine lands progress towards desired forest structure, including Mexican spotted owl and northern goshawk habitats. Reduce instances of illegal activities and trash dumping. Emphasize the social values compatible with an urban interface that includes recognition of the area's opportunity for wildlife, recreational, and scenic values. Provide forage and security for a variety of game and non-game species of wildlife, provide conservation and environmental education opportunities, provide an area for recreational uses for the Flagstaff public, and manage a portion of the area to give a quiet, almost primitive recreation experience. FP Errata #1 – 1/2008 Replacement Page 206-107

Table 7. Summary of Coconino NF Forest Plan Standards and Guidelines for the project area

Management Area (MA)	Description	Standards and Guidelines	Forest Plan Reference Page
Forest-wide	Forest-wide	Use Best Management Practices to reduce nonpoint source pollution	Amendment 3, replacement page 71
Forest-wide	Forest-wide	Plan for appropriate filter strips adjacent to streamcourses and/or riparian areas	Amendment 3, replacement page 71
Forest-wide	Forest-wide	Designate streamcourses and riparian areas to receive protection during projects	Amendment 3, replacement page 72
Forest-wide	Forest-wide	Maintain current satisfactory watershed conditions and improve unsatisfactory conditions to satisfactory by the year 2020.	Page 74
Forest-wide	Forest-wide	Plan projects, parts of projects, and/or management practices for soil and water resources improvement where watershed condition is unsatisfactory. Incorporate plans for soil and water improvements into project planning for other resources	Amendment 3, replacement page 72
Forest-wide	Forest-wide	Inventory riparian communities and areas capable of supporting riparian species by the end of the first decade. Channel condition and aquatic habitat condition will be included in the survey. Plan and design projects in areas of unsatisfactory or degraded condition to promote channel and streambank stability and to improve flow and timing of water. Meet or exceed eighty percent of Regional requirements above the Rim and ninety percent below the Rim by 2030. Manage to achieve at least 25 percent of the currently unsatisfactory riparian areas will be in satisfactory condition by 2000.	
3 **6**	Ponderosa Pine and Mixed Conifer less than 40% slopes Unproductive Timber Land	Identify each terrestrial ecosystem and assess soil properties to determine: Soil limitations for soil scarification purposes. The method of soil scarification best	Amendment 17, replacement page 120 Forest Plan p 146

Management Area (MA)	Description	Standards and Guidelines	Forest Plan Reference Page
9	Mountain Grassland	suited for the soils of the project area. Soil potential for revegetation - Identify soils that are suitable or unsuitable for successful revegetation. Erosion hazard and on-site soil loss - Soils with a potential erosion hazard rating of severe will require specific resource management activities in order to avoid severe impairment of soil productivity.	Forest Plan p 160
3	Ponderosa Pine and Mixed Conifer less than 40% slopes	For each timber sale area, identify each terrestrial ecosystem and assess soil properties to determine: Soils with severe potential for sheet and gully erosion, such as steep slopes, cinder cones, alluvial bottoms, and swales, that require specific resource management activities in order to avoid severe impairment of soil productivity. Soil limitations for site preparation - Identify soils that present severe limitations for successful site preparation such as soils with severe erosion hazard and shallow soils. Require specific resource management activities where successful site preparation is limited by environmental factors in the terrestrial ecosystem. Soil potential for reforestation - Identify soils that are suitable or unsuitable for successful reforestation. Adjust stocking levels and require specific resource management activities where successful reforestation is limited by environmental factors in the terrestrial ecosystem. Whether soils are suitable, unsuitable, or unproductive for timber management. Soil limitations for timber harvest activities. Soils with high potential to convert to another vegetative type such as oak, locust, or juniper as a result of timber management	Amendment 1, replacement page 136

Management Area (MA)	Description	Standards and Guidelines	Forest Plan Reference Page
		activities. Modify timber management activities in these terrestrial ecosystems conversion by approved chemical or mechanical means or by prescribed fire.	
3	Ponderosa Pine and Mixed Conifer less than 40% slopes	Where open meadows in the pine/mixed conifer type are to be maintained, eliminate invading overstory vegetation, stabilize gullies to raise the water table, scarify the soil, and seed with appropriate grass and forage species. Control livestock grazing through management and/or fencing to establish the revegetation.	Amendment 17, replacement page 120
3	Ponderosa Pine and Mixed Conifer less than 40% slopes	Construct landings and decking areas outside of riparian areas.	Amendment 1, replacement page 136
3	Ponderosa Pine and Mixed Conifer less than 40% slopes	Locate or relocate roads out of riparian areas, except at designated crossings. Obliterate unnecessary roads in riparian areas.	Amendment 1, replacement page 136
3	Ponderosa Pine and Mixed Conifer less than 40% slopes	Avoid or designate stream course crossings for skid trails. Limit to the minimum needed. Choose crossings with stable conditions or stable bed and bank material such as cobble or rock.	Amendment 1, replacement page 136
3	Ponderosa Pine and Mixed Conifer less than 40% slopes	Restrict skidding and hauling to soil moisture conditions that do not cause excessive soil compaction, displacement, or puddling. Restrict timber sale activities to slopes of 25 percent or less on cinder cones under conventional skidding.	Amendment 1, replacement page 136
6	Unproductive Timber Land	During the first decade, identify each terrestrial ecosystem and assess soil properties to determine: Whether soils are suitable, unsuitable, or unproductive for timber management. Provide detailed soils input to administrative study plans for reforestation.	Forest Plan, page 146
9	Mountain Grassland	Manage mountain grasslands to achieve 90 percent of potential ground cover to prevent accelerated	Forest Plan, page 160

Management Area (MA)	Description	Standards and Guidelines	Forest Plan Reference Page
		surface erosion and gully formation. Areas that presently do not meet these standards are scarified and seeded to bring ground cover to the desired level by the second decade. Restricting livestock may be necessary until revegetation. In areas capable of supporting woody riparian species, maintain and/or improve these species to standards in the Regional Guide, August 1983. Plan and implement cost effective stream channel restoration projects to raise the water table in meadow areas where channel erosion has resulted in a lowering of the water table.	
12	Riparian and Open Water	Through coordination with other disciplines, maintain or improve, where necessary, riparian vegetation along streams for moderating water temperature and protecting bank stability. Accomplish promptly after the inventory phase is completed. Investigate and implement where necessary, cost effective structural measures to control channel erosion.	Forest Plan, page 177
12	Riparian and Open Water	Plan for suitable filter strips between streamcourses and disturbed areas and/or road locations. See Filter Strip Table in Forest-wide Standards and Guidelines under Watershed/Soil/Air, F2. Plan for suitable filter strips between stream courses and ground disturbing activities including roads.	Amendment 1, replacement page 176
12	Riparian and Open Water	No precommercial thinning or piling slash in riparian areas or areas that have riparian characteristics.	Amendment 1, replacement page 176
35	Lake Mary Watershed	This area is a high priority for fixing drainage culverts, relocating roads from meadows, and obliterating unnecessary roads so that erosion does not degrade water quality in Lake Mary.	Errata #1 – 1/2008 replacement page 206-100 and 206-101

Management Area (MA)	Description	Standards and Guidelines	Forest Plan Reference Page
		Roads, trails, camping, and grazing will be managed to improve watershed condition particularly within mountain meadows, springs, and drainages. Improve watershed conditions in Priest Draw. Cooperate with the City of Flagstaff and National Park Service to develop study proposals and projects designed to evaluate best management practices, reservoir modifications, and/or operational criteria to address the objectives of maintaining the quality of the municipal water supply and increasing the likelihood of flood flows and improvement of the inner-canyon environment in Walnut Canyon National Monument (per the Stipulation Between The City of Flagstaff and the United States on Behalf of the National Park Service and the Forest Service).	
37	Walnut Canyon	Cooperate with the City of Flagstaff and National Park Service to develop study proposals and projects designed to evaluate best management practices, reservoir modifications, and/or operational criteria to address the objectives of maintaining the quality of the municipal water supply and increasing the likelihood of flood flows and improvement of the inner-canyon environment in Walnut Canyon National Monument (per the Stipulation Between The City of Flagstaff and the United States on Behalf of the National Park Service and the Forest Service).	Errata #1 – 1/2008 replacement page 206-111

Management direction and the standards and guidelines in the Kaibab National Forest Plan (USDA, 1989) that affect soils and watershed resources are locate below in tables 8 through 10.

Table 8. Summary of Kaibab NF Forest Plan Direction for the Project Area

Geographic Area	Description	Acres*
1	Western Williams Woodland	4,962.36
2	Williams Forestland	294,765.71
3	Northern Williams Woodlands	3,477.98
6	Arizona Bugbane Botanical Area	490.00
8	Tusayan Woodland	1,690.76
9	Upper Basin Woodland	10.83
10	Tusayan Forestland	44,538.79
Grand Total		**349,936.43**

***Acres are approximate**

Table 9. Summary of the Management Direction for Soil and Water Resources from the Kaibab National Forest Plan for the Project Area

Geographic Area	Management Direction
Forest-wide	Produce the maximum amount of forage, consistent with other resource values, for use by wildlife and livestock on a sustained yield basis. Benefits are improved watershed condition, range forage, wildlife habitat, and enhanced visual quality. Chapter 4, page 18.
Forest-wide	Concentrate fuelwood programs in the pinyon-juniper woodland to accomplish, wildlife habitat, soil and watershed, and range improvement objectives. Encourage substitution of coniferous residues from commercial timber harvest for preferred fuelwood sources. Chapter 4, page 19.
Forest-wide	Maintain soil productivity and watershed condition. Rehabilitate non-productive lands on a planned basis to eliminate unsatisfactory watershed condition by 2020. Maintain a high quality sustained water yield for Forest users and others. Identify and protect wetlands and floodplains. Chapter 4, page 19.
Forest-wide	Ecosystem Management In Northern Goshawk Habitats -Manage the ground surface layer to maintain satisfactory soil conditions i.e. to minimize soil compaction; and to maintain hydrologic and nutrient cycles. Chapter 4, page 28.
1, 3, 8, 9, 12, 16	Provide for intensive management of soil and watershed resources. Chapter 4, pages 50, 53, 56, 60, 63, and 67.
1, 3, 8, 9	Make soil and watershed resource inventories and analyses to ensure the conservation of soil and water resources and to avoid significant and permanent impairment of site productivity. Chapter 4, pages 50, 53, 56, 60, 63, and 67.
1, 3, 8, 9, 12, 16	Provide soil and water resource integration and coordination in land and resource management planning. Chapter 4, pages 50, 56, and 60.
1, 8, 9, 12, 16	Formulate and execute land treatment measures to (1) close, revegetate, and thereby obliterate, system roads not needed for resource actions and (2) establish ground cover improvements in degraded, unsatisfactory watersheds to return them to satisfactory condition. Chapter 4, pages 50, 56, 60, 63, and 67.
1, 8, 9, 12, 16	Provide for the long-term maintenance of vegetative ground-cover improvements. Chapter 4, pages 50, 56, 60, 63, and 67.

Geographic Area	Management Direction
1, 8, 9, 12, 16	Maintain soil and water inventory and information systems. Chapter 4, pages 50, 56, 60, 63, and 67.
3	Provide for intensive management of soil and watershed resources to ensure their conservation and to avoid significant and permanent impairment of site productivity. Chapter 4, page 53.
3	Provide for the long-term maintenance of vegetative groundcover improvements and the periodic maintenance and replacement of structural improvements. Chapter 4, page 53.
3	Make soil and water resource analyses and maintain inventory information systems. Chapter 4, page 53.

Table 10. Summary of the Standards and Guidelines from the Kaibab National Forest Plan

Geographic Area	Description	Applicable Standards and Guidelines	Forest Plan Reference page
Forest-wide	Forest-wide	Use the Appendix B "Design Features, Best Management Practices and Mitigation Measures" in the "Final Environmental Impact Statement for Integrated Treatment of Noxious or Invasive Weeds on the Coconino, Kaibab, and Prescott National Forests within Coconino, Gila, Mojave, and Yavapai Counties, Arizona" (2004) for specific mitigation measures. Deviance from Appendix B does not trigger the need for a Forest Plan Amendment; however Required Protection Measures from Section 7 consultation (Endangered Species Act) must be followed. If as a result of environmental analysis, Best Management Practices or Mitigation Measures are modified, document the reason(s) in a NEPA decision.	Chapter 4, page 34-1 (Amended 11/04)
Forest-wide	Forest-wide	Incorporate measures to control invasive species into project planning, implementation and monitoring.	Chapter 4, page 35
1, 3, 8, 9	Recreation Use Administration	Provide control measures for areas where the following resource damage occurs: (1) soil compaction, (2) loss of vegetative cover, (3) tree damage and mortality, and (4) deterioration of water quality.	Chapter 4, page 73
1, 3, 8, 9	Recreation Use Administration	Implement permanent, temporary or seasonal closures of areas to off-road vehicle traffic to protect soil, vegetation, visual, wildlife, wildlife habitat and cultural and historic resources.	Chapter 4, page 73

Geographic Area	Description	Applicable Standards and Guidelines	Forest Plan Reference page
1, 3, 8, 9	Recreation Use Administration	Prohibit off-road competitive events.	Chapter 4, page 73
1, 3, 8, 9	Wildlife, Surveys, Planning, Prescriptions, Monitoring, Coop, and Administration	Riparian Vegetation. Riparian areas are geographically delineable areas with distinctive resource values and characteristics that are comprised of aquatic and riparian ecosystems. Riparian ecosystem is a transition between aquatic ecosystems and adjacent terrestrial ecosystem identified by soil characteristics or distinctive vegetation communities that require free or unbound water; terrestrial ecosystems characterized by hydric soils and plant species that are dependent on the water table (saturated zone) and, or its capillary zone. a. Inventory all riparian areas; collect data regarding location, size, classification and condition of the riparian. b. Maintain not less than three age classes of woody riparian species, with ten percent of the woody plant cover in sprouts, suckers, seedlings, and saplings. c. Maintain not less than 90 percent of the potential stream shading from May to September along all perennial cold or cool water streams. Provide shade with tree and other vegetational cover. d. Maintain not less than 90 percent of the potential shrub cover in riparian areas. e. Maintain not less than 90 percent of total linear streambank in stable condition. f. Woody riparian communities in addition to riparian communities which are dominated by shrub and herbaceous species are to rate in satisfactory or better condition. g. Select riparian areas for treatment based on relative scorecard condition rating with the lowest rating assigned to first treatment.	Chapter 4, page 76
1, 3, 8, 9	Range Non-Structural Improvement	Re-treat improved forage areas as determined in project level analysis using mechanical, chemical or fire use means and in accordance with the following guidelines: a. The area to be re-treated is situated on one or more of the following soil mapping units: 8, 16, 17, 18, 19, 23, 27, 30, 32, 40, 112, 162, 250, 251, 254, 255, 256, 257, 258, 260, 261, 263, 264, 272, 273, 280, 289, 502, 503, 507, 513, 514, 520, 543, 588, 590, 599, 632, 633, and 634.	Chapter 4, page 79

Geographic Area	Description	Applicable Standards and Guidelines	Forest Plan Reference page
		b. Opening is not larger than 40 acres excepting that in primary pronghorn antelope range. c. The maximum width of the opening is 10 chains excepting that in primary pronghorn antelope range. d. The maximum sight distance within the opening is 15 chains excepting that in primary pronghorn antelope range. e. The minimum distance between any two openings is 10 chains. f. Exclude livestock from seeded areas for Not less than two growing seasons.	
1, 3, 8, 9	Improvement	Implement land treatment and structural measures in accordance with project specific analysis and the following guidelines. Land treatment measures are (1) closure and revegetation of system roads identified for obliteration in the transportation inventory; and (2) ground cover improvements in the following soil mapping units: 8, 12, 16, 17, 18, 19, 27, 30, 32, 40, 162, 165, 250, 251, 254, 255, 257, 258, 260, 261, 263, 264, 272, 273, 280, 281, 288, 289, 502, 503, 507, 513, 514, 520, 542, 543, 587, 588, 590, 592, 599, 632, and 634.	Chapter 4, page 82
1, 3, 8, 9	Processing of Oil and Gas Lease Applications	Restrict use and occupancy yearlong on slopes of 15 percent or greater to prevent loss of soil productivity and vegetative cover.	Chapter 4, page 83
1, 3, 8, 9	Transportation System Planning and Inventory	Identify and obliterate all system roads not required for resource management in accordance with the Management Direction for Soil and Water Resources.	Chapter 4, page 85
2, 10	Additional standards applicable only to Ecosystem Management Areas 2, 10 and 13.	Implement resource operations and improvements which contribute to achievement of desired conditions and fulfillment of the Forest Service mission. (Resource operations and improvements are specified in Forest Service Handbook (FSH) 1309.16, National Activity Structure Handbook).	Chapter 4, page 38

Geographic Area	Description	Applicable Standards and Guidelines	Forest Plan Reference page
2, 10	Additional standards applicable only to Ecosystem Management Areas 2, 10 and 13.	Identify habitat management territories for threatened, endangered, or sensitive plant or animal species that are consistent with the conservation strategy and the recovery plan established for the species through on-the-ground surveys or record searches. Habitat needs for Federally listed species will take precedence over unlisted species, endangered species take precedence over threatened species and sensitive species take precedence over non-sensitive species.	Chapter 4, page 38
2, 10	Additional standards applicable only to Ecosystem Management Areas 2, 10 and 13.	Formulate and portray, describe, or quantify management objectives and desired conditions for the landscape. In landscapes that involve habitat for threatened, endangered, or sensitive plant or animal species, formulate management objectives and desired conditions for each designated management territory. Formulate, design, and implement resource operations or improvements that contribute to the achievement or maintenance of these management objectives and desired conditions.	Chapter 4, page 38
2, 10	Additional standards applicable only to Ecosystem Management Areas 2, 10 and 13	Consult with appropriate tribal, state, county, or local government agencies regarding existing conditions, desired conditions, management objectives, proposed intervention and resource improvement actions for the landscape.	Chapter 4, page 38

Geographic Area	Description	Applicable Standards and Guidelines	Forest Plan Reference page
2, 10	Additional standards applicable only to Ecosystem Management Areas 2, 10 and 13	Formulate, design, and propose resource operations or improvements that contribute, over time, to the achievement or maintenance of desired resource or ecological conditions in landscapes. Consult when applicable: a. Survey and inventory protocols for TE&S species. b. Recovery plans and conservation strategies for TE&S species. c. Formal Consultation Reports. d. Guidelines for resource operations and improvements. e. Intergovernmental agreements and memoranda of understanding. f. Forest Service Manuals and Handbooks. g. Management review and resource monitoring evaluation reports. h. Technical reports and bulletins, research papers, handbooks, monographs, and other documents in the literature. i.Tribal, state, and local government input. j. Public input.	Chapter 4, page 38
2, 10	Additional standards applicable only to Ecosystem Management Areas 2, 10 and 13	Identify, describe, and geographically locate existing conditions in the implementation land area, regarding: a. National Forest lands. b. Research natural areas. c. Wilderness and other administrative designations. d. Ecosystem management areas. e. Landscapes. f. Ad hoc areas. g. Administrative, fire, and other facilities. h. Water locations and water rights. i. Roads, trails, airports, and heliports. j. Fuel loadings. k. Ecological land units (aka TES units or SM units). l. Range allotments and pastures. m. Range utilization, condition and trend. n. Range improvements. o. Heritage resource properties. p. Utility corridors and other special land uses. q. NZ: Visual quality objectives; SZ: Scenic	Chapter 4, page 39

Geographic Area	Description	Applicable Standards and Guidelines	Forest Plan Reference page
		Integrity Objectives. r. Existing vegetation. s. Meadows and grasslands. t. Management territories for threatened, endangered, or sensitive species. u. Management territories for other plant or animal species. v. Wetlands. w. Recreation opportunity spectrum. x. Recreation sites, including RARE II areas. y. Mineral sites. z. Off-road vehicular closure areas.	
2, 10	Additional standards applicable only to Ecosystem Management Areas 2, 10 and 13	Identify and portray desired forest site conditions for the landscape or ad hoc area at the twenty-year and forty-year timemarks.	Chapter 4, page 39
2, 10	Additional standards applicable only to Ecosystem Management Areas 2, 10 and 13	Identify, interpret, and expose public issues, management concerns, and resource opportunities relevant to the landscape.	Chapter 4, page 39
2, 10	Additional standards applicable only to Ecosystem Management Areas 2, 10 and 13	Describe and geographically locate, using geographic information systems technology, the selected set of proposed intervention or resource improvement actions designed to accelerate progress toward desired conditions or maintain desired conditions. Also: a. Geographically identify and locate, the analysis area (aka affected area) relevant to each proposed intervention or resource improvement action. b. For each analysis area, predict the expected effects and resultant forest-site conditions for the five-year, twenty-year, and forty-year timemarks. c. For each analysis area, predict the expected effects and resultant forage conditions for the one-year, five-year, and ten-year timemarks. d. Identify and geographically locate possible conflicts between proposed land use, occupancy, or resource intervention or improvements	Chapter 4, page 39

Geographic Area	Description	Applicable Standards and Guidelines	Forest Plan Reference page
		actions and tribal, state, or local governmental agency interests, missions, or ordinances. Disclose these conflicts and the effects of not being in compliance with the local requirement in the environmental impact statement or environmental assessment. Decision to override a local requirement must be explained in the appropriate decision document. e. Identify and establish monitoring activities for each proposed intervention or resource improvement action.	
2, 10	Additional standards applicable only to Ecosystem Management Areas 2, 10 and 13	Formulate alternatives to proposed intervention or resource improvement actions not categorically excluded from documentation in an environmental document.	Chapter 4, page 40
2, 10	Additional standards applicable only to Ecosystem Management Areas 2, 10 and 13	Document findings of environmental analysis, disclose the expected environmental effects of proposed actions, and publish implementation decisions as prescribed by NEPA and its implementing regulations or regulations of the Secretary of Agriculture.	Chapter 4, page 40
2, 10	Guidelines for Rangeland Resource Operations and Improvements	Favor native species in all revegetation activities.	Chapter 4, page 40
2, 10	Guidelines for Recreation Resource Operations and Improvements	Formulate and implement control measures where and when the following damage occurs: a. Soil compaction. b. Loss of vegetative cover. c. Tree damage and mortality. d. Deterioration of water quality.	Chapter 4, page 41
2, 10	Guidelines for Recreation Resource Operations and Improvements	Prohibit competitive ORV events.	Chapter 4, page 41
2, 10	Guidelines for Air and Watershed Resource Operations and	1. Define, geographically identify and locate best management practices for the landscape during landscape planning and analysis. Apply best management practices to mitigate adverse effects of activities and maintain site soil	Chapter 4, page 42

Geographic Area	Description	Applicable Standards and Guidelines	Forest Plan Reference page
	Improvements	productivity. These practices include: a. Installation of water control structures or seeding lands in poor and very poor condition where the revegetation potential is moderately high to high and the slope is less than 40 percent. b. Designate stream courses during landscape planning and analysis process. c. Rehabilitate areas impacted by wildfire. 2. Exclude domestic livestock from treated area for not less than two growing seasons. 3. Maintain not less than three age classes of woody riparian species with ten percent of the woody plant cover in sprouts, suckers, seedlings, and saplings. 4. Maintain not less than 90 percent of the potential stream shading from May to September along all perennial cold or cool water streams. Provide shade with tree and other vegetation cover. 5. Maintain not less than 90 percent of the potential shrub cover in riparian areas. 6. Maintain not less than 90 percent of total linear streambank in stable condition. 7. Woody riparian communities in addition to riparian communities which are dominated by shrub and herbaceous species are rated in satisfactory or better condition. 8. Select riparian areas for treatment based on relative scorecard condition rating with the lowest rating assigned to first treatment.	

Geographic Area	Description	Applicable Standards and Guidelines	Forest Plan Reference page
2, 10		4. Personal-use fuelwood standards a. Ponderosa pine, Douglas fir, and spruce: (1) Any dead and down tree. (2) Any standing dead tree less than 12 inches DBH. (3) Any standing dead tree less than 15 feet in total height. b. Juniper: (1) Any dead and down tree. (2) Any standing dead tree without green foliage). c. Pinyon pine: (1) Any dead and down tree. (2) Any standing dead tree less than 12 inches DRC (10"DBH). (3) Any standing dead tree less than 12 feet in height. d. Gambel oak: (1) Any dead and down tree. (2) Any standing dead tree less than 8 inches in DBH. e. Quaking aspen: (1) Any dead and down tree. (2) Any standing dead tree less than 12 inches in DBH.	Chapter 4, page 75

Affected Environment and Environmental Consequences

This section details the affected environment and environmental consequences for the soil resources within the analysis or treatment area (about 595,000 acres). It establishes the baseline against which the decision maker and the public can compare the effects of all action alternatives.

This section also describes the direct, indirect, and cumulative effects of implementing each alternative on the soil resources and water quality in the project area. It presents the scientific and analytical basis for the comparison of the alternatives presented in Alternatives section. NEPA requires consideration of "the relationship between short-term uses of man's environment and the maintenance and enhancement of long-term productivity" (40 CFR 1502.16).

Affected Environment

The resource areas to be affected by the proposals within this analysis are Forest soils, riparian areas, ephemeral, intermittent and perennial streamcourses and water quality. Affected environment of riparian resources and water quality is analyzed in the water resources specialist report (MacDonald 2012). This report analyzes soil resources and water quality that may be affected by the alternatives.

Summary of Affected Environment

Some 94 TES map units were aggregated into 17 strata (Appendix B). All acres approximate. These strata have similar soils and vegetation types with similar limitations, hazards and production potentials to management activities. The strata were used in part to design treatments, analyze effects and are based on the potential plant community and capability of the soils.

Within the analysis area, the following strata (Appendix A) are dominated by soils with severe erosion hazard, 16, 17, 19, 20, 32, 35, 38, 41, 42, 43, 44, 45, and portions of 47, 48, and 49. Strata 18, 22, 31, 33, 34, 36, 50 (a total of about 133,850 acres or about 13 percent of the analysis area), and portions of 21, 47, and 48 have soils dominated with moderate erosion hazard (about 52, 750 acres, or about 5 percent of the area). The remaining strata including, 1 – 15, 23, 24, 25, 26, 27, 28, 29, 30, 37, 39, 40, and most of 46 have soils with slight erosion hazard (about 805,700 acres, or about 81percent of the analysis area). Identified resource protection measures are required to assure accelerated soil erosion does not occur that would impair soil productivity.

Almost all strata within ponderosa pine PPC's have moderate or severe timber harvest limitations except most of strata 21. Identified resource protection measures are required to assure accelerated soil erosion and compaction do not impair soil productivity.

Most strata in the ponderosa pine type currently have closed stand structure (Steinke 2007 and Mccusker, Lata 2013) and appear to have high canopy covers and densities that have reduced the understory forage productivity although there is generally sufficient vegetative ground cover to reduce accelerated erosion. Due to the closed stand structure, most strata have relatively high risk of crown fire that also pose a high risk of moderate or high burn severity to the watershed under normal or extreme fire behavior conditions (assuming current FRCC are dominated by class 2 and 3 (6th HUC Watershed Condition Classification, in process; also please see the Fire Ecology and Air Quality specialist report).

Most soils and strata in ponderosa pine PPC's on slopes less than about 40 percent are in satisfactory soil condition (about 841,500 acres or about 85 percent of the analysis area) and have the ability to resist accelerated erosion because they have high amounts of protective vegetative ground cover due to the presence of high and adequate amounts of vegetative ground cover that protects the soil against accelerated erosion and compaction. Although most soils rate out as satisfactory, nutrient cycling is reduced in dense stands (including those in FRCC 2 and 3) and is nearly impaired soil condition overall. The amount of coarse woody material is not quantified but maintenance of 5-7 tons/acre of coarse woody material will improve soil nutrient cycling (USDA, 1994b) and listed as BMP in table 3.

On strata where slopes are greater than about 40 percent (strata 42, 43, 47 and portions of 44 and 45) soil condition is unsuited or also known as inherently unstable where natural erosion exceeds tolerable erosion (about 30,000 acres). These soils and strata are not suitable for mechanical timber harvesting and identified BMP's should be used to protect soil resource when prescribed burning.

Soil condition on some montane meadows (strata 1, 4, and 6) are impaired on the Coconino National Forest and listed as satisfactory on the Kaibab National Forest (about 25,400 acres). However, it is probable that soil condition is impaired on Kaibab national forest soils located in montane meadows (strata 1-8) also. Refined soil condition assessments including all three soil functions was not made on the Kaibab forest and based solely on the ability of the soil to resist erosion. Since these strata are located on flat slopes, it is improbable for the soils to erode faster than renew themselves but most often; these soils have reduced hydrologic and nutrient cycling functions.

Strata 9 are wetlands where soil condition is rated as unsatisfactory on the Coconino forest and satisfactory on the Kaibab forest but similar to the discussion above, soils on the Kaibab forest are likely to be in unsatisfactory condition (about 4,400 acres).

Some Montane Meadows (strata 2 and 3) have either impaired or unsatisfactory soil condition (see Appendix B) due to low vegetative ground cover or compacted soil conditions resulting in hydrologic dysfunction (about 48,900 acres). These strata have reduced ability to effectively infiltrate water and have relatively low vegetative productivity compared to conditions under the PPC. Other similar strata located on the Kaibab National Forest may be in similar condition but no soil condition is available to document condition.

According the WEPP erosion modeling, predicted soil loss rates on undisturbed soils are below tolerable soil loss rates on slopes less than about 80 percent.

Soil condition on pinyon juniper vegetation types on slopes less than 40 percent (strata 46) is variable and has areas of satisfactory, impaired and a few areas have unsatisfactory soil condition (about 1,000 acres). The amount of coarse woody material is not quantified but maintenance of coarse woody material identified in table 3, BMPs will improve soil nutrient cycling and soil condition (Huffman 2010).

Overall, ponderosa pine vegetation types are dominated by functional at risk 6th HUC watersheds (about 451,500 acres, or 46 percent of the analysis area and about 1,214,339 acres, or about 59%, of the entire 6th codes acreage associated with the project acres) with a several impaired watersheds (about 316,800 acres, or about 32 percent of the analysis area and about 458,391 acres, or about 22%, of the entire 6th codes acreage associated with the project acres) and a few

properly functioning watersheds (about 220,400 acres, or about 22 percent of the analysis area and about 394,285 acres, or about 19%, of the entire 6th codes acreage associated with the project acres) as defined by 12 indicators that were used to assess watershed condition through the Watershed Condition Framework (USDA, 2011). Watershed dysfunction in the treatment area is a result in large part from dense forests with fire regime condition classes of 2 or 3, high density of road networks that can alter hydrology, riparian condition less than functional and other factors.

Soils

Climate

The climate of the analysis area in the ponderosa pine vegetation type is classified as low sun cold climate class. It has a bimodal precipitation pattern where the majority of the precipitation falls from October 1 to March 31, mainly in the form of snow and the remainder mainly during the summer monsoon. Thus the winters are cold and soil temperatures are classified as frigid and subject to freezing and thawing. Summer precipitation is spotty, but usually takes place in the form of high-intensity, short duration thunderstorms during the monsoon season (July through September). Precipitation on the average varies from 18 to 24 inches annually in the ponderosa pine cover and up to 30 inches in the mixed conifer vegetation type.

The climate in the ponderosa pine pinyon-juniper transition is similar except annual precipitation is less ranging from about 16 – 20 inches per year with cold winters. The climate in pinyon-juniper vegetation types is dryer with precipitation ranging from about 14-18 inches per year with cold winters.

Use of Terrestrial Ecosystem Survey

Proposed treatments were selected based in part on the identified strata. The strata identify the soil type, classification and interpretations including soil limitations and hazards for mechanical treatments, and soil and vegetation production potentials including the potential plant community. During implementation, the 4 FRI implementation plan will identify on the ground soil limitations and hazards where identified BMPs will be necessary to implement.

TES, Accuracy of Data and Quality Assurance

The TES Ecological Units and soils are derived from the The Terrestrial Ecosystems Survey of the Coconino National Forest (TES) (USDA, 1995) and the TES of the Kaibab National Forest, (USDA, 1989). The TES is the result of the systematic analysis, mapping, classification and interpretation of terrestrial ecosystems also known as terrestrial ecological units delineated and numbered. It is the only seamless mapping of vegetation and soils available across the Forest that includes field visited, validated and correlated sites with a stringent Regional and National protocol stemming from decades of work. Major field work for the Coconino TES was completed by qualified Soil Scientists and Ecologists and during the period of 1987 through 1991. Soil names and descriptions were approved in 1992. Map units are identified by numbers ranging from 11 to 850. Major field work for the Kaibab TES was completed from 1979 through 1986. Map units are identified by numbers ranging from 3 to 683.

The terrestrial ecosystem survey enables practitioners to assess broad landscapes since it consists of a systematic assessment, classification, and mapping of terrestrial ecosystems found in Region

3.[1] It is an integrated survey and hierarchical with respect to classification levels and mapping intensities. A TES represents the combined influences of climate, soil and vegetation under contemporary distrubances and correlates these factors with soil temperature and moisture along an environmental gradient.[2]

Interpretations based upon TES incorporate 1) soil physical and chemical properties, 2) climatic considerations, 3) topographic position and slope, 4) vegetation and anthropogenic influences as well as animal impacts, 5) productive potentials, and 6) geologic influences. As such the TES forms the ecological basis for describing existing conditions for resource areas including watershed, wildlife, fire, and timber and is a useful sideboard in determining desired conditions and analyzing effects of proposed actions.

Accuracy of Data and Quality Assurance

It is important to realize that differences in ecosystem properties including soil and vegetation can occur within short distances. The TES was mapped at a scale of 1:24,000 across the landscape. Generally, small vegetation types smaller than about 40 acres were not mapped and are included in larger TES map units. Where site-specific information is required and at a finer scale, on-site investigations will be made to validate or refine soil information.

Individual map units were based on data collected across the Forest and may or may not represent the exact same landscape existing conditions and potential plant community as depicted in the TES. Overall accuracy of mapping and information provided by the TES is considered reliable at the ecological unit or landscape level. It is estimated that over 3000 points per Forest were visited on-site and have data documenting soil classification, vegetation type present, surface components and other site characteristics present.

The TES follows National Cooperative Soil Survey Standards similar to Soil Surveys conducted by the Natural Resource Conservation Service. This is strict quality assurance including Project Leader field review, Regional Office, initial, annual progressive and final field review to approve map unit design and mapping.

There are minimum data collection requirements necessary to establish, design and map TES map units. Generally, at least 10 observations, 3 transects of 10 stops/transect and reference ecological sites per map unit are required and each Forest has more than 130 TES map units.

Since the 4-FRI is a project planned at the landscape scale; soil information used came from the Terrestrial Ecosystem Survey (TES) and was aggregated up into strata described below in Soil Stratification and Classification.

Soil Stratification and Classification

Some 94 TES map units were aggregated into 17 strata initially and then finally into 50 strata (Appendix B). All acres are approximate. These strata have similar soils and vegetation types with similar limitations, hazards and production potentials to management activities. The strata were used in part to design treatments and are based on the potential plant community and capability of the soils.

A review was conducted using the TES reports for the Coconino and Kaibab national forests. It was based on such items as the physical properties of the TESU (slope, soil depth, color, surface and internal rock content, and surface soil texture), soil classification, potential plant community (PPC), climatic class, and slope. The TES units that were combined within the individual strata are predicted to respond the same to management actions despite the potential of variability in existing conditions.

Initially, a total of 94 unique TESU were identified for the proposed project area, which, based on similarities in soil variables and vegetation were condensed into 17 strata to be consistent with the landscape analysis approach. Under a revised strategy the number of strata increased to 45, though the total TESU considered dropped to 90. Ten of the strata (1, 2, 3, 4, 5, 6, 7, 8, 9, and 10), which combine for 87,609 acres represent grassland and/or riparian communities, invasion by ponderosa pine into these ecosystems has been noted. Twenty strata (11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 30, 31, 36, 37, 38, 39, 40, and 41) either have shallow soils (less than 20 inches to bedrock) , occupy moderately steep to steep slope inclinations (15 to 40 percent), have a particle-size classification of cindery or ashy-skeletal or are on the dry side of the ponderosa pine ecosystem (climatic regime of 5-1). These strata are generally considered to have moderate to severe limitations for timber harvest, requiring implementation of BMP's and have low natural regeneration potential and low site index. These soils occupy approximately 395,495 acres. See Appendix A for a list of soil interpretations by strata.

Strata 42, 43, 44 and 45, which make up about 19,267 acres of the project area, have severe limitations for timber harvest and high erosion hazard limiting mechanical harvesting methods since these units occupy slopes greater than 40 percent. The remaining 11 strata (23, 24, 25, 26, 27, 28, 29, 32, 33, 34, and 35) represent those soils that have the highest production potentials, lowest limitations for timber harvest, slight erosion hazard and the highest natural regeneration potential. These units represent roughly 50 percent of the proposed project area or approximately 499,230 acres.

Soil Classification

Soil classification varies by strata (see Appendix B for a list by strata number) and is dominated by forest soils in the Alfisol order (boralfs suborder) and grassland soils in the Mollisols order (borolls suborder) and on some ponderosa pine forests strata where stand density has drastically increased.

Strata's 1-7 are mollisol grassland potential plant communities (PPC). Several other ponderosa pine dominated PPC's strata are also classified in the mollisol order while other slightly thinner organic surfaces classified as mollic integrade soils. Soils classified as mollisols indicate that historically, the soil was probably dominated by a competitive, herbaceous understory layer or grassland that brokedown and formed a thick, organic layer over time, especially on deep soils (> 40 inches to bedrock). Mollisols have thicker organic surfaces than mollic integrade (near

mollisol soils). Mollisols on deep soils have a higher capability (greater water holding capacity) to support more biomass including herbaceous understories than on rocky or shallow mollic integrade soils.

Historically, mollisols were likely dominated by grassy, herbaceous understories capable of out competing trees for soil moisture and nutrients and carrying ground fires that resulted in seedling and sapling mortality, open canopies, grassy interspaces and fewer trees. Currently, many deep soils (>40 inches to bedrock) within mollisols in the Ponderosa Pine type have closed canopies (>30 percent) in interspaces and greater than about 45 percent on mollic integrades (Steinke 2007) stemming from decades of fire suppression and grazing disturbance. Based on soil type and field observations of canopy cover, age class and old stump presence, mollisols (especially deep ones) historically probably supported grassy interspaces or open canopy covers (10 – 30 percent) and mollic integrade soils probably supported somewhat closed stands (slightly greater than 30 percent) on rocky or shallow soils and open on deep or moderately deep soils.

Ponderosa pine current canopy covers on mollisols and mollic integrade soils are variable but commonly exceed 30 – 50 percent or more (representative of a closed canopy state). Historically and where these soils occur as a complex, there were probably clumps of trees on mollic integrades and grassy interspaces on mollisols.

Most other soils in other strata are classified in the Alfisol soil order and have thin organic soil surfaces indicating development under forest stand structure probably with less herbaceous understory than the mollisol and mollisol integrade soils.

A few strata have ponderosa pine , mixed conifer and pinyon-juniper PPC strata that fall into the Inceptisol, Andisol or Entisol soil order and are less developed soils with thinner organic soil surfaces than the mollisol and mollisol integrade soils mentioned above or are located on steep slopes greater than about 15%.

Use of Internal Soil Study (Steinke, 2007)

Two studies were complete (Steinke 2007a and 2007b) internally on representative sites on both the Kaibab and Coconino National Forests in 2007 by Rory Steinke. These studies provided useful information used in the 4-FRI analysis into characterizing existing and desired conditions in understanding what presettlement conditions may have looked like as a sideboard to determine treatment proposals.

The analysis attempted to determine historic vegetative stand structure (grassland, open or closed forest stand) of ponderosa pine dominated mollisols (those soils with a high accumulation of surface organic matter common in grasslands), and mollic integrade soils (those soils with thinner organic matter accumulations in the soils surface) on the Coconino National Forest.

The central question posed is were current ponderosa pine vegetation types found on mollisol soils present historically or are they grassland vegetation types that have been invaded by ponderosa pine through disturbances or lack thereof? Details of methodology and findings can be found in (Steinke 2007a and 2007b).

Conclusions of Study:

This analysis concludes that the ponderosa pine potential natural vegetation type (PNVT) which includes ponderosa pine type strata was dominated (possibly 68 percent to 79 percent for CNF and about 69 percent on the KNF) by an open stand structure (10 to 30 percent canopy cover) on mollisols and mollic integrade soils. In addition, the ponderosa pine PNVT occurs on other non-mollisol soils throughout the Coconino National Forest. Therefore, historically, ponderosa pine vegetation types were found on mollisol soils historically and the great majority of sites were not grassland sites invaded by ponderosa pine. However, it is clear that over time, the majority of the ponderosa pine PNVT in the central and northern portions of the forest has increased in density and canopy cover with the lack of fire disturbance in the ecosystem.

Most sites visited in ponderosa pine PNVT's appear to have been historically dominated by open forest stands (10-30 percent tree canopy cover) especially in the central and northwest part of the Coconino and Kaibab Forests where ponderosa pine and Arizona fescue plant associations prevail. Some scattered ponderosa pine and Gambel oak plant associations located in the central or southern portions of the forest (Mogollon Rim Ranger District) appear to have been closed forest stands (>30 percent canopy cover) possibly due to slightly more annual precipitation received.

Current canopy covers on mollisols and mollic integrade soils are variable but commonly exceed 30 to 50 percent or more (representative of a closed canopy state). Historically these soils probably supported clumps of trees and grassy interspaces. It is speculated that mollisol and mollic integrade soils supported more herbaceous biomass in interspaces than soils with thinner organic surface horizons. However, this analysis cannot conclude that thinner organic soils (generally perceived to be forest soils) have smaller, less herbaceous interspaces and greater tree canopy covers than mollisol and mollic integrade soils because it was not analyzed.

Historic canopy covers were probably variable but dominated by "Open" stand structure. Natural fire disturbance probably maintained these stands in "Open" states. It is hypothesized that the entire forest was not historically "Open" because multiple seral stages probably existed forest-wide following fire disturbance or lack thereof creating areas of "Open", "Closed" and early seral "Grassland" states.

Pinyon-Juniper PNVTs:

Although the conclusions above are based on ponderosa pine vegetation types, many of the same conditions, disturbances and processes occur in the Pinyon-Juniper Woodlands including non-Woodland soils (thinner, organic layer). Acres of pinyon-juniper woodlands in the 4 FRI project area is very limited (about1000 acres). Soils have thin organic surface classified mostly as Alfisols.

Currently many PJ stands are closed (>30 - 50 percent canopy cover) with little or no herbaceous interspaces as a result of fire suppression, grazing disturbance and drought. PJ Woodlands in less disturbed sites provide herbaceous interspaces under a more open canopy (10 – 30 percent). Personal observations indicate where PJ Woodland canopy cover exceeds about 40 percent, there is little to no herbaceous understory (with and without grazing) and soil condition declines.

Soil Interpretations
Appendix A and B lists soil interpretations by TES map (ecological) unit by strata that have similar soil properties that result in similar limitations, hazards and suitability and pontentials for forest management.

Erosion Hazard

The TES defines erosion hazard (TESH 1984) as the probability of soil loss resulting from the complete removal of vegetation and litter. A slight rating indicates that all vegetative ground cover could be removed from the site and the resulting soil loss will not exceed "tolerance" soil loss rates. A moderate rate indicates that predicted rates of soil loss will result in a reduction of site productivity *if left unchecked*. Conditions in moderate erosion hazard sites are such that reasonable and economically feasible mitigation measures can be applied to reduce or eliminate soil loss. A severe rating indicates that predicted rates of soil loss have a high probability of reducing site productivity before mitigating measures can be applied.

Within the analysis area, the following strata (Appendix A) are dominated by soils with severe erosion hazard, 16, 17, 19, 20, 32, 35, 38, 41, 42, 43, 44, 45, and portions of 47, 48, and 49. Strata 18, 22, 31, 33, 34, 36, 50 (a total of about 133,850 acres or about 13 percent of the analysis area), and portions of 21, 47, and 48 have soils dominated with moderate erosion hazard (about 52, 750 acres, or about 5 percent of the area). The remaining strata including, 1 – 15, 23, 24, 25, 26, 27, 28, 29, 30, 37, 39, 40, and most of 46 have soils with slight erosion hazard (about 805,700 acres, or about 81 percent of the analysis area). Identified resource protection measures are required to assure accelerated soil erosion does not occur that would impair soil productivity

Timber Harvest Limitation

Timber harvest limitations are limits to be considered when evaluating the impact of timber harvesting by equipment sue with regard to maintenance of soil productivity. It includes slope, erosion hazard, soil strength and surface rock fragment factors. A slight rating does not restrict the kind or time of year for harvesting and has low risk of soil productivity impairment.

All strata within ponderosa pine PPC’s have moderate or severe limitations except most of strata 21. Identified resource protection measures are required to assure accelerated soil erosion and compaction do not impair soil productivity.

Natural Regeneration Potential

Natural regeneration potential refers to the probable success in the establishment and survival of trees under inherent site conditions and alerts the land manager to sites that have the most desirable soil and climate properties for successful natural regeneration. This rating is influenced primarily by climate and soil characteristics. A high potential rating does not have soil limitations that restrict establishment and growth of natural regeneration of trees. A low rating has soil limitations that can be expected to severely prevent establishment and growth of natural regeneration of trees and moderate has reduced potential for natural regeneration. Soils associated with a high rating offer the best opportunity for success followed by moderate and lastly low.

The following strata have low natural regeneration potential; 30, 31, 34, 36, 37, 38, 39, 40, 41, 43, 44, 47 and portions of 33, 35, 42, 46, 48, and 49. All of the remaining strata have moderate or high potential for natural regeneration. Moderate and high rated strata have the most desirable

soil and climate properties for successful regeneration of trees. These soils can be expected to regenerate and grow trees more successfully than low rated sites.

Soil Condition

A soil condition category following protocol from (USDA Forest Service, FSH 2509.18, R3 Supplement No 2509.18-99-1) is assigned to each ecological unit and the soil condition ratings are based on interpretations of the three primary soil functions: soil hydrologic function, soil stability and nutrient cycling. Under this broad scale level of analysis (landscape scale by strata), it is important to note that soil conditions within a given ecological unit may vary somewhat but most strata are one single soil condition class.

Soil condition classes used are Satisfactory, Impaired, Unsatisfactory and Inherently Unstable known as Unsuited on the Kaibab National Forest. The following are definitions describe each class.

Satisfactory: Indicators signify that soil function is being sustained and soil is functioning properly and normally. The ability of the soil to maintain resource values and sustain outputs is high.

Impaired: Indicators signify a reduction in soil function. The ability of the soil to function properly and normally has been reduced and/or there exists an increased vulnerability to degradation. An impaired category indicates there is a need to investigate the ecosystem to determine the cause and degree of decline in soil functions. Changes in land management practices or other preventative measures may be appropriate.

Unsatisfactory: Indicators signify that a loss of soil function has occurred. Degradation of vital soil functions result in the inability of the soil to maintain resource values, sustain outputs or recover from impacts. Unsatisfactory soils are candidates for improved management practices or restoration designed to recover soil functions.

Inherently Unstable or Unsuited: These soils have natural erosion exceeding tolerable limits. Based on the Universal Soil Loss Equation (USLE) these soils are eroding faster than they are renewing themselves but are functioning properly and normally.

Overall and in the ponderosa pine strata on slopes less than about 40 percent, soil condition is satisfactory due to the presence of high and adequate amounts of vegetative ground cover that protects the soil against accelerated erosion and compaction condition (about 841,500 acres or about 85 percent of the analysis area). On strata where slopes are greater than about 40 percent (strata 42, 43, 47 and portions of 44 and 45) soil condition is unsuited or also known as inherently unstable where natural erosion exceeds tolerable erosion (about 30,000 acres). These soils and strata are not suitable for mechanical timber harvesting and identified BNP's will be used to protect soil resource when prescribed burning.). The other 15% are dominated by impaired soils located on some montane meadows and lesser amounts of inherently unstable/unsuited or unsatisfactory soils.

Although most soils rate out as satisfactory, nutrient cycling is reduced in dense stands (including those in FRCC 2 and 3) and is nearly impaired soil condition overall. The amount of coarse woody material is not quantified but maintenance of 5-7 tons/acre of coarse woody material will improve soil nutrient cycling (USDA, 1994b) and listed as a BMP.

Overall and in the ponderosa pine strata on slopes less than about 40 percent, soil condition is satisfactory due to the presence of high and adequate amounts of vegetative ground cover that protects the soil against accelerated erosion and compaction (about 841,500 acres or about 85 percent of the analysis area). The other 15% are dominated by impaired soils located on some montane meadows and lesser amounts of inherently unstable/unsuited or unsatisfactory soils.

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On strata where slopes are greater than about 40 percent (strata 42, 43, 47, and portions of 44 and 45) soil condition is unsuited or also known as inherently unstable where natural erosion exceeds tolerable erosion (about 30,000 acres). These soils and strata are not suitable for mechanical timber harvesting and identified best management practices (BMPs) would be used to protect soil resource when prescribed burning.

Soil condition on a little more than half of the acres in montane meadows (strata 1, 2, 4, 6, and 10) are impaired on the Coconino NF and listed as satisfactory on the Kaibab NF (about 44,476 acres). However, it is probable that the soil condition in these montane meadows is impaired on the Kaibab NF. Refined soil condition assessments that included all three soil functions were not conducted and the assessment was based solely on the ability of the soil to resist erosion. Soil condition in montane meadows located in strata 3, 5, 7, and 8 (about 38,744 acres) is satisfactory.

Since these strata are located on flat slopes, it is improbably for the soils to erode faster than renew themselves but most often, these soils have reduced hydrologic and nutrient cycling functions.

Strata 9 are wetlands where soil condition is rated as unsatisfactory on the Coconino NF and satisfactory on the Kaibab NF but similar to the discussion above, soils on the Kaibab NF are likely to be in unsatisfactory condition (about 4,400 acres).

Soil condition on pinyon juniper vegetation types on slopes less than 40 percent (strata 46-about 1,000 acres) is variable and has areas of satisfactory, impaired and a few areas have unsatisfactory soil condition. Impaired and unsatisfactory soil conditions generally have overstocked tree canopy, resulting in poor herbaceous understory composition and productivity, poor nutrient cycling function, low vegetative ground cover and accelerated erosion

Watersheds and Condition

The project lies within 82, 6th code watersheds, (see Appendix C). Fifth and 6th HUC names, watershed condition class, acres within and outside of proposed treatment area (Alternative B) are listed. The Watershed Condition Framework (WCF) protocol (USDA, 2010a, 2010b) was used to classify watershed conditions at the 6th HUC level in spring, 2011 including 12 watershed indicators.

Watershed condition is the state of the physical and biological characteristics and processes within a watershed that affect the hydrologic and soil functions supporting aquatic ecosystems. The WCF (USDA, 2010a, 2010b) rates watershed condition in 3 classes defined below.

- Class 1 watersheds are **functioning properly** and exhibit high geomorphic, hydrologic, and biotic integrity relative to their natural potential condition.
- Class 2 watersheds **functioning at risk** and exhibit moderate geomorphic, hydrologic, and biotic integrity relative to their natural potential condition.
- Class 3 watersheds are **impaired function** and exhibit low geomorphic, hydrologic, and biotic integrity relative to their natural potential condition.

The purpose of the WCF is to shift focus from species and sites to the ecosystems that support them in order to understand consequences of management actions before selecting a proposed action and implementation and was considered in the development of the proposed action. The WCF is used to disclose affected environment at the watershed scale and analyze cumulative effects of the action alternatives in 4 FRI.

Overall, ponderosa pine vegetation types are dominated by functional at risk 6th HUC watersheds (about 451,500 acres, or 46 percent of the analysis area and about 1,214,339 acres, or about 59%, of the entire 6th codes acreage associated with the project acres) with a several impaired watersheds (about 316,800 acres, or about 32 percent of the analysis area and about 458,391 acres, or about 22%, of the entire 6th codes acreage associated with the project acres) and a few properly functioning watersheds (about 220,400 acres, or about 22 percent of the analysis area and about 394,285 acres, or about 19%, of the entire 6th codes acreage associated with the project acres) as defined by 12 indicators that were used to assess watershed condition through the Watershed Condition Framework (USDA 2011). The table below displays the watershed condition of the 6th code watersheds that occur within the analysis area. Watershed dysfunction in the treatment area is a result in large part from dense forests with fire regime condition classes of 2 or 3, high density of road networks that can alter hydrology, riparian condition less than functional and other factors.

Table 11. List of 6th code watersheds as defined by the Watershed Condition Framework

Impaired Function	Functioning at Risk	Functioning at Risk
Babbitt Lake	Anderson Canyon	Middle Sycamore Creek
Big Spring Canyon	Bear Canyon	Miller Wash Headwaters
Doney Park	Bear Jaw Canyon	Mormon Canyon
Dry Creek	Cataract Creek Headwaters	Porcupine Canyon-Walnut Creek
Garland Prairie	Cedar Creek	Pumphouse Wash
Grapevine Canyon	Cherry Canyon-Walnut Creek	Rabbit Canyon
MC Canyon	Coconino Wash Headwaters	Rain Tank Wash
Middle Oak Creek	Curley Wallace Tank	Rattlesnake Canyon
Pitman Valley-Scholz Lake	Dent and Sayer Tank	Rattlesnake Wash
Sawmill Tank	Devil Dog Canyon	Sawmill Wash
Tule Canyon	Dogtown Wash	Smoot Lake
Upper Hell Canyon	Double Cabin Park-Jacks Canyon	Spring Creek
Upper Red Lake Wash	Government Canyon	Upper Cataract Creek

Impaired Function	Functioning at Risk	Functioning at Risk
Upper Spring Valley Wash	Government Prairie	Upper Cedar Wash (Local Drainage)
Upper Sycamore Creek	Grindstone Wash	Upper Deadman Wash
Walnut Creek-Upper Lake Mary	Jacks Canyon	Upper Lee Canyon
Functioning Properly	Johnson Creek	Upper Oak Creek
Bar M Canyon	Kinnikinick Canyon	Upper Padre Canyon
Cinder Basin	Klostermeyer Lake	Upper Rio de Flag
Fry Canyon	Little Red Horse Wash	Upper San Francisco Wash
Juan Tank Canyon	Long Lake-Chavel Pass Ditch	Upper Woods Canyon
Little LO Spring Canyon	Lower Deadman Wash	Volunteer Canyon
Lower Rio de Flag	Lower Sycamore Creek	Volunteer Wash
Meath Wash	Lower Woods Canyon	Walnut Creek-Lower Lake Mary
Middle Spring Valley Wash	Middle Deadman Wash	Yeager Draw
Mormon Lake		
Munds Canyon		
Red Horse Wash Headwaters		
Secret Canyon		
Sinclair Wash		
Telephone Tank		
Upper Kana-a Wash		
West Fork Oak Creek		

The following 5th HUC watersheds have few to several 6th HUC watershed in the impaired function condition class totaling at least 33percent of total 5th HUC area, Cataract Creek Rio de Flag, Spring Valley, Sycamore Creek, Upper Cedar wash and Walnut Creek. Pease see Appendix C for detailed condition class by 6th HUC watershed and acres.

Conclusions

Existing Conditions:

Most soils and strata are in satisfactory soil condition and have the ability to resist accelerated erosion. Most strata in the ponderosa pine type currently have closed stand structure and appear to have high canopy covers and densities that have reduced the understory forage productivity although there is generally sufficient vegetative ground cover to reduce accelerated erosion. Due to the closed stand structure, most soils and strata have relatively high risk of crown fire that also pose a high risk of moderate or high burn severity to the watershed including life, property, soil productivity and water quality under normal or extreme fire behavior conditions (assuming current FRCC are dominated by class 2 and 3 (6^{th} HUC Watershed Condition Classification, in process). Fires resulting in moderate or high burn severity pose substantial risk to life, property, soil productivity, watershed function and downstream water quality to connected streamcourses on soils with moderate or high erosion hazard following storm events.

Overall and in the ponderosa pine strata on slopes less than about 40 percent, soil condition is satisfactory due to the presence of high and adequate amounts of vegetative ground cover that protects the soil against accelerated erosion and compaction. On strata where slopes are greater than about 40 percent (strata 42, 43, 47 and portions of 44 and 45) soil condition is unsuited or also known as inherently unstable where natural erosion exceeds tolerable erosion. These soils and strata are not suitable for mechanical timber harvesting and identified BMP's will be used to protect soil resource when prescribed burning.

On strata where slopes are greater than about 40 percent (strata 42, 43, 47, and portions of 44 and 45) soil condition is unsuited or also known as inherently unstable where natural erosion exceeds tolerable erosion (about 30,000 acres). These soils and strata are not suitable for mechanical timber harvesting and identified best management practices (BMPs) would be used to protect soil resource when prescribed burning.

Soil condition on a little more than half of the acres in montane meadows (strata 1, 2, 4, 6, and 10) are impaired on the Coconino NF and listed as satisfactory on the Kaibab NF (about 44,476 acres). However, it is probable that the soil condition in these montane meadows is impaired on the Kaibab NF. Refined soil condition assessments that included all three soil functions were not conducted and the assessment was based solely on the ability of the soil to resist erosion. Soil condition in montane meadows located in strata 3, 5, 7, and 8 (about 38,744 acres) is satisfactory.

Since these strata are located on flat slopes, it is improbably for the soils to erode faster than renew themselves but most often, these soils have reduced hydrologic and nutrient cycling functions.

Strata 9 are wetlands where soil condition is rated as unsatisfactory on the Coconino NF and satisfactory on the Kaibab NF but similar to the discussion above, soils on the Kaibab NF are likely to be in unsatisfactory condition.

Soil condition on pinyon juniper vegetation types on slopes less than 40 percent (strata 46) is variable and has areas of satisfactory, impaired and a few areas have unsatisfactory soil condition.

5th and 6th HUC watershed condition is variable. Overall, ponderosa pine vegetation types are dominated by functional at risk 6th HUC watersheds with a several impaired watersheds and properly functioning watersheds many of which are located in Wilderness Areas. Fire regime condition class (FRCC) is one of 12 indicators used to assess condition and was rated as poor (FRCC 3).

The following 5th HUC watersheds have few to several 6th HUC watershed in the impaired function condition class totaling at least 33 percent of total 5th HUC area, Cataract Creek Rio de Flag, Spring Valley, Sycamore Creek, Upper Cedar wash and Walnut Creek. Pease see Appendix C for detailed condition class by 6th HUC watershed and acres.

Overall, the 4-FRI area selected for large-scale restoration efforts has at least 50 percent of the area, or roughly 500,000 acres, that are well suited to timber harvest and hazardous fuel reduction and restoration activities. This does not mean the other strata are automatically excluded. What it does signify is that appropriate resource protection measures, BMP's and mitigation will need to

be implemented to maintain soil productivity and are listed in the Resource Protection Measures by strata above.

Other interpretations listed in Appendix A and B are defined in the TES of the Kaibab and TES of the Coconino National Forest.

Watersheds at the 6th Hydrologic Unit Code (HUC) Scale

Existing Conditions

The project lies within 82, 6th code watersheds. The Watershed Condition Framework (WCF) protocol was used to classify watershed conditions at the 6th HUC level in spring, 2011 including 12 watershed indicators.

Overall, ponderosa pine vegetation types are dominated by functional at risk 6th HUC watersheds (about 451,500 acres, or 46 percent of the analysis area and about 1,214,339 acres, or about 59%, of the entire 6th codes acreage associated with the project acres) with a several impaired watersheds (about 316,800 acres, or about 32 percent of the analysis area and about 458,391 acres, or about 22%, of the entire 6th codes acreage associated with the project acres) and a few properly functioning watersheds (about 220,400 acres, or about 22 percent of the analysis area and about 394,285 acres, or about 19%, of the entire 6th codes acreage associated with the project acres) as defined by 12 indicators that were used to assess watershed condition through the Watershed Condition Framework (USDA, 2011). Watershed dysfunction in the treatment area is a result in large part from three indicators including, dense forests with fire regime condition classes of 2 or 3, high density of road networks that can alter hydrology, riparian condition less than functional and intersection of roads and stream courses.

Environmental Consequences

Summary of Environmental Consequences to Soils

Forest Erosion Processes

Forests generally have very low erosion rates unless they are disturbed. Common disturbances include prescribed and wild fire, and harvesting operations. Vegetative recovery after fuel treatments is generally very rapid, with erosion rates typically dropping to pre-fire levels within 1 to 2 years (Elliot et al. 2010).After that, the rapid regrowth of vegetation soon covers the surface with plant litter, and potential erosion is quickly reduced. In one study, Robichaud and Brown (1999) reported that erosion rates dropped from almost 40 Mg ha-1 the first year after a fire to 2.3 Mg ha-1 the second, and 1 Mg ha-1 the third year. If the year is normal or dry, then it is unlikely for there to be any significant erosion (Elliot 1999).

Soil tolerance soil loss rate is the rate of soil loss than can occur while sustaining inherent site productivity (TES, 1995). Soils in each TES ecological unit are assigned tolerance soil loss rates based on individual soil and climate properties and approximate annual soil renewability levels. Maintaining soil erosion below soil tolerance levels assures soil productivity will be maintained from an erosion standpoint.

Current Soil Erosion

Current and predicted Soil erosion was modeled for all alternatives using the Water Erosion Prediction Project (WEPP) disturbed WEPP (USDA 2006) model found online at http://forest.moscowfsl.wsu.edu/fswepp/. Disturbed WEPP is designed to predict runoff and sediment yield from undisturbed and harvested forests and prescribed and wildfires. Table 12 displays predicted soil erosion for the most representative soil in ponderosa pine ecosystems by slope class. Tolerable soil loss values are **2-4 tons/acre** depending on soil type. Some steep slope greater than 40 percent have soil inclusions with tolerable soil loss values equal to about 1 but are

generally minor in extent (less than about 15 percent). Table 12 displays erosion modeling summary information. Cells shaded gray have erosion exceeding tolerable soil loss. Soil loss

Alternative A (Undisturbed) Slope Class (Percent)	Erosion in tons/acre/year	Sediment Leaving Profile in tons/acre/year	T Values in Tons/Acre/Year
0-15	0	0	2-4
15-40	0	0	2-4
40-120	0	0	2-3
High Burn Severity (Alt A Possible)			
0-15	1.23	.40	2-4
15-40	6.89	2.68	2-4
40-120	15.89	6.23	2-3
Alternative B, C, D (Low Burn Severity, Prescribed & Managed Fire)			
0-15	.04	.004	2-4
15-40	.43	.14	2-4
40-120	1.08	.37	2-3 (possible inclusions of 1 for some soils)
Alternative B, C, D (Mechanically Thinned Forests			
0-15	0	0	2-4
15-40	0	.004	2-4
40-120	.08	.009	2-3

Table 12. 10-Year Return Period Predicted Soil Erosion (No Treatment or Disturbance)

exceeding tolerable amounts erode faster than renew themselves resulting in accelerated soil loss and loss of soil productivity as well as deliver high amounts of sediment to connected streamcourses.

For all alternatives, predicted soil loss rates are below tolerable amounts on slopes less than 40 percent. On slopes greater than about 40 percent and for alternatives B, C, and D, modeling shows erosion is about 1/tons/acre/year which is less than the TES identified tolerable limits of 2 tons/acre/year. However, it is probably that there are inclusion soils not designed in the main TES components with T values of 1 ton/acre/year on various portions of the steep landscape. Therefore, mechanical harvesting would likely result in erosion above tolerable limits in some minor portions of the landscape on steep slopes.

Erosion exceeds tolerable soil loss rates where soils have been exposed to high burn severity predominantly in wildfires on slopes greater than 15 percent and on some slopes greater than 40 percent in inclusion soils where prescribed or managed fire occurs (shaded gray). High burn severity is more likely to occur where forests are untreated (alternative A) and risk soil loss above tolerable levels resulting in loss of soil productivity and sediment delivery to connected streamcourses.

Forests generally have very low erosion rates unless they are disturbed (Elliot 1999, WEPP technical documentation). Common disturbances include prescribed and wild fire, and harvesting operations.

Soil Disturbance

Across all action alternatives, total maximum soil disturbance by individual treatment type within treatment areas ranges from less than about .1 percent to 4 percent with high intensity thinning causing the highest soil disturbance (Attachment 1 and Soil Disturbance Calculation by Treatment Area and 6th HUC Watershed by Alternative Steinke, 5/9/2012).

Soil disturbance of all treatment types combined within the treatment area by watershed range from 0 percent to 18.2 percent for B and C and 0 percent to 16.4 percent for C (attachment #1). Total, maximum soil disturbance at the 6th HUC watershed level ranges from 0 percent to 11 percent for B and C and 0 percent to 10 percent for C. Only Alternatives C and B have a few treatment areas in watersheds where soil disturbance would be above 15percent but less than 20 percent located in the following watersheds, Government Canyon, Juan Tank Canyon, Upper Sycamore, Sinclair wash, Fry Canyon, Volunteer Wash, Cherry Canyon-Walnut Creek and Yeager Draw. Implementation of identified soil and water resource mitigation measures and BMPs is expected to minimize soil erosion and maintain soil productivity and water quality.

A detailed effects analysis is found and summarized by alternative in this report and also found in the section entitled comparison of alternatives at the end of the effects analysis. Below is a summary of key findings.

Key Finding

Implementation of Alternative A would not meet the projects purpose and need to improve and protect soil condition, productivity and watershed function nor move towards the desired condition of having soils in satisfactory condition and soil productivity maintained and watersheds properly functioning. It would not meet the projects purpose and need nor move towards the desired conditions of a resilient forest by reducing the potential for undesirable fire behavior and its effects and maintaining the mosaic of tree groups and interspaces with frequent, low-severity fire by having a forest structure that does not support wide-spread crown fire.

Implementation of Alternative A would not increase forest resiliency to natural disturbances and would not improve or protect soil condition and soil productivity or watershed function as well as all other action alternatives Implementation of Alternative A would put soils and watersheds at risk of continued uncharacteristic wildfires that could result in loss of soil productivity and sediment delivery to connected streamcourses.

There are no identified soils on slopes ranging from 40 percent to 120 percent where tolerable soil loss value is 1 ton/acre/year except possible minor soil inclusions that likely total less than 15 percent. Therefore, the use of prescribed or managed fire on these slopes do not pose risk to soil productivity assuming high burn severity is minimal (< about 2percent). Slopes over 15percent subject to high burn severity (alt A possible) could result in accelerated soil loss and have erosion rates higher than tolerable soil loss posing risk to soil productivity.

Key Finding

Implementation of alternative D would not meet the projects purpose and need as well as other action alternatives but would come closer than alternative A.

Key Finding

Implementation of alternatives B and C meet the projects purpose and need and meet the Kaibab NF and Coconino NF forest plan standards and guidelines. Implementation of alternative D would meet the forest plans standards and guidelines but not fully meet the purpose and need of this project.

Soil Condition, Productivity and Watershed Function

Table 5a. Comparison of Effects to Soil Condition and Productivity by Alternative

	Alternative A	Alternative B	Alternative C	Alternative D
Acres Treated for Improvement, Maintenance and Protection of Soil Condition and Productivity	0	587,923	593,211	470,148
Summary of Comparison of Improvement, Maintenance and Protection of Soil Condition and Productivity	None	thinning stands and prescribed burning will increase understory response on about 388,500acres and burn only on about 199,400 acres will decrease wildfire threat and improve soil condition and productivity on about	thinning stands and prescribed burning will increase understory response on about 434,000 acres and burn only on about 159,200 acres will decrease wildfire threat and improve soil condition and productivity on	thinning stands and will increase understory response on about 388,500 acres, however, not prescribed burning will leave about 25% of those treated acres subject to high severity surface fire effects that

		587,923 acres	about 593,211 acres	can compromise long-term soil productivity and burn only on about 179,000 acres will decrease wildfire threat and improve soil condition and productivity on about 470,148 acres.

Table 5b. Comparison of Effects to Watershed Function by Alternative

Watershed Condition Indicator and Treatment Improving and Maintaining Watershed Function	Alternative A	Alternative B	Alternative C	Alternative D
Hazardous Fuel Reduction acres resulting in improvement, protection and maintenance of soil condition and productivity	0	587,923	593,211	470,148
Potential for High Severity Burns	200,000 acres or 34%	23,000-41,000 acres or 4-7%	Same as B	23,000-41,000 acres or 4-7% in crown fire, but surface fire intensity would be similar to A on about 25% of mechanical treatment acres.
Ephemeral Stream Restoration (miles)	0	39 miles. Of which 19 miles are in functioning at risk watersheds, 11 miles are in functioning proper watersheds and 9 miles are in impaired function watersheds	Same as B	Same as B
Road and Route Decommission (miles)	0	904 miles. Of which, 496 miles are in functioning	Same as B	Same as B

		at risk watersheds, 182 miles are in functioning proper watersheds and 226 miles are in impaired function watersheds.		
Overall Change in Watershed Function	None. Continue to have high amounts of functioning at risk and impaired watersheds. 19% are functioning properly, 58% are functioning at risk, 22% are imparied	Moves toward improved watershed function through a positive change in fuels reduction and improved soil productivity on 23% of the functioning at risk (or about ¼ of the 58%) and 42% of the impaired watersheds. Reduces open road density by 496 miles are in functioning at risk watersheds, and 226 miles are in impaired function watersheds. Stream channel treatments improve water flow regime on 19 miles of functioning at risk and 9 miles in impaired watersheds	Same as Alternative B. Roads and stream channels are the same as Alt B.	Moves toward improved watershed function through a positive change in fuels reduction and improved soil productivity on 18% of the functioning at risk and 34% of the impaired watersheds. Roads and stream channels are the same as Alt B.

Key Finding

Implementation of Alternative A would not meet the projects purpose and need to improve and protect soil condition, productivity and watershed function nor move towards the desired

condition of having soils in satisfactory condition and soil productivity maintained and watersheds properly functioning. It would not meet the projects purpose and need nor move towards the desired conditions of a resilient forest by reducing the potential for undesirable fire behavior and its effects and maintaining the mosaic of tree groups and interspaces with frequent, low-severity fire by having a forest structure that does not support wide-spread crown fire. Implementation of Alternative A would not increase forest resiliency to natural disturbances and would not improve or protect soil condition and soil productivity or watershed function as well as all other action alternatives Implementation of Alternative A would put soils and watersheds at risk of continued uncharacteristic wildfires that could result in loss of soil productivity and sediment delivery to connected streamcourses.

Key Finding

Implementation of Alternative D would not meet the projects purpose and need as well as other action alternatives but would come closer than Alternative A. Far fewer acres would be treated with prescribed fire and maintenance resulting in long-term buildup of hazardous fuels and increased canopy cover of trees that pose risk to soil productivity and watershed function from uncharacteristic fires and nutrient cycling soil functions from sparse understories.

Key Finding

Implementation of Alternatives B and C meet the projects purpose and need and meet the Kaibab and Coconino national forest plan standards and guidelines. Soil condition, productivity and watershed function would greatly improve, be maintained and protected. Alternative C would be slightly more beneficial than B because more grasslands would be treated resulting in improvement of soil condition and productivity on a slightly larger acreage than Alternative B (about 593,000 to 588,000 acres). Implementation of Alternative D would meet the forest plans standards and guidelines but not fully meet the purpose and need of this project.

Overall, implementation of the proposed action is expected to maintain, improve and protect long-term soil productivity and watershed function much better than Alternative A because there will be no improvement in understory response due to thinning and burning activities in the Alterantive A. Alternative B does propose thinning and prescribed fire activities that are expected to provide long-term soil improvements on about 588,000 acres, while Alterantive C proposes about 593,000 acres. Alternative D proposed thinning only on about 388,000 acres, and prescribed burning on about 178,000 acres. The thinning and burning will provide improvement to soils by improving understory species composition, but does still maintain high fuel loadings that can have high surface fire effects tht can damage soils. This is expected to occur on about 25% of the mechanical treatment sites, so Alteratnive D has effective soil productivity treatments on about 470,000 acres. However, implementation of Alternative C would better restore grasslands than Alternative B and still has about the same amount of soil disturbance treatment area wide and at the 6th HUC watershed level. Implementation of Alternatives B and C would reduce the risks to life, property, soil productivity and water quality from post wildfire storm events (flooding and debris flows) much better than A and D.

Executive Summary of Environmental Effects All Alternatives

Since no restoration treatments are proposed for alternative A, there would be no acres of soil disturbance in the treatment area or 6th HUC watershed from mechanical equipment and consequently no direct effects to the soil.

Implementation of Alternative A would not meet the projects purpose and need to improve and protect soil condition, productivity and watershed function nor move towards the desired condition of having soils in satisfactory condition and soil productivity maintained and watersheds properly functioning. It would not meet the projects purpose and need nor move towards the desired conditions of a resilient forest by reducing the potential for undesirable fire behavior and its effects and maintaining the mosaic of tree groups and interspaces with frequent, low-severity fire by having a forest structure that does not support wide-spread crown fire. Implementation of Alternative A would not increase forest resiliency to natural disturbances and would not improve or protect soil condition and soil productivity or watershed function as well as all other action alternatives Implementation of Alternative A would put soils and watersheds at risk of continued uncharacteristic wildfires that could result in loss of soil productivity and sediment delivery to connected streamcourses.

Implementation of alternatives D would cause a little less soil disturbance than B and B a little less than C. Treatment area wide, implementation of alternative D would cause about 9.3percent, B about 10.4 percent and C about 11.2 percent. At the watershed level, D would cause about 2.6 percent followed by C at 3.3 percent and B at 3.0 percent. Implementation of alternative D would cause less soil disturbance treatment area wide and at the 6th HUC watershed level than alternatives B and C because there would be at least 50 percent less prescribed fires from lack of proposed fire treatment in areas of mechanical treatment.

Even though alternative D soil disturbance would be a little less than alternatives B and C, implementation of B and C would better maintain, improve and protect soil condition, productivity and watershed function because of the increased potential high severity fire from wildfire on untreated existing fuel loadings in harvest areas in alternative D. Soil disturbance in B and C would be minimal (<15 percent and of low magnitude, short-term) and mitigated through implementation of (BMP's). Implementation of alternatives B or C would do a much more effective job of reducing the risk of uncharacteristic wildfire that could result in loss of soil productivity, downstream water quality and watershed function.

Implementation of alternative D only partially meets the projects purpose and need as well as other action alternatives but would come closer than alternative A. Implementation of alternatives B and C would more completely meet the projects purpose and need and meet the Kaibab NF and Coconino NF forest plan standards and guidelines. Implementation of alternative D would meet the forest plan standards and guidelines but not fully meet the purpose and need of this project.

Overall, implementation of the proposed action is expected to maintain, improve and protect long-term soil productivity and watershed function much better than Alternative A because there will be no improvement in understory response due to thinning and burning activities in the Alterantive A. Alternative B does propose thinning and prescribed fire activities that are expected to provide long-term soil improvements on about 588,000 acres, while Alterantive C proposes about 593,000 acres. Alternative D proposed thinning only on about 388,000 acres, and prescribed burning on about 178,000 acres. The thinning and burning will provide improvement to soils by improving understory species composition, but does still maintain high fuel loadings

that can have high surface fire effects tht can damage soils. This is expected to occur on about 25% of the mechanical treatment sites, so Alteratnive D has effective soil productivity treatments on about 470,000 (470,165) acres. However, implementation of Alternative C would better restore grasslands than Alternative B and still has about the same amount of soil disturbance treatment area wide and at the 6th HUC watershed level. Implementation of Alternatives B and C would reduce the risks to life, property, soil productivity and water quality from post wildfire storm events (flooding and debris flows) much better than A and D.

Overall, implementation of the proposed action is expected to maintain, protect or improve long-term soil productivity and watershed function much better than alternative A, a little better than D and a little less than alternative C. However, implementation of alternative C would probably better restore grasslands than alternative B and only has a negligible increase in soil disturbance compared to B at both the treatment and 6th HUC watershed level. Implementation of Alternatives B and C would reduce the risks to life, property, soil productivity and water quality from post wildfire storm events (flooding and debris flows) much better than A and D. Implementation of alternative C more completely meets the projects purpose and need.

Key Summary Finding

Overall, implementation of the proposed action is expected to maintain, improve and protect long-term soil productivity and watershed function much better than Alternative A because there will be no improvement in understory response due to thinning and burning activities in the Alterantive A. Alternative B does propose thinning and prescribed fire activities that are expected to provide long-term soil improvements on about 588,000 acres, while Alterantive C proposes about 593,000 acres. Alternative D proposed thinning only on about 388,000 acres, and prescribed burning on about 178,000 acres. The thinning and burning will provide improvement to soils by improving understory species composition, but does still maintain high fuel loadings that can have high surface fire effects tht can damage soils. This is expected to occur on about 25% of the mechanical treatment sites, so Alteratnive D has effective soil productivity treatments on about 470,000 acres. However, implementation of Alternative C would better restore grasslands than Alternative B and still has about the same amount of soil disturbance treatment area wide and at the 6th HUC watershed level. Implementation of Alternatives B and C would reduce the risks to life, property, soil productivity and water quality from post wildfire storm events (flooding and debris flows) much better than A and D.

Cumulative Effects Summary Including the Proposed Action (Alternative B)

For past, present and reasonably foreseeable actions including the 4-FRI proposed action, the extent (about 5 percent) and magnitude of soil disturbance, would not be exceeded with this project within the cumulative effects boundary. Further protection of soil resources is provided by the use of Best Management Practices that minimize the potential for soil disturbance. Identified and implemented BMP's are expected to reduce the risk on accelerated erosion, sediment delivery and nonpoint source pollution to connected streamcourses and maintain water quality in all watersheds. In addition to the use of BMP's, the completion and implementation of the Travel Management EIS would further reduce the number of acres disturbed by closing and decommissioning roads within the cumulative effects boundary. Because of these facts, this alternative would not provide a detrimental cumulative effect to soil resources within the cumulative effects boundary.

Soils

Alternative A (No Action)

Direct and Indirect Effects-Soils

Since no restoration treatments are proposed, there would be no acres of soil disturbance in the treatment area or 6th HUC watershed from mechanical equipment and consequently no direct effects to the soil from implementation of alternative A.

Since there would be no prescribed burns or managed fires, there would be no acres of high burn severity in the treatment areas or 6th HUC watersheds that would indirectly affect soil productivity and water quality.There would be no direct soil or riparian disturbance to springs, seeps, streamcourses or roads.

In the absence of mechanical treatment and fire, ponderosa pine forests identified as dense or with closed stand structures or in fire regime condition class 3 (most of treatments area) would continue to be at risk of large uncharacteristic wildfires. Soils and watersheds burned in the high burn severity class would be devoid of protective ground cover along with water repellent hydrophobic soils leading to accelerated erosion above tolerable soil loss levels, loss of soil productivity and sediment delivered to connected streamcourses from postfire short duration, high intensity storm events.

According to WEPP soil erosion modeling, approximately 24 percent of all soils left untreated could be subject to soil erosion above tolerable levels from severe wildfires where all soils burned under condition of high burn severity. However, uncharacteristic fires on the Coconino National Forest historically have ranged from about 20-45 percent of the burn acreage resulting in high severity fire (Lata 2013). According to the fire specialist report (Lata 2013) about 33 percent of ponderosa pine forest vegetation could burn under high burn severity conditions. Therefore, if a 1,000 acre fire were to occur within the analysis area, approximately 200 to 300 acres of high intensity fire could negatively affect soil properties. It is important to realize that high burn severity from (Lata 2013) is an assessment of overstory vegetation and for this soil assessment, high severity is based on the vegetative ground cover present since that is what controls the runoff and watershed condition. Based on recent wildfires, 33 percent is a good, approximate average of high burn severity in wildfires from a watershed burn severity standpoint.

Assuming about 33 percent of wildfires would result in high burn severity; about 8 percent (table 13) of all soils in the approximate 595,000 treatment area could result in soil erosion above threshold levels resulting in loss of soil surface and soil productivity.

Without proposed treatments soil loadings of course woody debris would increase over time as new woody debris is created through natural processes (wind, snow breakage, mortality). Indirect effects from no action would be an increase in course woody debris to very high tons per acre in both live and dead fuel loads. An increase in coarse woody debris well above the forest standard of 5-7 tons/acre in ponderosa pine could contribute excessive ground fuel loads that would burn at high temperatures resulting in mineralization of surface soil horizon and organic matter where about 50 percent of soil nutrients are stored , sterilization, loss of ground cover, hydrophobic soil conditions. Subsequently, post fire storm events could result in removal of surface soil at an accelerated rate, loss of soil productivity and sediment delivery into connected streamcourses.

Lata, 2013 reports coarse woody debris about about 20-30 or more tons/acre could pose a risk to soil and cause mineralization or adverse effects to soil. Reducing coarse woody debris through the proposed action and alternatives B and C to near 5-7 tons/acre is well below the limits of 20 or more tons/acre and would result in reducing risk to soil and would maintain long-term soil productivity. Short term removal of coarse woody material through implementation of action alternatives over a 1-3 year timeframe should not affect short or long-term soil productivity since BMP #35 requires maintenance of 5-7 tons/acre/year.

Table 13. Alternative A Summary of Direct Soil Effects (acres are approximate)

Indicator	Alternative A Percent of Treatment Area	Alternative A Percent of Watershed
Soil disturbance from mechanical activities (acres/percent)	0/0	0
Soil disturbance from potential high- severity burns (acres/percent)	0/0	0 potentially 33 without treatment
Total soil disturbance from mechanical activities and high-severity fire (acres/percent)	0/0 but potentially 33	0 potentially .1-31.2
Potential soil erosion above tolerable soil loss values when 33 percent is burned in high-severity fire (percent)	8	2 (post-treatment)
Potential soil erosion above tolerable soil loss values when 100 percent is burned in high-severity fire (percent)	24	5 (post-treatment)

Table 14. Alternative A (No Treatment) 10-Year Return Period Predicted Soil Erosion

Alternative A			
Slope Class (Percent)	**Erosion in tons/acre/year**	**Sediment Leaving Profile in tons/acre/year**	**T Values in Tons/ Acre/Year**
Undisturbed No Fire/No Mechanical treatments			
0-15	0	0	2-4
15-40	0	0	2-4
40-120	0	0	2-3
High Burn Severity (Alternative A Possible)			
0-15	1.23	.40	2-4
15-40	6.89	2.68	2-4
40-120	15.89	6.23	2-3

Data by 6th HUC watershed is located in Appendix C.

Table 14 predicts soil erosion for the most representative soil in ponderosa pine ecosystems by slope class. Tolerable soil loss values are **2-4 tons/acre** depending on soil type. Cells shaded gray have erosion exceeding tolerable soil loss. Soil loss exceeding tolerable amounts erode faster than renew themselves resulting in accelerated soil loss and loss of soil productivity as well as deliver high amounts of sediment to connected streamcourses.

In the absence of fire, predicted soil loss rates are below tolerable amounts on all slopes and soils. Erosion exceeds tolerable soil loss rates only where soils have been exposed to high burn severity predominantly in wildfires on slopes greater than 15 percent and on slopes greater than 40 percent (shaded gray). High burn severity is more likely to occur where forests are untreated (Alternative A) and risk soil loss above tolerable levels resulting in loss of sol productivity and sediment delivery to connected streamcourses.

Forests generally have very low erosion rates unless they are disturbed (USDA, Rocky Mountain Research Station 2000) and at http://forest.moscowfsl.wsu.edu/fswepp/docs/distweppdoc.html. Common disturbances include prescribed and wild fire, and harvesting operations.

See Table 5a and 5b for a compares effects to soil condition, soil productivity and watershed function by alternative.

Implementation of Alternative A would not meet the projects purpose and need to improve and protect soil condition, productivity and watershed function nor move towards the desired condition of having soils in satisfactory condition and soil productivity maintained and watersheds properly functioning. It would not meet the projects purpose and need nor move towards the desired conditions of a resilient forest by reducing the potential for undesirable fire behavior and its effects and maintaining the mosaic of tree groups and interspaces with frequent, low-severity fire by having a forest structure that does not support wide-spread crown fire. Implementation of Alternative A would not increase forest resiliency to natural disturbances and would not improve or protect soil condition and soil productivity or watershed function as well as all other action alternatives Implementation of Alternative A would put soils and watersheds at risk of continued uncharacteristic wildfires that could result in loss of soil productivity and sediment delivery to connected streamcourses.

Summary

Since no restoration treatments are proposed, there would be no acres of soil disturbance in the treatment area or 6th HUC watershed from mechanical equipment and consequently no direct effects to the soil from implementation of alternative A. There would be no direct soil or riparian disturbance to springs, seeps, streamcourses or roads. Since there would be no prescribed burns or managed fires, there would be no acres of high burn severity in the treatment areas or 6th HUC watersheds that would indirectly affect soil productivity and water quality.

However, in the absence of mechanical treatment and fire, ponderosa pine forests would continue to be at risk of large uncharacteristic wildfires. Soils and watersheds burned in the high burn severity class would be devoid of protective ground cover along with water repellent hydrophobic soils leading to accelerated erosion above tolerable soil loss levels, loss of soil productivity and sediment delivered to connected streamcourses from postfire storm events. Approximately 24 percent of all soils left untreated could be subject to soil erosion above tolerable levels from severe wildfires. However, assuming about 33 percent of wildfires would result in high burn

severity; about 8 percent of all soils could result in soil erosion above threshold levels resulting in loss of soil surface and soil productivity.

Implementation of Alternative A would not meet the projects purpose and need to improve and protect soil condition, productivity and watershed function nor move towards the desired condition of having soils in satisfactory condition and soil productivity maintained and watersheds properly functioning. It would not meet the projects purpose and need nor move towards the desired conditions of a resilient forest by reducing the potential for undesirable fire behavior and its effects and maintaining the mosaic of tree groups and interspaces with frequent, low-severity fire by having a forest structure that does not support wide-spread crown fire. Implementation of Alternative A would not increase forest resiliency to natural disturbances and would not improve or protect soil condition and soil productivity or watershed function as well as all other action alternatives Implementation of Alternative A would put soils and watersheds at risk of continued uncharacteristic wildfires that could result in loss of soil productivity and sediment delivery to connected streamcourses. Implementation of Alternative a would not reduce the risks to life, property, soil productivity and water quality from post wildfire storm events (flooding and debris flows).

Cumulative Effects

The geographic setting and boundary for the cumulative effects analysis will all 82 6th HUC watersheds listed in Appendix C for a total of about 2,067,000 acres. The timeframe for past actions is 2-3 years based on vegetative and course woody debris recovery of the site. Vegetative recovery after fuel treatments is generally very rapid, with erosion rates typically dropping to pre-fire levels within 1 to 2 years (USDA, Elliot 1996). Because no actions are proposed, no direct cumulative effects are created.

Alternative B (Proposed Action)

Direct and Indirect Effects

As mentioned under the Methodology and assumptions section earlier, proposed mechanical treatments were aggregated into 5 major treatments types because they have similar soil disturbances and effects to the soil.

Appendix A displays erosion hazard, natural regeneration potential, timber harvest limitations and strata specific BMPs identified to mitigate adverse effects to soils. Appendix B displays soil taxonomic classification, potential plant community and soil condition by strata. Table 4 located in the description of alternatives section details treatment type acreage by strata for alternative B. Attachment 1 displays soil disturbance by treatment type, treatment area and 6th HUC watershed. Attachment 2 displays WEPP soil erosion modeling results. Attachment 3 displays soil interpretations by treatment type, strata, TES map unit and 6th HUC watershed. Attachment 4 lists soil disturbance in a cumulative effects analysis.

The effects to the soil resource are analyzed by treatment type disclosing predicted soil disturbance by treatment area and watershed, predicted soil loss (erosion) above tolerable soil loss thresholds and dominant erosion hazard, timber harvest limitations and BMPs identified to mitigate possible adverse soil impacts from the treatment.

Soil disturbance is calculated and predicted based on all treatments occurring during the first year including prescribed fire and predicts the worst case scenario. In reality, prescribed fire would not occur during the same year as mechanical treatments within the same watershed but likely year 2 or 3 and would not result in cumulative soil disturbance. In addition, mechanical treatments may not all occur during the same year in the same watershed

The following analysis discloses by alternative, soil disturbance and predicted effects to soil resources by treatment type. A summary of the direct effects to soils from soil disturbance and erosion above tolerable, is compared treatment area wide and by watershed (table 5) following the analysis by treatment type.

A summary of direct effects by alternatives are compared to each other on tables 3, 4 and 5 and table 5a and 5b for soil productivity and watershed function.

The 4FRI treatment area occurs within 20 fifth code watersheds (table 15) and 82 sixth code watersheds (table 11). Treatments are any actions where ground disturbance will occur and include mechanical treatments and fire treatments, as well as road and channel treatments. Fifth code HUC watersheds proposed for the most treatment (more than 33 percent) include Sycamore

Creek and Walnut Creek but would still be less than 50 percent of the entire watershed. All other watersheds would have treatments ranging from less than 1 percent to about 27 percent.

Table 15. Alternative B 5th HUC Watersheds, Acres and Percent Proposed for Treatment

5th Code Watersheds	Acres within Proposed Treatments	Acres without Proposed Treatments	Project Area Acres Grand Total	Total 5th Code Acres	Percent of 5th Code
Ash Fork Draw-Jumbo Tank	3,119	4,410	7,529	74,809	4.2
Beaver Creek	40,840	3,091	43,931	277,091	14.7
Bright Angel Creek-Colorado River	36		36	188,248	0.0
Canyon Diablo	21,403	1,287	22,690	285,899	7.5
Cataract Creek	27,338	22,079	49,417	208,323	13.1
Deadman Wash	23,910	15,549	39,459	88,040	27.2
Grindstone Wash-Verde River	1,166		1,166	136,099	0.9
Heather Wash	31,837	492	32,329	244,155	13.0
Hell Canyon	19,097	27,023	46,120	213,375	8.9
Kana-a Wash-Little Colorado River	18,721	1,308	20,028	148,519	12.6
Lee Canyon-Little Colorado River	3,870	140	4,010	181,398	2.1
Miller Wash	7,788	2,140	9,928	160,546	4.9
Oak Creek	71,863	54,637	126,500	297,719	24.1
Red Horse Wash	7,835	1,915	9,751	152,882	5.1
Rio de Flag	33,170	95,018	128,188	128,757	25.8
San Francisco Wash	15,917	7,459	23,377	228,085	7.0
Spring Valley Wash	27,908	14,066	41,974	131,371	21.2
Sycamore Creek	138,938	109,718	248,656	305,491	45.5
Upper Cedar Wash	37,173	3,759	40,931	190,715	19.5
Walnut Creek	55,995	36,749	92,744	124,313	45.0
Grand Total	**587,924**	**400,841**	**988,764**		

Grassland Restoration:

The following affects of grassland restoration apply to Alterantives B and D. About 11,200 acres are proposed for grassland restoration in several 6th HUC watersheds (see Attachment #1). Harvesting methods vary in degree of disturbance (USDA, Elliot 1999). Because this treatment is expected to be non-commercial, trees would be dropped and left on site. Fuel treatments may include lop and scatter, or machine pile concentrations. The machine piles may be either burned or chipped and removed by truck.

Harvesting either by hand or a single pass with a mechanized shear would have limited impact to soils. Some soils have moderate timber harvest restrictions due to fine textured or clayey soils. Mechanized falling can cause compaction when soils are wet with a single pass. Soil Disturbance associated with harvesting may remove a small amount of protective vegetative ground cover resulting in bare soil over the short-term (less than 3 years). Where grassland restoration occurs in the treatment area, approximately 3percent of the soil is expected to be disturbed from hand thinning or mechanical equipment when removing trees. The bare soil exposed during treatment can be expected to respond by increasing herbaceous vegetatation and litter including grass and forb production after the first year. Furthermore, herbaceous vegetation can be expected to expand in areas adjacent to areas where trees have been removed because there would be less competition for soil moisture and nutrients from trees. The increase in herbaceous vegetation and protective vegetative ground cover will better stabilize the soil and improve vegeation composition and productivity.

Treatment area wide, the amount of soil disturbance exposing bare soil is predited to be about 336 acres or.06 percent and varies by watershed (Attachment #1 calculation). However, the vast majority of soils occur in areas with slight erosion hazard (see Attachment #3) indicating exposing bare soil through treatment would not result in accelerated soil loss or loss of soil productivity. There are no acres of treatment proposed on severe erosion hazards soils in this alternative.

A threshold of 15 percent aerial extent disturbance is assigned as a guideline where soil impairment and productivity may be appreciably reduced. Since the disturbance is less than 15 percent, soil productivity is expected to be maintained. Therefore, soil disturbance associated with grassland restoration does not pose a risk to long-term soil productivity. Total soil disturbance for all treatments is displayed and analyzed following all individual treatment analysis.

Resource protection measures and BMP's are identified and are expected to mitigate erosion, loss of soil productivity and reduce nonpoint source water pollution. They are listed in table 3 for all action alternatives and by strata in Appendix A.

Harvesting operation BMP's specific for grassland restoration that would be implemented include the following, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 35, 36, 28, and 39.

Soil erosion modeling (Attachment #2) indicates that the grassland restoration will not result in soil erosion above tolerable soil loss rates and therefore soil productivity would be maintained.

Most soil conditions are satisfactory (see Attachment #3) but there are some areas with impaired or unsatisfactory soil conditions. Increased herbaceous cover improves soil infiltration and nutrient cycling because an increase in grass species corresponds to a larger root network

essential in loosening up and improvement of soil structure and promotes better water infiltration, air exchange and soil microbial cycling of nutrients. Consequently, where soil conditions are impaired or unsatisfactory, their condition can be expected to improve both in the short and long-term (greater than 2 years).

Many 6th HUC watersheds are functional at risk and a few impaired (see Appendix C) due in part to overstocked ponderosa pine forests, road networks that alter hydrology and accelerate erosion, and less than satisfactory soil condition. Reducing tree canopy cover and associated hazardous fuels would move the grassland towards a fire adapted ecosystem. Restoration would reduce the risk of uncharacteristic, high severity wildfire that could result in removal of protective vegetative ground cover, and accelerate soil erosion and sediment delivery into connected channels thereby reducing soil productivity and water quality.

Overall, grassland restoration along with other proposed treatments can be expected to increase ecosystem resiliency to uncharacteristic fire and move soils and watersheds towards satisfactory and functional condition in both the short and long-term and maintain or improve long-term soil productivity, water quality and watershed function. A threshold of 15percent aerial extent disturbance is assigned as a guideline where soil impairment and productivity may be appreciably reduced. Since the disturbance is less than 15 percent, soil productivity is expected to be maintained. Therefore, soil disturbance associated with grassland restoration does not pose a risk to long-term soil productivity.

Ponderosa Pine Restoration – Low-Intensity Thinning

Approximately 175,000 acres are proposed for restoration in the ponderosa pine vegetation type. Of these acres, approximately 24,400 acres are on severe erosion hazards soil types (acres of specific treatment types where severe erosion hazards occur are listed below).

Table 16. Acres of Low-IntensityTreatments with Severe Erosion Hazard Soils

Treatment Type	Acres	Treatment Type	Acres
dPFA - IT10	40	PFA - IT25	73
dPFA - UEA10	26	PFA - PineSage	11
dPFA - UEA25	94	PFA - SI25	35
IT10	931	PFA - UEA10	0
IT25	980	PFA - UEA25	105
MSO Restricted Trt	12,870	PineSage	129
MSO Target Trt	1,405	SI10	158
MSO Threshold Trt	546	SI25	515
PAC - Mechanical	3,117	UEA10	1,339
PFA - IT10	62	UEA25	2,011
PFA - IT25	73	**Grand Total**	**24,447**

Thinning can be done by hand/or mechanized felling (shear) and mechanized skidding of the logs to landings can occur. Best management practice monitoring on the Mogollon Rim Ranger District (Jagow 1994, Fleishman 1996 and Fleishman 2005) has shown that ground disturbance

(skidded to mineral soil) and compaction may occur on the approximately 10-15 percent of the thinning area when mechanized skidding and harvesting occur when designated ski trails are utilized. Froehlich et al. (1981) concurs that designating skid trails (BMP #28) reduces negative impacts from skidding operations.

Mechanized cutting and whole tree skidding takes entire trees to the landing, where they are subsequently delimbed at the landing. Mechanized cutting and processing the log at stump, with a forwarder gathering the logs and taking them to the landing may also occur. Machine piling of created slash from thinning activities disturbs the greatest amount of ground through re-arrangement of the soil surface. The amount of acres of ground disturbance would vary by the type of harvesting method, as well as the type of piling. Lop and scatter could occur on limited areas across the landscape as well. Conventional logging and skidding would have more acres of ground disturbance than mechanized logging with whole-tree skidding. However, all operators in the area use mechanized equipment, so conventional logging will not be analyzed.

Soil disturbance is calculated to be approximately 22,300 acres or about 3.8 percent of entire treatment area and much less and varies by 6th HUC watershed (Attachment #1 calculation). Use of mechanized equipment removes a portion of the protective vegetative ground cover thereby leaving the soil bare of vegetative ground cover and at risk of accelerated soil erosion. Where low intensity thinning occurs in the treatment area, approximately 10-15 percent of the soil is expected to be disturbed from hand thinning or mechanical equipment when removing trees in the short-term. However, only about 10-15 percent of the immediate treatment area and only 3.7 percent of the entire treatment area could result in soil disturbance. A threshold of 15 percent aerial extent disturbance is assigned as a guideline where soil impairment and productivity is measurable and may be appreciably reduced. Total soil disturbance for all treatments is displayed and analyzed following all individual treatment analysis. Since soil disturbance treatment area wide is about 3.7 percent, and 10-15 percent on-site and less than 15 percent, low intensity thinning by itself does not pose a risk to soil resource and soil productivity is expected to be maintained. The amount of bare soil associated with treatment disturbance is expected to rapidly decrease, as would any erosion that is tied to the soil disturbance (approximately 1-2 years to recover) (Elliot et al. 2012: 94). While 10-15 percent of the immediate area may be disturbed in the short term, the area is expected to quickly be covered with new needle duff and improved herbaceous vegetative cover, improving soil nutrient cycling function and stabilizing soil and maintaining and improving soil productivity in the longer term (more than 2 years). Total soil disturbance for all treatments is displayed and analyzed following all individual treatment analysis.

It is important to realize that not all ground disturbing treatments would occur in the same year and the 3.7 percent and 10-15 percent disturbance represents all treatments implemented the first year as the worst case scenario of disturbance. Total mechanized treatments are expected to occur on approximately 30,000 acres per year across the entire area by all treatment types, therefore the amount of acres disturbed per year is less than the worse-case scenario. Prescribed burning would occur after year one and some treatments may be staggered in time and place allowing time enough for the soil to begin dropping pine needle cast and recover. Identified and implemented BMPs are expected to mitigate possible negative effects to soils from mechanized harvesting including those areas that occur on soils with severe erosion hazard.

In addition, WEPP soil erosion modeling (Attachment #2) indicates soils would not erode above tolerable or threshold levels and therefore, long-term soil productivity would be maintained. Soils

with severe soil erosion hazards occur on total of about 24,400 acres in this treatment type (Attachment #3) and are at greatest risk of accelerated erosion above tolerable levels if and when all of the vegetative ground cover was to be removed. Using the same assumption we can expect about 3,700 acres of ground disturbance on severe erosion soil types within this treatment type. However, a majority of the ground disturbance in this treatment only would remove or disturb a small portion of vegetative ground cover and site specific BMP's listed below would l minimize and mitigate ground disturbance and therefore, would not pose a risk to long-term soil productivity.

Resource protection measures and identified BMP's (table 2 and listed below)are identified and are expected to mitigate erosion, minimize the impacts of harvest actions on severe erosion hazard soils, loss of soil productivity and reduce nonpoint source water pollution. They are listed in table 3 for all action alternatives and by strata in Appendix A. Harvesting operation BMP's specific for ponderosa pine restoration that would be implemented include the following, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 35, 36, and 28.

Compaction is expected to occur from harvest and skidding activities. Designated skid trails would limit the extent of compaction during operations by limiting the amount of disturbed ground. Created slash would be whole-tree skidded to the landing and piled at this site. Compaction is limited in piling activities because of the use of track equipment, but can occur with track equipment if machine piling is done when soil conditions are wet.

Some soils have moderate or severe timber harvest restrictions due to fine textured or clayey soils are common in this treatment type (Attachment #3). Mechanized falling can cause compaction when soils are wet with a single pass. Resource protection measures and BMP's identified to mitigate timber harvest limitations are listed in Appendix A for all action alternatives and by strata in Appendix A.

Most soil conditions are satisfactory (see Attachment #3) but there are some areas with impaired or unsatisfactory soil conditions. Low intensity thinning would result in increased herbaceous cover in tree interspaces because there would be less competition for soil moisture and nutrients compared to currently dense forests (please see the wildlife and vegetation specialist reports for a discussion of understory response from thinning). The thinning would improve soil infiltration and nutrient cycling because an increase in grass species corresponds to a larger root network essential in loosening up and improvement of soil structure and promotes better water infiltration, air exchange and soil microbial cycling of nutrients (Elliot et al. 1999). Consequently, where soil conditions are impaired or unsatisfactory, their condition can be expected to improve both in the short and long-term (greater than 2 years). The amount of coarse woody material is not quantified but maintenance of 5-7 tons/acre of coarse woody material will improve soil nutrient cycling (USDA 1994b) and listed as BMP in table 3.

Many 6th HUC watersheds are functional at risk and a few impaired (see Appendix C) due in part to overstocked ponderosa pine forests, road networks that alter hydrology and accelerate erosion, and less than satisfactory soil condition. Reducing tree canopy cover and associated hazardous fuels would move the ponderosa pine forest towards a fire adapted ecosystem. Restoration would reduce the risk of uncharacteristic, high severity wildfire that could result in removal of protective vegetative ground cover, and accelerate soil erosion and sediment delivery into connected channels thereby reducing soil productivity and water quality.

Overall, ponderosa pine low intensity restoration along with other proposed treatments can be expected to increase ecosystem resiliency to uncharacteristic fire and move soils and watersheds towards satisfactory and functional condition in both the short and long-term and maintain or improve long-term soil productivity and water quality. A threshold of 15 percent aerial extent disturbance is assigned as a guideline where soil impairment and productivity may be appreciably reduced. Since soil disturbance is about 3.7 percent, and less than 15 percent, high intensity thinning by itself does not pose a risk to soil resource and soil productivity is expected to be maintained.

Ponderosa Pine Restoration on Slopes Greater than 40 Percent

For those acres proposed for treatment above 40 percent (acres in the Dry Lake Hills area), hand sawyers or possible cable and/or helicopter logging on up to 99 acres would implement thinning and would cause minimal soil disturbance from equipment use and therefore would not cause erosion above tolerable levels. These areas have severe erosion hazard so slash up to 5 tons per acre can be spread to mitigate ground disturbance on steep slopes. Therefore, accelerated erosion above tolerable levels would not occur and soil productivity would be maintained.

Ponderosa Pine Restoration – High-Intensity Thinning
Approximately 154,700 acres are proposed for restoration in the ponderosa pine vegetation type. Of these acres, approximately 15,700 acres are on severe erosion hazards soil types (acres of specific treatment types where severe erosion hazards occur are listed below).

Table 17. Acres of High-Intensity Treatments with Severe Erosion Hazard Soils

Treatment Type	Acres
dPFA - IT40	28
dPFA - UEA40	261
IT40	4,341
PFA - IT40	318
PFA - SI40	37
PFA - UEA40	895
SI40	1,329
UEA40	8,262
WUI55	253
Grand Total	**15,724**

Thinning can be done by hand/or mechanized felling (shear) and mechanized skidding of the logs to landings. Best management practice monitoring on the Mogollon Rim Ranger District (Jagow 1994, Fleishman 1996 and Fleishman 2005) and observations and air photo interpretation has shown that ground disturbance (skidded to mineral soil) and compaction may occur on the approximately 10-20 percent of the thinning area when mechanized skidding and harvesting occur when designated ski trails are utilized. There may be areas where the amount of ground disturbance exeeeds 20 percent but the 10-20 percent is an average across the entire area. Froehlich et al. (1981) concurs that designating skid trails (BMP #28) reduces negative impacts to soils from skidding operations.

Harvesting and treatment of slash of high intensity areas is the same as low intensity areas—mechanized harvest, with slash either being piled or chipped and removed. Lop and scatter could occur on limited areas across the landscape.

Soil disturbance from high intensity thinning is calculated to be approximately 23,205 acres or about 3.9 percent of the entire treatment area (about 2,400 acres of that is expected to occur on severe erosion soil types). Use of mechanized equipment removes a portion of the protective vegetative ground cover thereby leaving the soil bare of vegetative ground cover and at risk of accelerated soil erosion. Where high intensity thinning would occur, soil disturbance could range from 10-20 percent but only amounts to 3.9 percent of the treatment area and much less by watershed. A threshold of 15 percent aerial extent disturbance is assigned as a guideline where soil impairment and productivity is measurable and may be appreciably reduced. Since soil disturbance treatment area-wide is about 3.9 percent, high intensity thinning by itself does not pose a risk to soil productivity. Soil disturbance in the immediate treatment area may range from 10-20 percent and above the 15 percent threshold guideline signifying possible loss of soil productivity at the site level, but across the landscape is well below the threshold.

It is important to realize that not all ground disturbing treatments will occur in the same year and the 3.9 percent and 10-20 percent disturbance represents all treatments implemented the first year as the worst case scenario of disturbance. Prescribed burning will occur after year one and some treatments may be staggered in time and place allowing time enough for the soil to begin dropping pine needle cast and recover. Identified and implemented BMPs are expected to mitigate possible negative effects to soils, including and especially soils that have a severe erosion hazard.

The amount of bare soil associated with treatment disturbance is expected to rapidly decrease, as will any erosion that is tied to the soil disturbance (approximately 1-2 years to recover) (Elliot, 1999). While 10-20 percent of the immediate area may be disturbed in the short term, the area is expected to quickly be covered with new needle duff and improved herbaceous vegetative cover, improving soil nutrient cycling function and stabilizing soil and maintaining and improving soil productivity in the longer term (more than 2 years) (Elliot et al. 1999). For this Alternative, total soil disturbance for all treatments is displayed and analyzed following all individual treatment.

In addition, WEPP soil erosion modeling (table 12 and Attachment #2) indicates soils would not erode above tolerable or threshold levels and therefore, long-term soil productivity would be maintained. Soils with severe soil erosion hazards occur on about 15,700 acres in this treatment type (Attachment #3) and are at greatest risk of accelerated erosion above tolerable levels if and when all of the vegetative ground cover were to be removed. However, with application of BMP’s, this treatment would remove or disturb a small portion of vegetative ground cover and therefore, would not pose a risk to long-term soil productivity.

Resource protection measures and BMP’s are identified and are expected to mitigate erosion and potential impacts to severe erosion soil types, loss of soil productivity and reduce nonpoint source water pollution. They are listed in table 3 for all action alternatives and by strata in Appendix A. Harvesting operation BMP’s specific for ponderosa pine restoration that would be implemented include the following, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 35, 36, and 28.

Compaction is expected to occur from harvest and skidding activities. Designated skid trails would limit the extent of compaction during operations by limiting the amount of disturbed ground. Created slash would be whole-tree skidded to the landing and piled at this site.

Compaction is limited in piling activities because of the use of track equipment, but can occur with track equipment if machine piling is done when soil conditions are wet.

Many soils have moderate or severe timber harvest restrictions due to fine textured, or clayey soils are common in this treatment type (Attachment #3). Mechanized falling can cause compaction when soils are wet with a single pass. Resource protection measures and BMP's identified to mitigate timber harvest limitations are listed in Appendix A for all action alternatives and by strata in Appendix A.

Most soil conditions are satisfactory (see Attachment #3) but there are some areas with impaired or unsatisfactory soil conditions. High intensity thinning would result in increased herbaceous cover in tree interspaces because there would be less competition for soil moisture and nutrients compared to currently dense forests (please see the Wildlife and Vegetation specialist reports for a discussion of understory response from thinning). The thinning would improve soil condition and productivity for soil infiltration and nutrient cycling because an increase in grass species corresponds to a larger root network essential in loosening up and improvement of soil structure and promotes better water infiltration, air exchange and soil microbial cycling of nutrients (Elliot et al. 1999). Consequently, where soil conditions are impaired or unsatisfactory, their condition can be expected to improve both in the short and long-term (greater than 2 years).

The amount of coarse woody material is not quantified but maintenance of 5-7 tons/acre of coarse woody material will reduce risk of uncharacteristic fires that may damage soil and should improve soil nutrient cycling (USDA 1994b) and listed as BMP in table 3.

Many 6th HUC watersheds are functional at risk and a few impaired (see Appendix C) due in part to overstocked ponderosa pine forests, road networks that alter hydrology and accelerate erosion, and less than satisfactory soil condition. Reducing tree canopy cover and associated hazardous fuels would move the ponderosa pine forest towards a fire adapted ecosystem. Restoration would reduce the risk of uncharacteristic, high severity wildfire that could result in removal of protective vegetative ground cover, and accelerate soil erosion and sediment delivery into connected channels thereby reducing soil productivity and water quality. Consequently, watershed function would be greatly improved.

Overall, ponderosa pine high intensity restoration along with other proposed treatments can be expected to increase ecosystem resiliency to uncharacteristic fire and move soils and watersheds towards satisfactory and functional condition in both the short and long-term and maintain or improve long-term soil productivity and water quality. A threshold of 15 percent aerial extent disturbance is assigned as a guideline where soil impairment and productivity may be appreciably reduced. Since soil disturbance is about 3.9 percent, and less than 15 percent, high intensity thinning by itself does not pose a risk to soil resource and soil productivity is expected to be maintained. Therefore, soil disturbance associated with high intensity thinning does not pose a risk to long-term soil productivity

Savanna Treatment

Approximately 45,470 acres are proposed for restoration in the ponderosa pine vegetation type. Of these acres, approximately 3,628 acres are on severe erosion hazards soil types (Acres of specific treatment types where severe erosion hazards occur are listed below).

Table 18. Acres of Savanna Treatment with Severe Erosion Hazard Soils

Treatment Type	Acres
Savanna	3,628
Grand Total	**3,628**

Thinning can be done by hand/or mechanized felling (shear) and mechanized skidding of the logs to landings can occur. Since this treatment strives to maintain 70-90 percent in openings, soil disturbance is estimated to be higher than low intensity thinning and about equal to high intensity thinning ranging from 10-20 percent in the immediate treated area. Observations and best management practice monitoring on the Mogollon Rim Ranger District (Jagow 1994, Fleishman 1996 and Fleishman 2005) has shown that ground disturbance (skidded to mineral soil) and compaction may occur on the approximately 10-20 percent of the thinning area when mechanized skidding and harvesting occur when designated ski trails are utilized. Froehlich et al. (1981) concurs that designating skid trails (BMP #28) reduces negative impacts from skidding operations.

The method of harvest (mechanized cutting and whole tree skidding) is similar to what is described under high intensity thinning. Soil disturbance is calculated to be approximately 6,820 acres or about 1.1percent of entire treatment area and much less and varies by 6th HUC watershed (Attachment #1 calculation). A threshold of 15percent aerial extent disturbance is assigned as a guideline where soil impairment and productivity is measurable and may be appreciably reduced. Since soil disturbance is about 1.1 percent, and less than 15 percent, savanna treatment by itself does not pose a risk to soil resource and soil productivity is expected to be maintained. Soil disturbance in the immediate treatment area may range from 10-20 percent and above the 15percent threshold guideline signifying possible loss of soil productivity.

It is important to realize that not all ground disturbing treatments will occur in the same year and the 1.1 percent and 10-20 percent disturbance represents all treatments implemented the first year as the worst case scenario of disturbance. Identified and implemented BMPs are expected to mitigate possible negative effects to soils. Similar to high intensity thinning, the amount of bare soil associated with treatment disturbance is expected to rapidly decrease, as will any erosion that is tied to the soil disturbance (approximately 1-2 years to recover) (Elliot, 1999). While 10-20 percent of the immediate area may be disturbed in the short term, the area is expected to quickly be covered with new needle duff and improved herbaceous vegetative cover, improving soil nutrient cycling function and stabilizing soil and maintaining and improving soil productivity in the longer term (more than 2 years) (Elliot et al. 1999). Total soil disturbance for all treatments is displayed and analyzed following all individual treatment analysis.

In addition, WEPP soil erosion modeling (table 12 and Attachment #2) indicates soils would not erode above tolerable or threshold levels and therefore, long-term soil productivity would be maintained. Soils with moderate or severe soil erosion hazards are common in this treatment type (Attachment #3) and at greatest risk of accelerated erosion above tolerable levels if and when all of the vegetative ground cover were to be removed. However, this treatment only would remove or disturb a small portion of vegetative ground cover and therefore, would not pose a risk to long-term soil productivity.

Resource protection measures and BMP's are identified and are expected to mitigate erosion, minimize and harvest impact on severe erosion hazards soils, loss of soil productivity and reduce nonpoint source water pollution. They are listed in table 3 and by strata in Appendix A. Harvesting operation BMP's specific for savanna restoration that would be implemented include the following, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 35, 36, and 28.

Soil erosion modeling indicates that the restoration would not result in soil erosion above tolerable soil loss rates and therefore soil productivity from an erosional standpoint would be maintained.

Compaction is expected to occur from harvest and skidding activities. Designated skid trails would limit the extent of compaction during operations by limiting the amount of disturbed ground. Created slash would be whole-tree skidded to the landing and piled at this site. Compaction is limited in piling activities because of the use of track equipment, but can occur with track equipment if machine piling is done when soil conditions are wet.

Many soils have moderate or severe timber harvest restrictions due to fine textured, or clayey soils are common in this treatment type (Attachment #3). Mechanized falling can cause compaction when soils are wet with a single pass. Resource protection measures and BMP's identified to mitigate timber harvest limitations are listed in Appendix A for all action alternatives and by strata in Appendix A.

Most soil conditions are satisfactory (see Attachment #3) but there are some areas with impaired or unsatisfactory soil conditions. Savanna treatment would result in increased herbaceous cover in tree interspaces (more so than low and high intensity thinning) because there would be less competition for soil moisture and nutrients compared to currently dense forests (please see the Wildlife and Vegetation specialist reports for a discussion of understory response from thinning). The thinning would improve soil infiltration and nutrient cycling because an increase in grass species corresponds to a larger root network essential in loosening up and improvement of soil structure and promotes better water infiltration, air exchange and soil microbial cycling of nutrients (Elliot et al. 1999). Consequently, where soil conditions are impaired or unsatisfactory, their condition can be expected to improve both in the short and long-term (greater than 2 years). The amount of coarse woody material is not quantified but maintenance of 5-7 tons/acre of coarse woody material will reduce risk of damage to soil from uncharacteristic fires resulting in high severity and should improve soil nutrient cycling (USDA 1994b) and listed as BMP #7 in table 3.

Overall, savanna restoration along with other proposed treatments can be expected to increase ecosystem resiliency to uncharacteristic fire and move soils and watersheds towards satisfactory and functional condition in both the short and long-term and maintain or improve long-term soil productivity and water quality. A threshold of 15percent aerial extent disturbance is assigned as a guideline where soil impairment and productivity may be appreciably reduced. Since soil disturbance is about 1.1 percent, and less than 15 percent, savanna thinning by itself does not pose a risk to soil resource and soil productivity is expected to be maintained. Therefore, soil disturbance associated with savanna restoration does not pose a risk to long-term soil productivity

Aspen Treatments

Approximately 1,229 acres are proposed for restoration in all three action Alternatives (B, C, and D). Of these acres, approximately 234 acres are on severe erosion hazards soil types (Acres of specific treatment types where severe erosion hazards occur are listed below). Implementation of

identified BMPs (table 2 and listed in this section) is expected to mitigate the risk of accelerated erosion on these soils and should maintain long-term soil productivity.

Table 19. Acres of Aspen Treatment with Severe Erosion Hazard Soils

Treatment Type	Acres
Aspen	234
Grand Total	**234**

Soil disturbance is calculated to be approximately 184 acres or about .03 percent of the entire treatment area. Use of mechanized equipment removes a portion of the protective vegetative ground cover thereby leaving the soil bare of vegetative ground cover and at risk of accelerated soil erosion. Where aspen treatment occurs in the treatment area, approximately 10-20 percent of the soil is expected to be disturbed from hand thinning or mechanical equipment when removing trees.

However, only about .03 percent of the entire treatment area could result in soil disturbance. A threshold of 15 percent aerial extent disturbance is assigned as a guideline where soil impairment and productivity is measurable and may be appreciably reduced. Since soil disturbance treatment area wide is about 1.1 percent, and less than 15 percent, aspen treatment by itself does not pose a risk to soil resource and soil productivity is expected to be maintained. Soil disturbance in the immediate treatment area may range from 10-20 percent and above the 15 percent threshold guideline signifying possible loss of soil productivity.

It is important to realize that not all ground disturbing treatments will occur in the same year and the .03 percent and 10-20 percent disturbance represents all treatments implemented the first year as the worst case scenario of disturbance. Prescribed burning will occur after year one and some treatments may be staggered in time and place allowing time enough for the trees to begin dropping aspen leaves and recover. Identified and implemented BMPs are expected to mitigate possible negative effects to soils including those soils with severe erosion hazard. Total soil disturbance for all treatments is displayed and analyzed following all individual treatment analysis. Total soil disturbance for all treatments is displayed and analyzed following all individual treatment analysis. Total soil disturbance for all treatments is displayed and analyzed following all individual treatment analysis.

Resource protection measures and BMP’s are identified and are expected to mitigate erosion, loss of soil productivity and reduce nonpoint source water pollution. They are listed in table 3 for all action alternatives and by strata in Appendix A.

Harvesting operation BMP’s specific for aspen restoration that would be implemented include the following, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 35, 36, and 28.

Similar to high intensity thinning, the amount of bare soil associated with treatment disturbance is expected to rapidly decrease, as will any erosion that is tied to the soil disturbance (approximately 1-2 years to recover) (Elliot, 1999). While 10-20 percent of the immediate area may be disturbed in the short term, the area is expected to quickly be covered with new leaf fall and improved herbaceous vegetative cover, improving soil nutrient cycling function and stabilizing soil and maintaining and improving soil productivity in the longer term (more than 2 years) (Elliot et al.

1999). Total soil disturbance for all treatments is displayed and analyzed following all individual treatment analysis.

In addition, WEPP soil erosion modeling (Attachment #2) indicates soils would not erode above tolerable or threshold levels and therefore, long-term soil productivity would be maintained. Soils with moderate or severe soil erosion hazards are common in this treatment type (Attachment #3) and at greatest risk of accelerated erosion above tolerable levels if and when all of the vegetative ground cover were to be removed. However, this treatment only would remove or disturb a small portion of vegetative ground cover and therefore, would not pose a risk to long-term soil productivity.

Soil erosion modeling indicates that the restoration will not result in soil erosion above tolerable soil loss rates and therefore soil productivity from an erosional standpoint would be maintained.

Compaction is expected to occur on small portions of the vegetation removal treatment area. Created slash would be whole-tree skidded to the landing and piled at this site. Compaction is limited because of the use of track equipment, but can occur with track equipment if machine piling is done when soil conditions are wet.

Many soils have moderate or severe timber harvest restrictions due to fine textured, or clayey soils are common in this treatment type (Attachment #3). Mechanized falling can cause compaction when soils are wet with a single pass. Resource protection measures and BMP's identified to mitigate timber harvest limitations are listed in Appendix A for all action alternatives and by strata in Appendix A.

Alost all (more than 99 percent) of acres have satisfactory soil conditions (see Attachment #3) but there are about 50 acres that are unsatisfactory soil conditions. Aspen treatment would result in increased herbaceous cover in tree interspaces (more so than low and high intensity thinning) because there would be less competition for soil moisture and nutrients compared to currently old and dying aspen trees (please see the Wildlife and Vegetation specialist reports for a discussion of understory response from thinning). The thinning would improve soil infiltration and nutrient cycling because an increase in grass species corresponds to a larger root network essential in loosening up and improvement of soil structure and promotes better water infiltration, air exchange and soil microbial cycling of nutrients (Elliot et al. 1999). Consequently, where soil conditions are unsatisfactory, their condition can be expected to improve both in the short and long-term (greater than 2 years).

Many 6th HUC watersheds are functional at risk and a few impaired (see Appendix C) due in part to overstocked ponderosa pine forests, road networks that alter hydrology and accelerate erosion, and less than satisfactory soil condition. Reducing tree canopy cover and associated hazardous fuels would move the aspen forest towards a fire adapted ecosystem. Restoration would reduce the risk of uncharacteristic, high severity wildfire that could result in removal of protective vegetative ground cover, and accelerate soil erosion and sediment delivery into connected channels thereby reducing soil productivity and water quality. Consequently, watershed function would be greatly improved.

Overall, aspen restoration along with other proposed treatments can be expected to increase ecosystem resiliency to uncharacteristic fire and move soils and watersheds towards satisfactory and functional condition in both the short and long-term and maintain or improve long-term soil productivity and water quality. A threshold of 15 percent aerial extent disturbance is assigned as a

guideline where soil impairment and productivity may be appreciably reduced. Since soil disturbance is about .03 percent, and less than 15 percent, aspen treatment by itself does not pose a risk to soil resource and soil productivity is expected to be maintained. Therefore, soil disturbance associated with aspen restoration does not pose a risk to long-term soil productivity

Prescribed Fire Treatment

Approximately 595,400 acres are proposed for prescribed fire. Prescribed burning only is proposed on about 205,300 of the total acres, with the remaining approximately 390,000 acres having prescribed burning and mechanical treatments proposed. Each of the roughly 595,400 acres would have maintenance burning as well over 10-20 year timeframe.

The major factor that determines the effects of burning on runoff and erosion is the amount of disturbance to the surface organic material (commonly referred to as duff or forest floor) that protects the underlying mineral soil. The effects of burning can vary from merely removing some of the litter (low burn severity) to totally consuming the duff layer and organic matter in the upper soil layers (high burn severity) (Elliot et al. 2010:89). Prescribed burning can effect soil resources through reduction of course woody debris, damage to soil physical structure, and damage to soil biological features (Graham et al. 1994a, Neary et al. 2005, Elliot et al. 2010), as well as providing positive effects through nutrient flushes from the burn (Covington and Debano 1990 and Covington and Sackett 1992). This increase is short-lived due to rapid biological and chemical immobilization of released nutrients (Neary et al. 2005). The effects from fire are directly related to fire intensity, with the general rule of thumb that the greater the burn intensity, the greater the amount of damage to forest soils (Neary et al. 2005). Prescribed fires create a highly variable mosaic of burn severity, duff consumption, and unburned area. This spatial variability in postfire surface conditions results in spatially varying runoff and erosion rates (Elliot 2010:90).

This same general relationship will apply on the 4 FRI treatment area. The effect would vary by soil and fuel moisture regimes and fuels distribution however, duff/litter portions of the prescribed burn would have the least negative affect on soil properties, while allowing for release of nutrients for a one to two year period. Burning of larger material would increase the risk to soil properties as the size of material burned increases, which increases fire intensity.

Prescribed and managed fire would result in 1-3 percent (Lata 2013 indicates 1 percent) burning in high severity where protective vegetative ground cover could be removed and 2 percent is used as a midpoint in this analysis. This is based on recent managed fire data averages from Coconino National Forest remote sensing satellite imagery ground truthed during BAER assessments from (2009-2011) and (Lata 2013 and per. com. Mary Lata 2/2012).

Maintaining soil productivity over the long term generally requires presence of soil organic material and fire effects characteristic of the natural fire regime. Most fires characteristic of the historic fire regime or moderate severity prescribed fires are likely to enhance soil development and fertility over the longterm by periodic release of nutrients. However, extremely severe fires or large severely burned areas within fires, brought on by either rare natural events or humans, are likely to be highly detrimental to forest soils .

Under severe burning conditions, soil organic matter can be removed or destructively altered, nutrients volatilized, water-absorbing capacity decreased, and living plant parts and microorganisms killed. Loss of soil organic matter that is necessary for sustaining the biological

activity of soils (DeBano and others 1998) is probably the mostserious long-term concern (Brown 2003).

Prescribed burning would occur under prescribed conditions to reduce the soil surface fuel load without overheating, mineralizing or sterilizing the soil. Prescribed burning is a way to lower fuel loadwhile retaining CWD benefits (Brown et al. 2003). By controlling burning conditions, managers can manipulate to some extent the heat produced by burning CWD (controlling damage to plants and soils) and how much of it is consumed (preserving the animal habitat and erosion control benefits), while lowering the near-term fire hazard by reducing the fine fuel (Passovoy, Fule 2006).

Over the entire treatment area of nearly 595,000 acres of prescribed burning, soil disturbance is calculated to be approximately 11,900 acres or about 2 percent of entire treatment area. Prescribed fire could leave a portion of the protective vegetative ground cover thereby leaving the soil bare of vegetative ground cover and at risk of accelerated soil erosion on small portions across the landscape.

However, only about 2 percent of the entire treatment area could result in soil disturbance. A threshold of 15 percent aerial extent disturbance is assigned as a guideline where soil impairment and productivity is measurable and may be appreciably reduced. Since soil disturbance treatment area wide is about 2 percent, and less than 15 percent, prescribed fire by itself does not pose a risk to soil resource and soil productivity is expected to be maintained.

Prescribed burning would occur after year one and treatments will be staggered in time and place over 10 years allowing time enough for the trees to begin needles and recover. Identified and implemented BMPs are expected to mitigate possible negative effects to soils. Total soil disturbance for all treatments is displayed and analyzed following all individual treatment analysis.

The amount of bare soil caused by prescribed fire is expected to rapidly (after 1 year) reduce due to annual pine needle litter fall onto the soil as protective vegetative ground cover increases. While 2 percent of the immediate area may be disturbed in the short term, the soil is expected to quickly be covered with new leaf fall and improved herbaceous vegetative cover, and will benefit from ash and its macronutrients improving soil nutrient cycling function and stabilizing soil and maintaining and improving soil productivity. Total soil disturbance for all treatments is displayed and analyzed following all individual treatment analysis. Where heavy concentrations of woody material have burned, soil recovery may be long-term (greater than 2 years).

Machine piling of created slash from thinning activities disturbs the greatest amount of ground through re-arrangement of the soil surface. Burning of machine piles, and to a lesser extent hand piles, negatively affect soil biotic and chemical properties due to intense soil heating (Korb et al. 2004 and Seymour and Tecle 2004). The effects at these sites will be change in soil chemical and biotic properties. It is anticipated that a large portion of the created slash will be chipped and removed, thus we expect less than 1 percent of the mechanized treated acreage (about 390,000 acres) to have any effect from the burning of machine piles.

WEPP soil erosion modeling (Attachment #2) indicates burned soils on slopes less than 40 percent would not erode above tolerable or threshold levels and therefore, long-term soil productivity would be maintained. Where high burn severity results on slopes over 40 percent (about 100 acres), soil disturbance is estimated at 2 percent, accelerated erosion could occur

causing a small loss of soil productivity but because it would be limited in extent, is not expected to deliver measurable amount of soil to connected streamcourses or affect water quality.

Soils with moderate or severe soil erosion hazards are common in this treatment type (Attachment #3) and at greatest risk of accelerated erosion above tolerable levels if and when all of the vegetative ground cover were to be removed. However, burning would remove or disturb a small portion of vegetative ground cover (on average about 2 percent) and therefore, would not pose a risk to long-term soil productivity.

Resource protection measures and BMP's identified to mitigate erosion, loss of soil productivity and reduce nonpoint source water pollution are listed in table 3 and by strata in Appendix A. Prescribed burning specific BMPs include the following, 6, 7, 8, and 10.

On areas to be prescribed burned, BMP #7 assured there is sufficient coarse woody material left on site throughout all ponderosa pine treatment areas to promote soil nutrient cycling. Fires would be managed to leave 5-7 tons/acre of course woody debris in ponderosa pine be left on-site after the prescribed burns to maintain long-term soil productivity (USDA 1994b) on areas to be burned outside of the buffers around private land in. Within the pinyon-juniper cover type, snags would be managed for 1 per acre over 75 percent of the area and coarse woody debris (CWD) would be managed for an after treatment average of 1 to 3 tons per acre. Where available, a portion of the CWD would include two logs ≥10" and ≥10' in length to improve conditions (Huffman 2010 pers. Comm. From Brewer, 2008). Implementation of BMP#7 is expected to improve nutrient cycling and soil productivity in both ponderosa pine and pinyon-juniper types.

Lata, 2012 reports coarse woody debris about about 20-30 or more tons/acre could pose a risk to soil and cause mineralization or adverse effects to soil. Reducing coarse woody debris through the proposed action and Alts B and C to near 5-7 tons/acre is well below the limits of 20 or more tons/acre and would result in reducing risk to soil and would maintain long-term soil productivity. Short term removal of coarse woody material through implementation of action alternatives over a 1-3 year timeframe should not affect short or long-term soil productivity since BMP #35 requires maintenance of 5-7 tons/acre/year.

Soil conditions vary (Appendix B). Following mechanical thinning, burning would result in increased herbaceous cover in tree interspaces because burning would reduce the century buildup of forest duff that inhibits herbaceous understory productivity (see wildlife specialist report for a full review of the effects on understory vegetation response from burning activities). Mechanical thinning followed by prescribed burning resulting in tree reduction would result in less competition for soil moisture and nutrients compared to currently overstocked stands and allow immediate native plant (forbs and grasses) regeneration. The thinning would improve soil infiltration and nutrient cycling because an increase in grass species corresponds to a larger root network essential in loosening up and improvement of soil structure and promotes better water infiltration, air exchange and soil microbial cycling of nutrients. Consequently, where soil conditions are unsatisfactory, their condition can be expected to improve both in the short and long-term (greater than 2 years).

Furthermore, prescribed burning would reduce the duff layer, fine and medium sized fuels built up on the forest floor and result in reduced risk of uncharacteristic fire that could otherwise result (such as alternative A) in large areas of high burn severity that pose risk to soil and watershed function and downstream water quality. Implementation of prescribed fire under alternative B

could result in a predicted 2 percent high burn severity while implementation of alternative A (no action) could result in up to 24 percent erosion above tolerable or threshold hold soil loss rates posing a serious risk to short and long-term soil productivity, watershed function and downstream water quality

Most 6th HUC watersheds are functional at risk and a few impaired and functional(see Appendix C) due in part to overstocked ponderosa pine forests, road networks that alter hydrology and accelerate erosion, and less than satisfactory soil condition. Reducing small tree canopy cover and associated hazardous fuels would improve the fire regime condition class and move the forest towards a fire adapted ecosystem. The hydrologic effects of prescribed burning are largely a function of fire severity and area burned. High severity burns that consume protective litter and expose mineral soil generally increase runoff and sediment yields, whereas low severity burns that only consume the upper litter layers have much less hydrologic impact (Elliot et al. 2010: p138). Prescribed fire is a low severity burning technique and would reduce the risk of uncharacteristic, high severity wildfire that could result in removal of protective vegetative ground cover, and accelerate soil erosion and sediment delivery into connected channels thereby reducing soil productivity and water quality.

Overall, prescribed fire along with other proposed treatments can be expected to increase ecosystem resiliency to uncharacteristic fire and move soils and watersheds towards satisfactory and functional condition in both the short and long-term and maintain or improve long-term soil productivity and water quality. A threshold of 15 percent aerial extent disturbance is assigned as a guideline where soil impairment and productivity may be appreciably reduced. Since soil disturbance is about 2 percent, and less than 15 percent, prescribed fire by itself does not pose a risk to soil resource and soil productivity is expected to be maintained. Therefore, soil disturbance associated with prescribed fire does not pose a risk to long-term soil productivity or watershed function.

The following activites effects are common to Alterantives B, C and D.

Temporary Road Construction and Decommissioning

The objective for creating temporary roads is for access during project implementation. Once treatment has occurred, temporary roads would be decommissioned. Decommission methods include options such as installing signs gates, rock barriers, or ripping and re-contouring of slopes and installing drainage features such as waterbars Routes that have established vegetation may need minimal treatment while others may need to be entirely ripped, seeded and slopes re-contoured.

Approximately 904 miles of existing system and unauthorized roads would be decommissioned on the Coconino NF and Kaibab NF. About 517 miles of temporary roads will be constructed for haul access and decommissioned when treatments are finished. About 10 miles of existing open roads would be reconstructed for natural resource concerns (primarily moving streams out of stream channels) and about 30 miles of rods would have road improvements, such as widening turn radiuses. In addition, approximately 2,000 miles of road would receive road maintenance during the life of the project.

The road decommissioning would create about 1,800 acres of disturbance in the short term and remove approximately 904 miles of roads, or about 1,800 acres of road from future disturbance in the long-term. About 38 miles (roughly 70 acres) are on severe erosion hazard soils. BMP’s are

designed to minimize impacts from decommissioning efforts. After decommissioning, there would be reduction of roads on severe erosion hazard soil type.

Temporary road construction would occur prior to harvest activities. Roads would then be decommissioned after harvest use. Thus, disturbance to soils is short-term in nature. This is expected to occur on about 517 miles of road (a total of about 950 acres). Of these roads, a vast majority would be located on soils with slight or moderate erosion hazard, it is estimated that about 22 miles of road (about 40 acres) occurring on severe erosion hazard soils.

At this time, there is uncertainty whether a National Pollution Discharge Elimination System (NPDES) permit would be required for stormwater discharges from logging roads associated with this project. Although the Environmental Protection Agency has published a final rule exempting logging road stormwater discharge from NPDES permitting requirements, the United States Supreme Court is currently reviewing the matter. Until the Supreme Court rules, it will be uncertain whether a NPDES permit is required for this project.

Reconstruction of Existing Roads

Road relocation is scheduled to occur on just less than 10 miles (about 18 acres of disturbance) of road across the project area. Of these miles, about .3 miles are severe erosion sites (about .7 acres). These miles of road are all located directly in or adjacent to stream courses throughout the analysis area. The actual miles of reconstructed road would exceed the 10 miles of road that are identified for removal and may be as many as 25 miles of reconstructed segments. Road improvements will occur on about 30 miles, and may affect up to 75-150 acres, depending on the extent of the road improvement. Activities that are considered road improvement include, but are not limited to, construction of bridges and major culverts,placing bar ditches, subgrade repairs, shoulder widening, lane widening, ditch widening, roadway prism widening, horizontal and vertical alignment changes, curve widening, and improving site distance at road intersections. Vegetation will likely be removed with these activities. These activities may occur on about 10-20 acres of soilswith severe erosion hazard. Specific BMP's 1, 12, and 15 will mitigate effects on severe erosion sites. At this time, there is uncertainty whether a National Pollution Discharge Elimination System (NPDES) permit would be required for stormwater discharges from logging roads associated with this project. Although the Environmental Protection Agency has published a final rule exempting logging road stormwater discharge from NPDES permitting requirements, the United States Supreme Court is currently reviewing the matter. Until the Supreme Court rules, it will be uncertain whether a NPDES permit is required for this project.

Findings: Roads affect geomorphic processes by four primary mechanisms: accelerating erosion from the road surface and prism itself by both mass and surface erosion processes; directly affecting channel structure and geometry; altering surface flow paths, leading to diversion or extension of channels onto previously unchannelized portions of the landscape; and causing interactions among water, sediment, and woody debris at engineered road-stream crossings (Gucinski et al. 2000). Road relocation would removed roads from stream channels and would restore natural channel function and reduce sediments that are currently being generated by the existing road bed. BMP #19 specifically states to relocate roads where feasible to minimize sediment delivery into drainages and to minimize disturbance in drainage systems and minimize sediment production within channels. Road reconstruction activities would help restore steam channel function and move the affected streamcourses to desired conditions.

Altogether, road treatments will disturb about 2,700 acres or less than 0.1 percent of treatment area. Temporary roads may have fewer adverse effects than do permanent roads, depending on the extent to which they are decommissioned (Gucinski et al. 2000). Because of this, after use, all temporary roads would be restored and may be shallow ripped (≈6”), seeded, drained and/or covered with slash from landings (BMP #23).

Although the vast majority of these roads are not located on roads with severe erosion hazard (about 130 acres out of 2,700 acres or about 4 percent of all temporary, reconstructed and decommissioned roads), BMPs have been identified and would be implemented to assure accelerated soil erosion, loss of sol productivity and sediment delivery to connected streamcourses is mitigated. Resource protection measures and BMP’s identified to mitigate erosion and severe erosion hazard, loss of soil productivity and reduce nonpoint source water pollution are listed in table 3 for all action alternatives and by strata in Appendix A. Road specific BMPs include the following, 23, 25, 31, 32, and 33.

An additional 2,000 miles of existing road would have improved drainage throughout the life of the project by road maintenance activities. Of those miles, approximately 140 miles of road occur on severe erosion hazard soil types. The improved maintenance and BMP’s 19, 23, 25, 31, 32, and 33 would minimize the impacts from the open road system, especially on severe erosion hazard sites for the short-term. If maintenance does not continue, the positive effects of improved drainage would decrease over time (5-10 years after the last maintenance cycle). The temporary use of dust abatement on about 7 miles of road are not expected to have detrimental effects to soils, but will have a positive effect of not detaching small sediments on these road segments.

Overall, road decommissioning and temporary road construction is limited to less than0.1 percent soil disturbance in the treatment area. Implementation of identified BMPs is expected to mitigate accelerated erosion, and possible elevated sediment transport to connected streamcourses so as not to pose a risk to downstream water quality. This is especially true for the road segments that are scheduled to be reconstructed.

Channel Restoration:

Approximately 39 miles of degraded ephemeral channels would be restored. Actual ground disturbance from mechanized equipment and bank shaping activities would amount to about 516 acres treatment area wide. The soil disturbance is expected to be short term in nature as the bare soil is revegetated naturally and with the implementation of BMPs.

Resource protection measures and BMP’s identified to mitigate erosion, loss of soil productivity and reduce nonpoint source water pollution are listed in table 3 for all action alternatives and by strata in Appendix A.

BMP’s specific to channel restoration include the following, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21 and 33. These BMP’s would minimize impacts to soils and reduce possible nonpoint source pollution into connected streamcourses and water quality far the watershed and protect water quality.

Overall, channel restoration activates is limited to less than0.1 percent soil disturbance in the treatment area. Implementation of identified BMPs is expected to mitigate accelerated erosion, and possible elevated sediment transport to connected streamcourses so as not to pose a risk to downstream water quality and those species that rely on it for their survival. Many streamcourses

are in less than functional condition. Most 6th HUC watersheds are functional at risk and a few impaired and functional (see Appendix C) due in part to nonfunctional streamcourses that alter hydrology. Channel restoration is expected to improve streamcourse functional condition and would result in overall improvement of watershed condition.

Protective Fencing (Aspen and Springs)

Approximately 86 miles of protective (aspen and springs) fencing would be constructed. Although not quantified, ungulate grazing and OHV disturbance has degraded spring functional condition and connected soils forest-wide. Ungulate grazing in aspen stand has caused aspen decadence since ungulates thrive on newly sprouted seedlings resulting in older aged aspen stands with very little regeneration.

Protective fencing would eliminate ungulate grazing and OHV soil disturbance and is expected to improve spring functional condition and aspen stand regeneration. The amount of sol disturbance associated with implement g protective fences is very little, does not involve mechanized equipment other than for transport of materials and is not measurable at the treatment area or water shed scale.

Resource protection measures and BMP's identified to mitigate erosion, loss of soil productivity and reduce nonpoint source water pollution are listed in table 3 for all action alternatives and by strata in Appendix A. BMP #22 is specific for spring restoration.

Overall, protective fencing restoration activates is very limited, not measurable at the treatment and watershed scale. Implementation of identified BMPs is expected to mitigate accelerated erosion, and possible elevated sediment transport to connected streamcourses so as not to pose a risk to downstream water quality and those species that rely on it for their survival. Most 6th HUC watersheds are functional at risk and a few impaired and functional (see Appendix C) due in part to spring condition. Protective fencing is expected to improve aspen stand structure and spring functional condition and connected soils and would result in overall slight improvement of watershed condition.

Spring Restoration

See the water and water quality specialist report for information on springs and seeps. Effects to soil and riparian functional condition are similar to what is described above under protective spring fencing. BMP #22 is specific for spring restoration.

Treatment Area and 6th HUC Area-Wide Soil Disturbance

Table 20. Alternative B Summary of Direct Effects

	Alternative B Acres	Alternative B Percent of Treatment Area	Alternative B Percent of Watersheds
Soil disturbance from mechanical activities[3]	49,238	8.4	2.4

[3] Includes acres of ground disturbacne from all harvest treatments, road treatment acres, and channel

	Alternative B Acres	Alternative B Percent of Treatment Area	Alternative B Percent of Watersheds
Soil disturbance from potential high-severity burns	11,758	2.0	.6
Total soil disturbance (high-severity burns and mechanical)	60,995	10.4	3.0
Soil disturbance from mechanical activities and high-severity fire (range: low to high)		0-18.2	0-11.0
Potential soil erosion above tolerable levels When 33 percent of soils are severely burned		Up to 2	
Potential soil erosion above tolerable levels when all (100 percent) of soils are severely burned		Up to 2	
Soil erosion above tolerable levels from mechanical activities	0	0	0

Acres and percent's are approximate

Treatment Area Wide Effects

Total maximum soil disturbance from implementing all proposed treatments for alternative B would be about 10.4 percent (table 20). Approximately 8.4 percent is predicted for all mechanical treatments and 2 percent from potential high severity burns. A threshold of 15 percent aerial extent disturbance is assigned as a guideline where soil impairment and productivity is measurable and may be appreciably reduced. No 6th code watersheds exceed the 15 percent ground disturbance threshold (Walnut Canyon, Upper Lake Mary displays the most acres of disturbance-11 percent). Data by 6th HUC watershed is located in Attachment #3. Since total soil disturbance is about 3 percent for the watersheds as a whole, and less than 15 percent, the combination of all treatments do not pose a risk to soil resources and soil productivity and watershed function is expected to be maintained.

Identified and implemented BMP's are expected to reduce the risk on accelerated erosion, sediment delivery and nonpoint source pollution to connected streamcourses and maintain water quality in all watersheds including those with soil disturbance greater than about 15 percent. It is important to realize that not all ground disturbing treatments will occur in the same year and soil disturbances represent all treatments implemented the first year as the worst case scenario of disturbance. Prescribed burning would occur after year one and some treatments may be staggered in time and place allowing time enough for the soil to begin dropping pine needle cast and recover.

For ponderosa pine types, the amount of coarse woody material is not quantified but maintenance of 5-7 tons/acre of coarse woody material would improve soil nutrient cycling (USDA 1994b) and

treatment acres.

listed as BMP in table 3. Areas of identified WUI treatments would not be subject to 5-7 tons/acre of coarse woody material to adequately reduce fire hazard adjacent to private land and homes. There are only about 2000 acres in project area. Not maintaining 5-7 tons/acre should not risk long-term soil productivity since identified WUI's are small in size and minor in extent compared to the overall treatment area of about 595,000 acres.

Within the pinyon-juniper cover type, snags would be managed for 1 per acre over 75 percent of the area and coarse woody debris (CWD) would be managed for an after treatment average of 1 to 3 tons per acre. Where available, a portion of the CWD would include two logs ≥10" and ≥10' in length (Huffman, 2010, pers. Com.and ERI working paper, Brewer, 2008). Identified and implemented BMPs are expected to mitigate possible negative effects to soils and improve nutrient cycling function.

Mechanical activities would not result in any soil loss above tolerable levels according to WEPP modeling. However, potential soil erosion above tolerable levels for alternative B could occur on up to about 2 percent of mechanically, untreated slopes greater than 40 percent from prescribed fire. Slopes greater than about 40 percent are proposed for low intensity fire only treatments. Fire treatments on these slopes would significantly reduce future fires risk of high-severity fires. Soil loss exceeding tolerable amounts erode faster than renew themselves resulting in accelerated soil loss and loss of soil productivity as well as potentially deliver sediment to connected streamcourses. Again burning and mechanical treatments would not occur in the first year and be staggered in time and place and along with identified and implemented BMPs are expected to mitigate possible negative effects to soils.

There would be no predicted soil erosion above tolerable soil loss rates where mechanical treatments are proposed but there could be up to about 2 percent on slopes greater than 40 percent where burn only occurs. For burning, since the amount of erosion above tolerable soil loss is limited to up to 2 percent, soil productivity is not expected to be appreciable reduced and would be maintained. In addition, implementation of identified BMPs would reduce the threat of high burn severity, accelerated erosion, sediment delivery into connected streamcourses, and not threaten water quality downstream. Implementation of alternative B meets the projects purpose and need and meets the Kaibab and Coconino National Forest forest plan standards and guidelines.

Effects to Soil Condition/Productivity and Watershed Function

See Table 5a and 5b for a compares effects to soil condition, soil productivity and watershed function by alternative.

Implementation of Alternatives B would meet the projects purpose and need and meet the Kaibab and Coconino national forest plan standards and guidelines. Soil condition, productivity and watershed function would greatly improve, be maintained and protected.

Overall, implementation of the proposed action is expected to maintain, improve and protect long-term soil productivity and watershed function much better than Alternative A because there will be no improvement in understory response due to thinning and burning activities in the Alterantive A. Alternative B does propose thinning and prescribed fire activities that are expected to provide long-term soil improvements on about 588,000 acres, while Alterantive C proposes about 593,000 acres. Alternative D proposed thinning only on about 388,000 acres, and prescribed burning on about 178,000 acres. The thinning and burning will provide improvement

to soils by improving understory species composition, but does still maintain high fuel loadings that can have high surface fire effects tht can damage soils. This is expected to occur on about 25% of the mechanical treatment sites, so Alteratnive D has effective soil productivity treatments on about 470,000 acres. However, implementation of Alternative C would better restore grasslands than Alternative B and still has about the same amount of soil disturbance treatment area wide and at the 6th HUC watershed level. Implementation of Alternatives B and C would reduce the risks to life, property, soil productivity and water quality from post wildfire storm events (flooding and debris flows) much better than A and D.

Cumulative Effects

The geographic setting and boundary for the cumulative effects analysis will all 82 6th HUC watersheds listed in Appendix C for a total of about 2,032,00 acres. Cumulative effects includes past timber sales and their associated roads, hazardous fuel and prescribed burning projects that can affect the acres of soil disturbance, primarily through fuel treatments, as well as past burning and wildfires, range allotments, roads, private land, power corridors and recreation activities. Recreation activities are dispersed across the cumulative effects boundary area and are not quantifiable.

A list of past, present projects and reasonably foreseeable actions can be found in the document entitled Four-Forest Restoration Coconino and Kaibab NF Environmental Analysis (EIS) Cumulative Effects Analysis Baseline - updated 4/8/12. Past Actions and are included in attachment #4 and in the DEIS. Attachment 4 summarizes the acres of disturbance by current and future foreseeable actions.

Baseline Activities

Roads, private land, grazing allotments, and powerline corridors are baseline disturbance area acres for the project area. Baseline activities are ground disturbance constants. For this analysis, roads and powerline corridors are synonymous because the area of powerline corridors that contains baseline ground disturbance is the access road. Grazing allotments occur across about 1,692,900 acres of the cumulative effects area on allotments on the Coconino, Kaibab, Prescott and State and private lands. Ground disturbance from cattle grazing is difficult to quantify, however, ground disturbance does occur from grazing where cattle congregate, which are typically associated watering sites. For this analysis, we will use the baseline disturbance for grazing as an area adjacent to stock tanks (1/8 mile buffer). For this analysis, there are approximately 1,100 acres of disturbance from grazing.

There are approximately 7,170 miles of roads within the analysis area according to three forest Geographic Information System (gis) data layers. These data layers did not differentiate between open and closed roads, so for this analysis, we assumed that all roads are open, therefore the actual acres of current ground disturbance is probably overstated for the cumulative effects analysis area. The 7,170 miles of road equate to approximately 13,030 acres of disturbance from roads.

There are 101,461 acres of private land within the cumulative effects boundary area. Of these acres, there are variable levels of development ranging from municipal development in areas such as Flagstaff, Willimans, Tusayan, and Sedona to completely undeveloped. For this analysis, each private land parcel was classified as either having high or low development by examining each parcel with air photos to determine the level of development. For areas of high development, a

disturbance factor of 70 percent was applied (this is the equivalent disturbed area factor used on the Apache-Sitgreaves Equivalent Disturbed Area process for high development). For areas of low development, a 10 percent disturbance factor was applied after examining aerial photos (the Apache-Sitgreaves Equivalent Disturbed Area process for low development applies a 20 percent disturbance factor and after reviewing parcels by air photo this factor was too high because there is a general lack of any development on many of the parcels). The total ground disturbance for private land is calculated at about 30,900 acres.

The total baseline ground disturbance is about 45,040 acres for the cumulative effects area, or about 2 percent of the entire cumulative effects area. There are four 6th code watersheds where urban development has a large impact on ground disturbance areas—Cataract Creek Headwaters (11 percent baseline ground disturbance) associated with the City of Williams, Sinclair Wash (25 percent) and Lower Rio de Flag (18 percent) associated with the City of Flagstaff, Middle Oak Creek (11 percent) associated with Sedona and private land developed adjacent to Oak Creek.

Past Actions and Present Actions

The timeframe for past actions is 2-3 years, based on vegetative and course woody debris recovery of the site. Vegetative recovery after fuel treatments is generally very rapid, with erosion rates typically dropping to pre-fire levels within 1 to 2 years (Elliot et al. 2010: 93). Therefore, protective vegetative ground cover that may have been disturbed in past timber sales, hazardous fuel and prescribed burning projects older than about 2-3 years is likely recovered enough to protect against accelerated erosion, and does not contribute to adverse cumulative effects to the soil and therefore, soil productivity is now maintained. The acres used for the analysis are a summary of projects that were report in the FACTS activity layer from 2009 to the present. These acres are summarized in Attachment #4.

For the cumulative effects boundary area, there are approximately 133,000 (Attachment #4) of total treatment acres of past and current projects within the cumulative effects boundary (about 7 percent of the cumulative effects area). Assuming a 15 percent disturbance factor for treatments, there are a total of approximately 19,900 acres of ground disturbance from projects within the cumulative effects boundary area, or about 1 percent of the cumulative effects boundary area.

Vegetative ground cover in more recent projects (within the last 2 years) is in the process of recovery. Soil disturbance and erosion is less than the 4-FRI proposed action and smaller in extent and magnitude because fewer acres were treated (and therefore less than the 3.0 percent that would be generated from the 4-FRI proposed action). The magnitude of soil erosion above tolerable soil loss is believed to be similar in proportion to the 4-FRI proposed action, very minor in magnitude because similar harvesting techniques and BMPs were employed mitigating negative effects to soil and water. The combination of past and ongoing projects soil disturbance is limited in extent and magnitude and amount to about 1 percent within the cumulative effects boundary.

Reasonably Foreseeable Future Actions

Recreational activities include: hiking, viewing wildlife, hunting, dispersed car-camping, backpack camping, orienteering, horseback riding, caving, rock climbing, photography, picnicking, taking scenic drives, ORV/ATV use, bicycling, shooting, and gathering in family or social groups. Snowmobile use and cross-country skiing are increasing as popular uses in the area. During normal winters, snowmobiles are the only vehicles that access the area. Other

potential uses within the project area include firewood cutting, post and pole cutting, collecting boughs and cones, collecting and transplanting wildlings, gathering antlers, collecting food and medicinal resources such as berries, nuts, mushrooms, and bracken fern, and collecting biological specimens for research. These activities are unquantifiable.

Fuels reduction related projects are expected to occur within the cumulative effects project boundary and are summarized in Attachment 4 to this report. The table within Attachment 4 summarizes the acres of disturbance for future and foreseeable actions. For the cumulative effects boundary area, there are approximately 150,000 acres of future and foreseeable treatment acres within the cumulative effects boundary (about 7 percent of the cumulative effects area). Assuming a 15 percent disturbance factor for treatments, there are a total of approximately 22,400 acres of ground disturbance from projects within the cumulative effects boundary area, or about 1 percent of the cumulative effects boundary area. Ground disturbing actions will implement BMPs to mitigate non point source pollution to connected streamcourses.

Summary of Cumulative Effects

There are about 45,000 acres of baseline ground disturbance from roads, private land, grazing allotments, and powerline corridors that occur across the cumulative effects analysis area. The total acres of past, present are future and foreseeable treatment acres within the cumulative effects project area are roughly 282,400 acres (133,000 past and present projects and 150,000 acres of future, foreseeable projects) or about 14 percent of the cumulative boundary area. Of these treatment acres, we are assuming that there would be about 15 percent of these acres will have ground disturbance, or about 42,400 acres, or just under 2 percent of the cumulative effects analysis area are expected to have ground disturbance from past, present and future or foreseeable projects. The 4FRI EIS would add an additional about 61,000 acres of ground disturbance for a total acreage of ground disturbance across the cumulative effects analysis area, for a total acreage of disturbed ground of nearly 148,396 acres, or about **7** percent of the cumulative effects boundary area (see table 21below).

As stated above in the baseline disturbance assessment, there are four 6th code watersheds where urban development has a large impact on ground disturbance areas. This project, plus current and future foreseeable projects impacts these watersheds in the following manner. In the Cataract Creek Headwaters watershed there was an 11 percent baseline ground disturbance prior to any activities. This percent of ground disturbance increases to 14 percent total cumulative ground disturbance. In the Sinclair Wash watershed, there was a 25 percent baseline ground disturbance prior to any activities. This percent of ground disturbance increases slightly to 26 percent total cumulative ground disturbance with all projects, current and foreseeable projects. In the Lower Rio de Flag watershed there was an 18 percent baseline ground disturbance that increases to 20 percent total cumulative ground disturbance. In the Middle Oak Creek watershed, there was an 11 percent baseline ground disturbance that increases to 13 percent total cumulative ground disturbance. Implementation of BMP's would minimize any impacts to watersheds, and wouldbe especially important in the watersheds that have a high urban impact already existing.

Table 21. Summary of cumulative effects – Alternative B

Total Cumulative Effects	Total EIS	Baseline	Future	Current/ Ongoing	Project Total

Analysis Area 6th Code (Acres)	Ground Disturbance Acres	6th code Ground Disturbance (Percent)	Baseline Ground Disturbance Acres	Total Treatment Acres	Total Ground Disturbance Acres	Total Treatment Acres	Total Ground Disturbance Acres	Total Cum Effects Ground Disturbance (Acres)	Total Cum Effects Ground Disturbance (Percent)
2,032,080	60,995	3.0	45,041	149,561	22,434	132,837	19,926	148,396	7.3

Executive Summary of Cumulative Effects

For past, present and reasonably foreseeable actions including the 4-FRI proposed action, the extent (about 7 percent) and magnitude of soil disturbance, would not be exceeded with this project within the cumulative effects boundary. Further protection of soil resources is provided by the use of Best Management Practices that minimize the potential for soil disturbance. Identified and implemented BMP's are expected to reduce the risk on accelerated erosion, sediment delivery and nonpoint source pollution to connected streamcourses and maintain water quality in all watersheds. In addition to the use of BMP's, the completion and implementation of the Travel Management EIS will further reduce the number of acres disturbed by closing and decommissioning roads within the cumulative effects boundary. Because of these facts, this alternative would not provide a detrimental cumulative effect to soil resources within the cumulative effects boundary.

Summary of Effects to Soil Resources - Alternative B

Soil disturbance by treatment type within treatment areas ranges from less than .1percent to 3.9 percent with low and high intensity thinning causing the greatest soil disturbance by overall acres. Collectively and treatment area wide within watersheds, the maximum soil disturbance for implementing all mechanical treatments and prescribed burning would be approximately 3.0 percent within 6th HUC watershed and 10.4percent within treatment areas and varies by watershed (Attachment 1 and 4). This assumes all acres are implemented and the maximum ground disturbance occurs. Since total soil disturbance is about 3.0 percent within the watersheds, the combination of all treatments do not pose a risk to soil resources and soil productivity and watershed function is expected to be maintained.

There is no predicted soil erosion above tolerable soil loss rates where mechanical treatments are proposed but there could be up to about 2 percent on slopes greater than 40 percent where burn only occurs. For burning, since the amount of erosion above tolerable soil loss is limited to up to 2 percent, soil productivity is not expected to be appreciably reduced and would be maintained. The amount of coarse woody material is not quantified but for ponderosa pine types, maintenance of 5-7 tons/acre of coarse woody material will improve soil nutrient cycling (USDA 1994b) and listed as BMP in table 3.

Within the pinyon-juniper cover type, snags would be managed for 1 per acre over 75 percent of the area and coarse woody debris (CWD) would be managed for an after treatment average of 1 to 3 tons per acre. Where available, a portion of the CWD would include two logs ≥10" and ≥10' in length (Huffman 2010, pers. Comm. From Brewer, 2008). Identified and implemented BMPs are expected to mitigate possible negative effects to soils and improve nutrient cycling function.In addition, implementation of identified BMPs would reduce the threat of high burn severity,

accelerated erosion, sediment delivery into connected streamcourses, and not threaten water quality downstream.

Identified and implemented BMP's would reduce the risk of accelerated erosion, sediment delivery and nonpoint source pollution to connected streamcourses, and maintain water quality in all watersheds. It is important to realize that not all ground disturbing treatments would occur in the same year and soil disturbances represent all treatments implemented the first year as the worst case scenario of disturbance. Prescribed burning would occur after year one and some treatments may be staggered in time and place allowing time enough for the soil to begin dropping pine needle cast and recover. Identified and implemented BMPs are expected to mitigate possible negative effects to soils.

6th HUC watershed wide, the maximum soil disturbance for implementing all mechanical treatments and prescribed burning would be approximately 3.0 percent and varies by watershed. This assumes all acres are implemented and the maximum ground disturbance occurs. Since total soil disturbance is about 3.0 percent, the combination of all treatments do not pose a risk to soil resources and soil productivity and watershed function is expected to be maintained or improved. Overall, proposed treatments would result if effects to soils would be similar to those described above treatment are wide but to a lesser degree due to the scale of the watershed (larger than treatment area). Compared to treatment area disturbance, watershed level disturbance is about 3 times less, effectively diluting the overall negative impacts to watershed function. Consequently, restoration of fire adapted ecosystems would begin to occur and where watersheds are functional at risk or impaired, their condition can be expected to improve both in the short and long-term (greater than 2 years) maintaining or improving soil productivity and water quality.

Overall, long-term soil productivity and watershed function for the proposed action are expected to be protected, maintained or improved on more acres than alternative A and D (respectively) but not quite as many acres as alternative C since C would include more grasslands restoration. Implementation of Alternatives B would reduce the risks to life, property, soil productivity and water quality from post wildfire storm events (flooding and debris flows). Implementation of alternative B would meet the projects purpose and need and meet the Kaibab and Coconino national forest plan standards and guidelines.

Cumulative Effects Summary Including Alternative B

For past, present and reasonably foreseeable actions including the 4-FRI proposed action, the extent (about 7 percent) and magnitude of soil disturbance, would not be exceeded with this project within the cumulative effects boundary. Further protection of soil resources is provided by the use of Best Management Practices that minimize the potential for soil disturbance. Identified and implemented BMP's are expected to reduce the risk on accelerated erosion, sediment delivery and nonpoint source pollution to connected streamcourses and maintain water quality in all watersheds. In addition to the use of BMP's, the completion and implementation of the Travel Management EIS would further reduce the number of acres disturbed by closing and decommissioning roads within the cumulative effects boundary. Because of these facts, this alternative would not provide a detrimental cumulative effect to soil resources within the cumulative effects boundary.

Alternative C

Direct and Indirect Effects

Appendix A and B identify major soil interpretations by strata including timber harvest limitation, erosion hazard, natural regeneration potential and soil condition. Tables 22 to 25 details treatment type acreage by strata for alternative C. Road and stream channel effects are the same as alternative B.

Compared to alternative B, alternative C has slightly fewer acres of high intensity mechanical, more acres of grassland restoration and less acres of operation burn because there are more acres of grassland that would likely not be included in an operational burn. All other treatments and soils are similar in acres and soil disturbance to those in alternative B and the soils have similar erosion hazards (see tables below for disclosure of acres of severe erosion hazard by treatment intensity type---note a slight decrease in high intensity treatment acres on severe erosion hazard), timber harvest limitations and soil conditions. The difference in acreage between B and C for mechanical treatments is very small and accounted for in soil disturbance calculation and predictions.

Table 22. Alternative C Acres of Severe Erosion with Low-Intensity Treatments

Low Intensity Treatments			
Treatment Type	**Acres**	**Treatment Type**	**Acres**
AZGFD Trt	81	PFA - IT25	73
dPFA - IT10	40	PFA - PineSage	11
dPFA - UEA10	26	PFA - SI25	35
dPFA - UEA25	94	PFA - UEA25	105
IT10	931	PFA - UEA40	895
IT25	980	PineSage	129
MSO Restricted Trt	12,497	SI10	158
MSO Target Trt	1,403	SI25	515
MSO Threshold Trt	546	UEA10	1,339
PAC - Mechanical	3,117	UEA25	2,011
PFA - IT10	62	**Grand Total**	**25,048**

Table 23. Alternative C. Acres of Severe Erosion with High-Intensity Treatments

High-Intensity Treatments	
Treatment Type	**Acres**
dPFA - IT40	28
dPFA - UEA40	261
IT40	4,298

High-Intensity Treatments	
Treatment Type	**Acres**
PFA - IT40	318
PFA - SI40	37
PFA - UEA40	895
UEA40	8,158
WUI55	253
Grand Total	**14,248**

Table 24. Alternative C. Acres of Severe Erosion with Aspen and Savanna Treatments

Treatment Type	Acres
Aspen	234
Grand Total	**234**
Savanna	3,628
Grand Total	**3,628**

The effects to soil and water resources including BMPs and measures to mitigate erosion hazards, timber limitations and soil condition upon implementation of alternative C for all treatments are the same as those listed under alternative B except for grassland restoration. The effects to soil and water resources for grassland restoration under implementation of alternative C is similar to other action alternatives except the extent of soil disturbance is higher and summarized below.

Grassland Restoration

There are about 59,463 acres proposed under alternative C compared to 11,222 acres for all other action alternatives. Of these acres, about 550 acres (table 25) occur on soils with severe erosion hazard.

Table 25. Alternative C Acres of Severe Erosion Hazard with Grassland Treatments

Treatment Type	Acres
GL – Restoration	109
Grassland Mechanical	435
Grand Total	**544**

Implementation of alternative C grassland restoration would result in about 1,784 acres of actual soil disturbance compared to about 336 acres or .06 percent for other action alternatives. Even though there are more acres of soil disturbance predicted than other action alternatives, the vast majority of soils occur in areas with slight erosion hazard (see Attachment #3) indicating exposing bare soil through treatment will not result in accelerated soil loss or loss of soil productivity.

A threshold of 15 percent aerial extent disturbance is assigned as a guideline where soil impairment and productivity may be appreciably reduced. Since the disturbance is less than 15 percent, soil productivity is expected to be maintained. Therefore, soil disturbance associated with grassland restoration does not pose a risk to long-term soil productivity. Total soil disturbance for all treatments is displayed and analyzed following all individual treatment analysis.

The bare soil exposed during treatment can be expected to respond by increasing herbaceous vegetation and litter including grass and forb production after the first year. Furthermore, herbaceous vegetation can be expected to expand in areas adjacent to areas where trees have been removed because there will be less competition for soil moisture and nutrients from trees. The increase in herbaceous vegetation and protective vegetative ground cover will better stabilize the soil and improve vegetation composition and productivity.

Resource protection measures and BMP's are the same as those listed under alternative B, grassland restoration. They are also listed in Appendix A for all action alternatives and by strata in Appendix A. Soils with severe erosion hazard are expected to be mitigated by identified BMPs.

Most soil conditions are satisfactory (see Attachment #3) but there are some areas with impaired or unsatisfactory soil conditions. Increased herbaceous cover improves soil infiltration and nutrient cycling because an increase in grass species corresponds to a larger root network essential in loosening up and improvement of soil structure and promotes better water infiltration, air exchange and soil microbial cycling of nutrients. Consequently, where soil conditions are impaired or unsatisfactory, their condition can be expected to improve both in the short and long-term (greater than 2 years).

Many 6th HUC watersheds are functional at risk and a few impaired (see Appendix C) due in part to overstocked ponderosa pine forests, road networks that alter hydrology and accelerate erosion, and less than satisfactory soil condition. Reducing tree canopy cover and associated hazardous fuels would move the grassland towards a fire adapted ecosystem. Restoration would reduce the risk of uncharacteristic, high severity wildfire that could result in removal of protective vegetative ground cover, and accelerate soil erosion and sediment delivery into connected channels thereby reducing soil productivity and water quality.

Overall, grassland restoration along with other proposed treatments can be expected to maintain the grassland ecosystem by removing encroaching trees and increase ecosystem resiliency, to uncharacteristic fire. Grassland restoration would move soils and watersheds towards satisfactory and functional condition in both the short and long-term and maintain or improve long-term soil productivity and water quality. A threshold of 15 percent aerial extent disturbance is assigned as a guideline where soil impairment and productivity may be appreciably reduced. Since the disturbance is less than 15 percent, soil productivity is expected to be maintained. Therefore, soil disturbance associated with grassland restoration does not pose a risk to long-term soil productivity.

Treatment Area and 6th HUC Area-Wide Soil Disturbance

Predicted soil disturbance and erosion above tolerable soil loss treatment area wide and by 6th HUC watershed upon implementation of alternative C is captured in the following table 26. Predicted soil disturbance for all alternatives are compared in tables 4, 5 and 6 under comparison of alternatives.

Table 26. Alternative C Summary of Direct Soil Effects

	Alternative C Acres	Alternative C Percent of Treatment Area	Alternative C Percent of Watershed
Soil disturbance from mechanical activities[4]	54,495	9.2	2.7
Soil disturbance from potential high-severity burns	11,863	2.0	.6
Total soil disturbance (high- severity burns and mechanical)	66,358	11.2	3.3
Soil disturbance from mechanical activities and high-severity fire (range: low to high)		2.2-19.4	.1-11.2
Potential soil erosion above tolerable levels When 33 percent of soils are severely burned		Up to 2	
Potential soil erosion above tolerable levels when all (100 percent) of soils are severely burned		Up to 2	
Soil erosion above tolerable levels from mechanical activities	0	0	0

Acres and percents are approximate

Overall implementation of alternative C would result in soil disturbance of about 66,358 acres or 11.2 percent in the treatment area or 3.3 percent in the affected watersheds. Implementation of alternative B would result in very similar soil disturbance at about 63,866 acres or 10.4 percent of the treatment area and 3.0 percent of affected watersheds. Therefore, the effects of implementation of alternative C would be similar to those described under alternative B at the treatment area scale and about the same of a little less at the 6th HUC watershed scale.

Similar to alternative B, there would be no predicted soil erosion above tolerable soil loss rates where mechanical treatments are proposed but there could be up to about 2 percent on slopes greater than 40 percent where burn only occurs. For burning, since the amount of erosion above tolerable soil loss is limited to up to 2 percent, soil productivity is not expected to be appreciable reduced and would be maintained. In addition, implementation of identified BMPs would reduce the threat of high burn severity, accelerated erosion, sediment delivery into connected streamcourses, and not threaten water quality downstream.

Identified and implemented BMP's are expected to reduce the risk on accelerated erosion, sediment delivery and nonpoint source pollution to connected streamcourses and maintain water quality in all watersheds including those with soil disturbance greater than about 15 percent. It is important to realize that not all ground disturbing treatments would occur in the same year and

[4] Includes acres of ground disturbacne from all harvest treatments, road treatment acres, and channel treatment acres.

soil disturbances represent all treatments implemented the first year as the worst case scenario of disturbance. Prescribed burning would occur after year one and some treatments may be staggered in time and place allowing time enough for the soil to begin dropping pine needle cast and recover.

For ponderosa pine types, the amount of coarse woody material is not quantified but maintenance of 5-7 tons/acre of coarse woody material in ponderosa pine would improve soil nutrient cycling (USDA 1994b) and listed as BMP in table 3. Within the pinyon-juniper cover type, snags would be managed for 1 per acre over 75 percent of the area and coarse woody debris (CWD) would be managed for an after treatment average of 1 to 3 tons per acre. Where available, a portion of the CWD would include two logs ≥10" and ≥10' in length (Huffman 2010, pers. Com from Brewer, 2008). Identified and implemented BMPs are expected to mitigate possible negative effects to soils and improve nutrient cycling function.

Mechanical activities would not result in any soil loss above tolerable levels according to WEPP modeling. However, potential soil erosion above tolerable levels for alternative C could occur on up to about 2 percent of mechanically, untreated slopes greater than 40 percent from prescribed fire. Slopes greater than about 40 percent are proposed for low –intensity fire –only treatments. Fire treatments on these slopes would significantly reduce future fires risk of high severity fires. Soil loss exceeding tolerable amounts erode faster than renew themselves resulting in accelerated soil loss and loss of soil productivity as well as potentially deliver sediment to connected streamcourses. Again burning and mechanical treatments would not occur in the first year and be staggered in time and place and along with identified and implemented BMPs are expected to mitigate possible negative effects to soils.

Treatment area wide and 6th HUC watershed level effects are similar as those described under alternative B except there would be slightly more soil disturbance at the 6th HUC watershed scale in alternative C. Overall, long-term soil productivity and watershed function are expected to be maintained or improved much better than alternative A and about the same acreage as alternative B. Grassland ecosystems would be maintained better than alternative A and B. Implementation of alternatives C would meet the projects purpose and need and meet the Kaibab and Coconino national forest plan standards and guidelines.

There would be no predicted soil erosion above tolerable soil loss rates where mechanical treatments are proposed but there could be up to about 2 percent on slopes greater than 40 percent where burn only occurs. For burning, since the amount of erosion above tolerable soil loss is limited to up to 2 percent, soil productivity is not expected to be appreciable reduced and would be maintained. In addition, implementation of identified BMPs would reduce the threat of high burn severity, accelerated erosion, sediment delivery into connected streamcourses, and not threaten water quality downstream. Implementation of alternative B meets the projects purpose and need and meets the Kaibab and Coconino NF forest plan standards and guidelines.

Effects to Soil Condition/Productivity and Watershed Function

See Table 5a and 5b for a comparisoneffects to soil condition, soil productivity and watershed function by alternative.

Treatment area wide and 6th HUC watershed level effects are similar as those described under alternative B except there would be slightly more soil disturbance at the 6th HUC watershed scale in alternative C. Overall, long-term soil productivity and watershed function are expected to be

maintained, protected and improved much better than alternative A because of treatments to increase understory response from opening of canopies by thinning and reduction of fuels from prescribed burning on about 593,000 acres. The treatment acres in alternative C are slightly greater than alternative B, with the major differenc residing in treatment s tro grasslands. As such, grassland ecosystems would be maintained better than alternative B. Implementation of alternatives C would meet the projects purpose and need and meet the Kaibab and Coconino national forest plan standards and guidelines. Soil condition, productivity and watershed function would greatly improve, be maintained and protected.

Cumulative Effects

The geographic setting, boundary and potential projects are the same as alternative B.

Baseline Activities

Baseline activities are the same as alternative B. The total baseline ground disturbance is about 45,040 acres for the cumulative effects area, or about 2 percent of the entire cumulative effects area. There are four 6th code watersheds where urban development has a large impact on ground disturbance areas—Cataract Creek Headwaters (11 percent baseline ground disturbance) associated with the City of Williams, Sinclair Wash (25 percent) and Lower Rio de Flag (18 percent) associated with the City of Flagstaff, Middle Oak Creek (11 percent) associated with Sedona and private land developed adjacent to Oak Creek.

Past Actions and Present Actions

Past and present activities and timeframe thereof, are the same as alternative B. The acres used for the analysis are a summary of projects that were report in the FACTS activity layer from 2009 to the present and are the same as alternative B. These acres are summarized in Attachment #4. For the cumulative effects boundary area, there are approximately 133,000 (Attachment #4) of total treatment acres of past and current projects within the cumulative effects boundary (about 7 percent of the cumulative effects area). Assuming a 15 percent disturbance factor for treatments, there are a total of approximately 19,900 acres of ground disturbance from projects within the cumulative effects boundary area, or about 1 percent of the cumulative effects boundary area.

Reasonably Foreseeable Future Actions

The activities and acreages of reasonably foreseeable future actions are the same as alternative B. Ground disturbing actions will implement BMPs to mitigate non point source pollution to connected streamcourses.Fuels reduction related projects are expected to occur within the cumulative effects project boundary and are summarized in Attachment #4 to this report. The table within Attachment 4 summarizes the acres of disturbance for future and foreseeable actions. For the cumulative effects boundary area, there are approximately 150,000 acres of future and foreseeable treatment acres within the cumulative effects boundary (about 7 percent of the cumulative effects area). Assuming a 15 percent disturbance factor for treatments, there are a total of approximately 22,400 acres of ground disturbance from projects within the cumulative effects boundary area, or about 1 percent of the cumulative effects boundary area.

Summary of Cumulative Effects

There are about 45,000 acres of baseline ground disturbance from roads, private land, grazing allotments, and powerline corridors that occur across the cumulative effects analysis area. The total acres of past, present are future and foreseeable treatment acres within the cumulative effects project area are roughly 282,400 acres or about 14 percent of the cumulative boundary area. Of these treatment acres, we are assuming that there would be about 15 percent of these acres would have ground disturbance, or about 42,400 acres, or just under 2 percent of the cumulative effects analysis area are expected to have ground disturbance from past, present and future or foreseeable projects. The 4FRI EIS alternative C would add an additional 66,358 acres of ground disturbance for a total acreage of ground disturbance across the cumulative effects analysis area, for a total acreage of disturbed ground of nearly 153,759 acres, or about 8 percent of the cumulative effects boundary area (see table below).

As stated above in the baseline disturbance assessment, there are four 6th code watersheds where urban development has a large impact on ground disturbance areas. This project, plus current and future foreseeable projects impacts these watersheds in the following manner. In the Cataract Creek Headwaters watershed there was an 11 percent baseline ground disturbance prior to any activities. This percent of ground disturbance increases to 14 percent total cumulative ground disturbance. In the Sinclair Wash watershed, there was a 25 percent baseline ground disturbance prior to any activities. This percent of ground disturbance increases slightly to 26 percent total cumulative ground disturbance with all projects, current and foreseeable projects. In the Lower Rio de Flag watershed there was an 18 percent baseline ground disturbance that increases to 20 percent total cumulative ground disturbance. In the Middle Oak Creek watershed, there was an 11 percent baseline ground disturbance that increases to 13 percent total cumulative ground disturbance. Implementation of BMP's would minimize any impacts to watersheds, and would be especially important in the watersheds that have a high urban impact already existing.

Table 27. Alternative C Summary of Cumulative Effects

Total Cumulative Effects Analysis Area 6th Code (Acres)	Total EIS		Baseline		Future	Current/ Ongoing		Project Total	
	Ground Disturbance Acres	6th code Ground Disturbance (Percent)	Baseline Ground Disturbance Acres	Total Treatment Acres	Total Ground Disturbance Acres	Total Treatment Acres	Total Ground Disturbance Acres	Total Cum Effects Ground Disturbance (Acres)	Total Cum Effects Ground Disturbance (Percent)
2,032,080	66,358	3.3	45,041	149,561	22,434	132,837	19,926	153,759	7.6

Executive Summary of Cumulative Effects Alternative C

Alternative C protection of soil resources is provided by the use of Best Management Practices that minimize the potential for soil disturbance. Identified and implemented BMP's are expected to reduce the risk on accelerated erosion, sediment delivery and nonpoint source pollution to connected streamcourses and maintain water quality in all watersheds. In addition to the use of

BMP's, the completion and implementation of the Travel Management EIS would further reduce the number of acres disturbed by closing and decommissioning roads within the cumulative effects boundary. Because of these facts, this Alternative would not provide a detrimental cumulative effect to soil resources within the cumulative effects boundary.

Summary of Effects to Soil Resources - Alternative C

Collectively and treatment area wide within 6th code watersheds, the maximum soil disturbance for implementing all mechanical treatments and prescribed burning would be approximately 3.3 percent (within 6th HUC watershed and 11.2 percent within treatment areas) and varies by watershed. This assumes all acres are implemented and the maximum ground disturbance occurs. Since total soil disturbance in affected watersheds is about 3.3 percent, the combination of all treatments do not pose a risk to soil resources and soil productivity and watershed function is expected to be maintained.

There would be no predicted soil erosion above tolerable soil loss rates where mechanical treatments are proposed but there could be up to about 2 percent on slopes greater than 40 percent where burn only occurs. For burning, since the amount of erosion above tolerable soil loss is limited to up to 2 percent, soil productivity is not expected to be appreciably reduced and would be maintained. The amount of coarse woody material is not quantified but for ponderosa pine types, maintenance of 5-7 tons/acre of coarse woody material will reduce risk of uncharacteristic fires resulting in high burn severity and soil damage and should improve soil nutrient cycling (USDA 1994b) and listed as BMP in table 3.

Within the pinyon-juniper cover type, snags would be managed for 1 per acre over 75 percent of the area and coarse woody debris (CWD) would be managed for an after treatment average of 1 to 3 tons per acre. Where available, a portion of the CWD would include two logs ≥10" and ≥10' in length (Huffman 2010, pers. Com. From Brewer, 2008). Identified and implemented BMPs are expected to mitigate possible negative effects to soils and improve nutrient cycling function.

Identified and implemented BMP's are expected to reduce the risk of accelerated erosion, sediment delivery and nonpoint source pollution to connected streamcourses and maintain water quality in all watersheds including those with soil disturbance greater than about 15 percent. It is important to realize that not all ground disturbing treatments would occur in the same year and soil disturbances represent all treatments implemented the first year as the worst case scenario of disturbance. Prescribed burning would occur after year one and some treatments may be staggered in time and place allowing time enough for the soil to begin dropping pine needle cast and recover. Identified and implemented BMPs are expected to mitigate possible negative effects to soils.

6th HUC watershed wide, the maximum soil disturbance for implementing all mechanical treatments and prescribed burning would be approximately 3.3percent and varies by watershed. This assumes all acres are implemented and the maximum ground disturbance occurs. Since total watershed soil disturbance is about 3.3 percent the combination of all treatments do not pose a risk to soil resources and soil productivity and watershed function is expected to be maintained or improved. Overall, proposed treatments would result if effects to soils would be similar to those described above treatment are wide but to a lesser degree due to the scale of the watershed (larger than treatment area). Compared to treatment area disturbance, watershed level disturbance is about 3 times less, effectively diluting the overall negative impacts to watershed function.

Consequently, restoration of fire adapted ecosystems would begin to occur and where watersheds are functional at risk or impaired, their condition can be expected to improve both in the short and long-term (greater than 2 years) maintaining or improving soil productivity and water quality. Implementation of Alternatives C would reduce the risks to life, property, soil productivity and water quality from post wildfire storm events (flooding and debris flows).

Treatment area wide and 6th HUC watershed level effects are similar as those described under alternative B except there would be slightly more soil disturbance at the 6th HUC watershed scale in alternative C. Overall, long-term soil productivity and watershed function are expected to be maintained, protected and improved much better than alternative A because of treatments to increase understory response from opening of canopies by thinning and reduction of fuels from prescribed burning on about 593,000 acres. The treatment acres in alternative C are slightly greater than alternative B, with the major differenc residing in treatment s tro grasslands. As such, grassland ecosystems would be maintained better than alternative B. Implementation of alternatives C would meet the projects purpose and need and meet the Kaibab and Coconino national forest plan standards and guidelines. Soil condition, productivity and watershed function would greatly improve, be maintained and protected.

Alternative D

Direct and Indirect Effects

Alternative D responds to issue 2 (smoke) in chapter 1 by decreasing the acres to be prescribed burned by over 50 percent (in comparison to alternative B). In this alternative, prescribed burning is not occurring where mechanical harvest has occurred and is predominantly used on grassland vegetation and areas that have an existing condtion that is close to desired conditions (about 178,790 acres). Road and stream channel actions and effects are the same as alternative B.

Alternative D has the same mechanical treatments on the same soils as alternative B and therefore, similar effects to soil and water resources including BMPs and measures to mitigate erosion hazards, timber limitations and soil condition as alternative B. Alternative D has more grassland restoration acres than alternative B but less than C with effects similar to alternative C. However, because alternative D would only prescribe burn about 1/3 of the acres as alternative B, and would be done mostly in grasslands, there would be different effects to soil and resources described below.

Table 28. Alternative D Summary of Direct Soil Effects

	Alternative D Acres	Alternative D Percent of Treatment Area	Alternative D Percent of Watershed
Soil disturbance from mechanical activities[5]	49,238	8.7	2.4

[5] Includes acres of ground disturbacne from all harvest treatments, road treatment acres, and channel treatment acres.

Soil disturbance from potential high-severity burns	3,576	.6	.2
Total soil disturbance (high- severity burns and mechanical)	52,814	9.3	2.6
Soil disturbance from mechanical activities and high-severity fire (range: low to high)		.1-14.1	.1-9.6
Potential soil erosion above tolerable levels When 33 percent of soils are severely burned		Up to 2	
Potential soil erosion above tolerable levels when all (100 percent) of soils are severely burned		Up to 2	
Soil erosion above tolerable levels from mechanical activities	0	0	0

Acres and percent's are approximate

Total soil disturbance at the treatment level is 9.3 percent and 2.6 percent at the watershed scale. Predicted soil disturbance for all alternatives are compared in table 4, 5 and 6. Overall, implementation of alternative D would not meet the projects purpose and need as well as other action alternatives (alternative B and C) to move towards the desired condition of having a resilient forest by reducing the potential for undesirable fire behavior and its effects and maintaining the mosaic of tree groups and interspaces with frequent, low-severity fire by having a forest structure that does not support wide-spread crown fire. The consequences to soil and water resources of removing prescribed burning from mechanically treated areas would be to greatly exceed the amount of course wood debris on-site above the recommended 5-7 tons per acre on some sites. In addition, thick forest duff is common on many sites and has been observed to reduce the herbaceous understory growth compared to thinner duff layers (Steinke Per. Observations 1989-2012). On these sites, long-term soil productivity will be met; however, if a wildfire burns within these sites, there would be a higher percentage of acreage that would burn with a higher intensity because of heavier fuel loading.). Lata in her fire ecology report for this project notes the following for fire effects for this Alternative:

> "In the short term (<20 years), across the treatment area the potential for undesirable fire behavior and effects would be reduced (indirect effects of proposed treatments) by breaking up the vertical and horizontal canopy fuels (direct effects of proposed treatments). In mechanically treated areas, potential for high severity surface fires would remain the same or increase. In burn only areas, canopy base heights would increase and canopy bulk densities would decrease, decreasing the potential for crown fire, and surface fuel loads of litter and duff would be reduced (all direct effects), and replaced by the light, flashy fuels that would be stimulated by post-treatment conditions (indirect effects), decreasing the potential for high severity surface fire effects (indirect effects). Air quality impacts (indirect effects) could increase some as first and second entry prescribed fires are implemented.
>
> In the long term (>20 years), potential for undesirable fire behavior, as assessed by changes to canopy fuels, would lower than existing condition for approximately 35 percent of the ponderosa pine in the treatment area. Potential for undesirable fire effects, as assessed by

changes to canopy fuels and surface fuel loading, would not remain lower than existing condition for any of the ponderosa pine in the treatment area. Air quality impacts (indirect effects) would decrease as the acres are moved in to maintenance mode and fewer emissions per acre are produced by fire."

By eliminating prescribed burning higher severity surface wildfires would have a detrimental effect on soil heating, mineralization, soil sterilization or soil damage. Failure to control burning conditions, managers would not be able to manipulate the heat produced by burning CWD and thereby risk damage to plants and soils (Passovoy, Fule 2006)

Maintaining soil productivity over the long term generally requires presence of soil organic material and fire effects characteristic of the natural fire regime. Implementation of alt. D would not restore the natural fire regime. Most fires characteristic of the historic fire regime or moderate severity prescribed fires are likely to enhance soil development and fertility over the longterm by periodic release of nutrients. However, extremely severe fires or large severely burned areas within fires would be expected with implementation of alt. D and likely to be highly detrimental to forest soils (Brown 2003).

Under severe burning conditions (predicted for many soils on alt. D) soil organic matter would be removed or destructively altered, nutrients volatilized, water-absorbing capacity decreased, and living plant parts and microorganisms killed. Loss of soil organic matter that is necessary for sustaining the biological activity of soils (DeBano and others 1998) is probably the most serious long-term concern (Brown 2003).

Thinning followed by prescribed burning reduces canopy, ladder, and surface fuels, thereby providing maximum protection from severe fires in the future (Peterson and others 2003 in Graham et al. 2004:26). Potential fire intensity and/or severity in thinned stands are significantly reduced only if thinnings are accompanied by reducing the surface fuels (woody fuel stratum) created from the thinning operations (Alexander and Yancik 1977, Hirsch and Pengelly 1999, Graham and others 1999 in Graham et al. 2004:26-27). Depending on the spatial arrangement of current fuel loading, the effect of a wildfire on these sites would be similar to alternative A. The difference between the two alternatives is that the tree arrangement and relative openness of the post-harvest setting would not lend itself to large crown fire acreages (please refer to change in crown fire potential that is disclosed on the fire ecologist specialist report), thus the effects to soils from the indirect effects from wildfire would not be as extensive in alternative D as it would be in alternative A. The amount of acres that would be affected from high severity surface fire effects is not quantifiable, but we will assume that 25% of the mechanically treated acres will have these effects.

Overall, removing fire from treated areas would pose risk to short and long term soil productivity, water quality and watershed function similar to alternative A and more than alternatives B and C and not meet the projects purpose and need. Implementation of alternative D would meet the forest plans standards and guidelines but not meet the purpose and need of this project as well as alternatives B and C.

Effects to Soil Condition/Productivity and Watershed Function

See Table 5a and 5b for a comparison of effects to soil condition, soil productivity and watershed function by alternative.

Implementation of Alternative D would not meet the projects purpose and need as well as other action alternatives but would come closer than Alternative A. Far fewer acres would be treated with prescribed fire and maintenance resulting in long-term buildup of hazardous fuels and increased canopy cover of trees that pose risk to soil productivity and watershed function from uncharacteristic fires and nutrient cycling soil functions from sparse understories.

Cumulative Effects

The geographic setting, boundary and potential projects are the same as alternative B.

Baseline Activities

Baseline activities are the same as alternative B. The total baseline ground disturbance is about 45,040 acres for the cumulative effects area, or about 2 percent of the entire cumulative effects area. There are four 6th code watersheds where urban development has a large impact on ground disturbance areas: Cataract Creek Headwaters (11 percent baseline ground disturbance) associated with the City of Williams, Sinclair Wash (25 percent) and Lower Rio de Flag (18 percent) associated with the City of Flagstaff, Middle Oak Creek (11 percent) associated with Sedona and private land developed adjacent to Oak Creek.

Past Actions and Present Actions

Past and present activities and timeframe thereof, are the same as alternative B. The acres used for the analysis are a summary of projects that were report in the FACTS activity layer from 2009 to the present and are the same as alternative B.These acres are summarized in Attachment #4. For the cumulative effects boundary area, there are approximately 133,000 (Attachment #4) of total treatment acres of past and current projects within the cumulative effects boundary (about 7 percent of the cumulative effects area). Assuming a 15 percent disturbance factor for treatments, there are a total of approximately 19,900 acres of ground disturbance from projects within the cumulative effects boundary area, or about 1 percent of the cumulative effects boundary area.

Reasonably Foreseeable Future Actions

The activities and acreages of reasonably foreseeable future actions are the same as alternative B. Ground disturbing actions will implement BMPs to mitigate non point source pollution to connected streamcourses.

Fuels reduction related projects are expected to occur within the cumulative effects project boundary and are summarized in Attachment #4 to this report. The table within Attachment 4 summarizes the acres of disturbance for future and foreseeable actions. For the cumulative effects boundary area, there are approximately 150,000 acres of future and foreseeable treatment acres within the cumulative effects boundary (about 7 percent of the cumulative effects area). Assuming a 15 percent disturbance factor for treatments, there are a total of approximately 22,400 acres of ground disturbance from projects within the cumulative effects boundary area, or about 1 percent of the cumulative effects boundary area.

Summary of Cumulative Effects

There are about 45,000 acres of baseline ground disturbance from roads, private land, grazing allotments, and powerline corridors that occur across the cumulative effects analysis area. The total acres of past, present are future and foreseeable treatment acres within the cumulative effects

project area are roughly 282,400 acres, or about 14 percent of the cumulative boundary area. Of these treatment acres, we are assuming that there would be about 15 percent of these acres will have ground disturbance, or about 42,400 acres, or just under 2 percent of the cumulative effects analysis area are expected to have ground disturbance from past, present and future or foreseeable projects. The 4FRI EIS alternative D would add roughly an additional 52,800 acres of ground disturbance for a total acreage of ground disturbance across the cumulative effects analysis area, for a total acreage of disturbed ground of nearly 140,200 acres, or about 7 percent of the cumulative effects boundary area (see table below) or very slightly less than B and C.

As stated above in the baseline disturbance assessment, there are four 6th code watersheds where urban development has a large impact on ground disturbance areas. This project, plus current and future foreseeable projects impacts these watersheds in the following manner. In the Cataract Creek Headwaters watershed there was an 11 percent baseline ground disturbance prior to any activities. This percent of ground disturbance increases to 14 percent total cumulative ground disturbance. In the Sinclair Wash watershed, there was a 25 percent baseline ground disturbance prior to any activities. This percent of ground disturbance increases slightly to 26 percent total cumulative ground disturbance with all projects, current and foreseeable projects. In the Lower Rio de Flag watershed there was an 18 percent baseline ground disturbance that increases to 20 percent total cumulative ground disturbance. In the Middle Oak Creek watershed, there was an 11 percent baseline ground disturbance that increases to 13 percent total cumulative ground disturbance. Implementation of BMP's would minimize any impacts to watersheds, and would be especially important in the watersheds that have a high urban impact already existing.

Table 29. Alternative D Summary of cumulative effects

Total Cumulative Effects Analysis Area 6th Code (Acres)	Total EIS		Baseline		Future	Current/ Ongoing		Project Total	
	Ground Disturbance Acres	6th code Ground Disturbance (Percent)	Baseline Ground Disturbance Acres	Total Treatment Acres	Total Ground Disturbance Acres	Total Treatment Acres	Total Ground Disturbance Acres	Total Cum Effects Ground Disturbance (Acres)	Total Cum Effects Ground Disturbance (Percent)
2,032,080	52,814	2.6	45,041	149,561	22,434	132,837	19,926	140,214	6.9

Executive Summary of Cumulative Effects Alternative D

Alternative D protection of soil resources is provided by the use of Best Management Practices that minimize the potential for soil disturbance. Identified and implemented BMP's are expected to reduce the risk on accelerated erosion, sediment delivery and nonpoint source pollution to connected streamcourses and maintain water quality in all watersheds. However, the absence of prescribed fire puts the soil resource at risk of adverse effects of high severity wildfire similar but slightly less due to lower fuel loading to those described alternative A. Identified and implemented BMP's are expected to reduce the risk on accelerated erosion, sediment delivery and nonpoint source pollution to connected streamcourses and maintain water quality in all

watersheds. In addition to the use of BMP's, the completion and implementation of the Travel Management EIS would further reduce the number of acres disturbed by closing and decommissioning roads within the cumulative effects boundary. Because of these facts, this alternative would not provide a detrimental cumulative effect to soil resources within the cumulative effects boundary.

Summary of Effects to Soil Resources - Alternative D

Collectively and treatment area wide within 6th code watersheds, the maximum soil disturbance for implementing all mechanical treatments and prescribed burning would be approximately 2.6 percent (within 6th HUC watershed and 9.3 percent within treatment areas) and varies by watershed. Since total soil disturbance is about 2.6 percent at watershed level and 9.3 percent at the treatment level, the combination of all treatments do not pose a risk to soil resources and soil productivity and watershed function is expected to be maintained.

There would be no predicted soil erosion above tolerable soil loss rates where mechanical occurs. Since burning is not proposed following mechanical treatments, soil productivity would be at risk from high severity wildfires similar to the effects described in alternative A, but probably slightly less since harvesting would reduce overall fuel load and extreme temperature, negative temperature to soil that might mineralize or sterilize organic matter. The amount of coarse woody material is not quantified but for ponderosa pine types, maintenance of 5-7 tons/acre of coarse woody material will improve soil nutrient cycling (USDA 1994b) and listed as BMP in table 3.

Within the pinyon-juniper cover type, snags would be managed for 1 per acre over 75 percent of the area and coarse woody debris (CWD) would be managed for an after treatment average of 1 to 3 tons per acre. Where available, a portion of the CWD would include two logs ≥10" and ≥10' in length (Huffman 2010 pers. Com. From Brewer, 2008). Identified and implemented BMPs are expected to mitigate possible negative effects to soils and improve nutrient cycling function.

Identified and implemented BMP's are expected to reduce the risk of accelerated erosion, sediment delivery and nonpoint source pollution to connected streamcourses and maintain water quality in all watersheds including those with soil disturbance greater than about 15 percent. It is important to realize that not all ground disturbing treatments would occur in the same year and soil disturbances represent all treatments implemented the first year as the worst case scenario of disturbance.

6th HUC watershed wide, the maximum soil disturbance for implementing all mechanical treatments would be approximately 2.6 percent and varies by watershed. This assumes all acres are implemented and the maximum ground disturbance occurs. Since total soil disturbance is about 2.6 percent, the combination of all treatments do not pose a risk to soil resources and soil productivity and watershed function is expected to be maintained or improved. Overall, proposed treatments would result in effects to soils similar to those described above treatment are wide but to a lesser degree due to the scale of the watershed (larger than treatment area). Compared to treatment area disturbance, watershed level disturbance is about 3 times less, effectively diluting the overall negative impacts to watershed function. Consequently, restoration of fire adapted ecosystems would begin to occur and where watersheds are functional at risk or impaired, their condition can be expected to improve both in the short and long-term (greater than 2 years) maintaining or improving soil productivity and water quality. Implementation of Alternative D

would not reduce the risks to life, property, soil productivity and water quality from post wildfire storm events (flooding and debris flows).

Overall, long-term soil productivity and watershed function are expected to be maintained, protected or improved much better than alternative A, but not on as many acres as alternatives B and C since prescribed fire would not be fully utilized. Implementation of alternative D would partially meet the projects purpose and need and be consistent with the Kaibab and Coconino National Forest forest plan standards and guidelines.

Comparison of Alternatives (see tables 3, 4, 5, 29a and 29b)

Alternative A

Since no restoration treatments are proposed, there would be no acres of soil disturbance in the treatment area or 6th HUC watershed from mechanical equipment and consequently no direct effects to the soil. There would be no direct soil or riparian disturbance to springs, seeps, streamcourses or roads. Under alternative A, there would be no mechanical activities and therefore no soil erosion above tolerable levels would occur from treatments.

Since there would be no prescribed burns or managed fires, there would be no acres of high burn severity in the treatment areas or 6th HUC watersheds that would indirectly affect soil productivity and water quality whereas there could be up to 2 percent in the action alternatives.

Under alternative A, and in the absence of proposed treatments in alternatives B, C, and D, according to WEPP soil erosion modeling, approximately 24 percent of all soils left untreated could be subject to soil erosion above tolerable levels from severe wildfires. However, assuming about 33 percent of wildfires would result in high burn severity; about 8 percent of all soils could result in soil erosion above threshold levels resulting in loss of soil surface and soil productivity.

Comparison of Alternatives

Across all action alternatives, total maximum soil disturbance by individual treatment type within treatment areas ranges from less than .1 percent to 3.9 percent with high intensity thinning causing the highest soil disturbance (calculation from Attachment 4).

Implementation of alternatives D would cause a little less soil disturbance than B and B a little less than C. Treatment area wide, D would cause about 9.3 percent, B about 10.4 percent and C about 11.2 percent. At the watershed level, D would cause the least amount of soil disturbance followed by B at about 6.9 percent and by C at 7.6 percent. Implementation of alternative D would cause less soil disturbance treatment area wide and at the 6th HUC watershed level than alternatives B and C because there would be at least 50 percent less prescribed fires from lack of proposed fire treatment in areas of mechanical treatment.

Even though alternative D soil disturbance would be a little less than alternatives B and C, implementation of B and C would better protect, maintain or improve soil condition, productivity and watershed function (table 29 a, and 29b). Implementation of treatments in B and C including hazardous fuel reduction, prescribed and maintenance burning, decommissioning of roads, stream restoration would greatly improve soil condition, protect and maintain soil productivity and improve and maintain watershed function. Implementation of Alternative D (with much less

prescribed and maintenance burning than B and C), would improve soil condition, productivity and watershed function in the short-term (less than 10 years) on a portion of the mechanical treatment areas. However, following treatments and without maintenance burning, about 25% of the area would build fuel loadings posing risk of uncharacteristic wildfire that could cause high burn severity resulting in accelerated soil erosion and loss of soil productivity and watershed function in the long-term. . Soil disturbance in B and C would be minimal (less than 15 percent and of low magnitude, short-term) and mitigated through implementation of (BMPs). Implementation of alternatives B or C would do a much more effective job of reducing the risk of uncharacteristic wildfire that could result in loss of soil productivity, downstream water quality and watershed function.

Under alternatives B, C, and D, equipment use and mechanical activities would only occur on slopes ranging from 0-40 percent and according to WEPP modeling predictions, no erosion above tolerable levels would occur because the treatments do not remove appreciable amounts of protective vegetative ground cover. Under alternative B, C, and D, only untreated slopes (greater than 40 percent) would be subject to wildfires resulting in about 2 percent of all soils with potential erosion above tolerable amounts. Road relocation in alternatives B, C and D would move just under 10 miles of road out of stream channels and would decrease sediments created from these roads, as well as decreasing peak flows from these sites. Restoration of stream channels would also moderate peak flows across the landscape.

Soil disturbance of all treatment types combined within the treatment area by watershed range from .1 percent - 19.4 percent and .1 percent -25.7 percent at the watershed level (Attachent 4). Identified and implemented BMP's are expected to reduce the risk on accelerated erosion, sediment delivery and nonpoint source pollution to connected streamcourses and maintain water quality in all watersheds.

See table 5a and 5b for a comparison of effects to soil condition, productivity and watershed function by alternative. The calculations used to determine and compare differences in watershed function and soil productivity are found in a spreadsheet in the project record named Soil Productivity Acre Effectiveness, Fleishman, 12, 2012.

Implementation of Alternatives B and C would best meet the projects purpose and need and meet the Kaibab and Coconino national forest plan standards and guidelines. Soil condition, productivity and watershed function would greatly improve, be maintained and protected. Alternative C would be slightly more beneficial than B because more grasslands would be treated resulting in improvement of soil condition and productivity. Implementation of Alternative D would meet the forest plans standards and guidelines but not fully meet the purpose and need of this project.

Overall, implementation of the proposed action is expected to maintain, improve and protect long-term soil productivity and watershed function much better than Alternative A, a little better than D and about the same as Alternative C. However, implementation of Alternative C would probably better restore grasslands than Alternative B and still has about the same amount of soil disturbance treatment area wide and at the 6th HUC watershed level. Implementation of Alternatives B and C would reduce the risks to life, property, soil productivity and water quality from post wildfire storm events (flooding and debris flows) much better than A and D.

Even though alternative D soil disturbance would be a little less than alternatives B and C, implementation of B and C would better protect, maintain or improve soil condition, productivity and watershed function (table 5a and 5b). Implementation of treatments in B and C including hazardous fuel reduction, prescribed and maintenance burning, decommissioning of roads, stream restoration would greatly improve soil condition, protect and maintain soil productivity and improve and maintain watershed function. Implementation of Alternative D (with much less prescribed and maintenance burning than B and C), would improve soil condition, productivity and watershed function in the short-term (less than 10 years) on a portion of the mechanical treatment areas. However, following treatments and without maintenance burning, about 25% of the area would build fuel loadings posing risk of uncharacteristic wildfire that could cause high burn severity resulting in accelerated soil erosion and loss of soil productivity and watershed function in the long-term. . Soil disturbance in B and C would be minimal (less than 15 percent and of low magnitude, short-term) and mitigated through implementation of (BMPs). Implementation of alternatives B or C would do a much more effective job of reducing the risk of uncharacteristic wildfire that could result in loss of soil productivity, downstream water quality and watershed function.

4-FRI Forest Plan Amendment Analysis for Soil Productivity and Watershed Function

1. Effects of the Forest Plan Amendment Theme Management in Mexican Spotted Owl Habitat on Soil Productivity and Watershed Function

The proposed amendment for alternatives B, C, and D would result in removal of more trees in 18 MSO PACs since trees up to 16 inches dbh could be removed in these areas. Removal of additional trees would improve vegetative ground cover over the long term by increasing light interception at the forest floor and providing conditions conducive to the establishment of a more vigorous understory of grasses, forbs and shrubs. Increased vegetative ground cover would improve soil stability by reducing soil erosion rates, improve and protect soil productivity and watershed function. Reduced stand densities would also provide for improved protection of treated areas from the effects of high severity fire, further improving overall soil stability and watershed conditions. Reduced evapotranspiration resulting from removal of trees up to 16 inches dbh would likely improve soil moisture status. Treatments in PACS, fore areas and restricted habitat would improve and protect soil productivity, watershed function and water quality meeting the purpose and need of the project. Overall, implementation of these amendmentsand associated treatments in MSO PACs and their associated habitats would improve and protect soil productivity, watershed function, water quality and riparian area function, meeting the purpose and need of the project. Implementation of the amendments would provide greater protection of water quality and riparian are function by reducing the potential for sediment delivery to streamcourses and riparian habitats, improving soil moisture in upland areas, and improving snowpack retention in treated areas.

Proposed population and habitat monitoring would not pose a risk to soil, watershed function, water quality, and riparian are function.

Not implementing the amendments under Alternative A would not protect the soil and watershed from uncharacteristic wildfire that would result in accelerated erosion and sediment transport downstream into connected streamcourses.
Not implementing the amendments could put soil productivity and watershed function including downstream water quality at risk from high severity wildfire and pose risk to the sustainability of PACs, core areas, restricted and threshold habitat.
Identified BMPs (see Appendix D) are expected to protect the soil, water quality, and riparian area function and soils with severe erosion hazard in PACs, restricted and threshold habitat.
Alternative A does not propose forest plan amendments so no effects to soil, water quality or riparian areas would occur, but risks to goshawk habitat would remain as described above.

2. Effects of the Forest Plan Amendment Theme Management of Canopy Cover and Ponderosa Pine with an Open Reference Condition within Goshawk Habitat on the Coconino and Kaibab NF.

   The proposed amendments (CNF #2, KNF #1) for Alternatives B, C and D meet the projects purpose and need for soil and watersheds including water quality and riparian fuunction by improving and protecting soil productivity and watershed function in Goshawk habitat while Alternative A does not.

   Coconino National Forest Plan Amendment 2 would improve soils and watershed conditions on 29,017 acres within the CNF since these treatment areas would be returned to open stand condition representative of historic, or reference condition. The lower stand densities and increased interspaces would provide conditions conducive to the establishment of a more vigorous understory of grasses, forbs and shrubs, thus providing greater soil protection than litter alone. The increased interspaces would likely improve snowpack retention and therefore, soil moisture status. Similar to the effects described in MSO PACs and their associated habitat, treatment towards lower stand densities would improve and provide greater protection of soil productivity, watershed function, water quality and riparian conditions from the adverse effects of high severity wildfire. Implementing the Goshawk amendments would meet the projects purpose and need to improve and protect soil productivity and watershed function and protect water quality and riparian area conditions by reducing the threat to these resources posed by high severity wildfire, including the associated risk of sediment delivery to streamcourses and riparian areas.

   Alternative C (treat 27,675 acres) would treat an additional 38 acres in grasslands compared to Alternatives B and D (treat 27,637). 38 acres would be better improved and protected under Alternative C but is negligible in overall acreage extent.
   Similar to the effects describe under MSP PACS and associated habitat, not implementing the Goshawk amendments would not protect the soil and watershed

from uncharacteristic wildfire that would result in accelerated erosion and sediment transport downstream into connected streamcourses.

Similar to the effects describe under MSO PACS and their associated habitat, not implementing the Goshawk amendments would not protect the soil and watershed resources from uncharacteristic wildfire that would result in accelerated erosion and sediment transport downstream into connected streamcourses.
Proposed population and habitat monitoring would not pose a risk to soil, watershed function or water quality.

Not implementing the Goshawk amendments (Alternative A) could put soil productivity and watershed function including downstream water quality and riparian function at risk from high severity wildfire and pose risk to the sustainability of Goshawk habitat.

Identified BMPs (see Appendix D) are expected to protect the soil and water quality and riparian area conditions and soils with severe erosion hazard in Goshawk habitat.

Alternative A does not propose forest plan amendments so no effects to soil and water would occur but risks to Goshawk habitat would remain as described above.

3. Effects of the Forest Plan Amendment Theme Management of Proposed Garland Prairie RNA on the Kaibab NF (Only)

The proposed amendment (KNF #2) for Alternatives C meets the projects purpose and need to improve and protect soil productivity and watershed function and better restores the ecological qualities of the RNA in the Garland Prairie grassland while Alternatives A, B and D do not.
Mechanical treatment and prescribed burning of the 300 acres of tree encroached grassland would improve and protect the soil productivity and watershed function. Treatment would reduce the tree overstory and fuel load resulting in the improvement of the herbaceous understory productivity and vegetative ground cover and reduce the risk of uncharacteristic wildfire that could result in moderate and high burn severity, accelerated erosion and loss of soil productivity.

4. Effects of the Forest Plan Amendment Theme Effect Determination for Cultural Resources on the Coconino NF (Only)

The proposed amendment (CNF #3) would meet the project purpose and need in identified cultural resource areas by improving and protecting soil productivity, watershed function including downstream water quality for Alternatives B,C, and D. Allowing mechanical and prescribed fire treatments with resource protection measures (see Appendix D) for both cultural and soil and water resources reduce the adverse threat of high burn severity associated with wildfire and improve and protect the soil from accelerated erosion and sediment delivery into connected waters downstream.

Not implementing the amendment (Alternative A) would put soil productivity, watershed function including downstream water quality at risk from moderate and high severity wildfire in identified areas of cultural resources.

Summary of Effects

Implementation of Alternative A would not meet the projects purpose and need to improve and protect soil condition, productivity and watershed function nor move towards the desired condition of having soils in satisfactory condition and soil productivity maintained and watersheds properly functioning. It would not meet the projects purpose and need nor move towards the desired conditions of a resilient forest by reducing the potential for undesirable fire behavior and its effects and maintaining the mosaic of tree groups and interspaces with frequent, low-severity fire by having a forest structure that does not support wide-spread crown fire. Implementation of Alternative A would not increase forest resiliency to natural disturbances and would not improve or protect soil condition and soil productivity or watershed function as well as all other action alternatives Implementation of Alternative A would put soils and watersheds at risk of continued uncharacteristic wildfires that could result in loss of soil productivity and sediment delivery to connected streamcourses.

Implementation of alternative D only partially meets the projects purpose and need as well as other action alternatives. Implementation of alternatives B and C more fully meet the projects purpose and need and meet the Kaibab and Coconino National Forest forest plan standards and guidelines. Implementation of alternative D would meet the forest plan standards and guidelines but not fully meet the purpose and need of this project.

Overall, implementation of the proposed action is expected to maintain, improve and protect long-term soil productivity and watershed function much better than Alternative A because there will be no improvement in understory response due to thinning and burning activities in the Alternative A. Alternative B does propose thinning and prescribed fire activities that are expected to provide long-term soil improvements on about 588,000 acres, while Alterantive C proposes about 593,000 acres. Alternative D proposed thinning only on about 388,000 acres, and prescribed burning on about 178,000 acres. The thinning and burning will provide improvement to soils by improving understory species composition, but does still maintain high fuel loadings that can have high surface fire effects tht can damage soils. This is expected to occur on about 25% of the mechanical treatment sites, so Alteratnive D has effective soil productivity treatments on about 470,000 (470,165) acres. However, implementation of Alternative C would better restore grasslands than Alternative B and still has about the same amount of soil disturbance treatment area wide and at the 6th HUC watershed level. Implementation of Alternatives B and C would reduce the risks to life, property, soil productivity and water quality from post wildfire storm events (flooding and debris flows) much better than A and D.

Short-term Uses and Long-term Productivity

Overall, ponderosa pine, aspen and grassland restoration along with other proposed treatments including prescribed burning can be expected to increase ecosystem resiliency to uncharacteristic fire and move soils and watersheds towards satisfactory and functional condition in both the short and long-term and maintain, protect or improve long-term soil productivity, water quality and watershed function. Implementation of Alternative A and D would put soil prodcitivity and watershed function most at risk.

Short term (less than 3 years) soil disturbance would be limited to less than 15 percent throughout all 6th HUC watersheds, with the exception of four 6th code watersheds that have a high percentage of baseline disturbance due to urbanization (Upper Oak Creek, Lower Rio, Pumphouse Wash, Sinclair). Pine tree, aspen and grass leaf litter can be expected to build up rapidly (within 2-3 years) following treatments offering suitable and adequate protection of long term soil productivity.

Furthermore, the timing of treatments being spread out over 10-15 years, as well as identified and implemented BMP's are expected to further reduce the risk on accelerated erosion, sediment delivery and nonpoint source pollution to connected streamcourses and maintain water quality in all watersheds for all action alternatives. Identified and implemented BMPs are expected to mitigate possible negative effects to soils.

Unavoidable Adverse Effects

There are no unavoidable adverse effects to soil and water resources that cannot be avoided with implementation of any alternative.

Irreversible and Irretrievable Commitments of Resources

Irreversible and irretrievable commitments: There would be no irreversible or irretrievable impacts to soil and water resources with implementation of the proposed action (alternative B) or alternatives C and D.

Soil disturbance associated with removal of vegetative ground cover from mechanized equipment or an area of high burn severity is minor in extent and will recover in the short term (within 2-3 years) as described in the effects analysis. Soil disturbance associated with compacted soils would be very minor in extent also but may take several years to improve soil properties to allow for improved water infiltration but it is not irreversible.

Monitoring Requirements

The intergovernmental agreement currently in effect between the Arizona Department of Environmental Quality and the USDA Forest Service, Southwestern Region (ADEQ USDA 2008) requires implementation and effectiveness monitoring of Best Management Practices. This project includes soil and water BMP implementation and effectiveness monitoring as required by the MOU with ADEQ. Implementation monitoring determines whether the BMPs are being implemented as intended and is in compliance with forest plan standards and guidelines. BMP effectiveness monitoring determines whether the BMPs are effective at minimizing soil loss, nonpoint source pollution and maintain long-term soil productivity in compliance with forest plan standards. Protocols include BMP monitoring forms and national BMP's Technical Guide (USDA, April, 2012), soil condition assessment (FSH 2509.18) and the Soil Disturbance Field Guide protocol (USDA, 2009).

This project also includes implementation and effectiveness monitoring plan for other resource areas including fire, vegetation, silviculture, botany, noxious weeds and range. Implementation monitoring determines whether the project is being implemented as intended and is in compliance with forest plan standards and guidelines. Effectiveness monitoring determines whether the project is moving towards achieving restoration objectives and compares the monitoring results to this analysis' predicted results.

The effectiveness plan displays the minimum level of monitoring. The plans provide for multiparty monitoring and evaluation to assess in the positive and negative ecological, social, and economic effects of the project. Additional monitoring and research opportunities that could be implemented would be developed outside of this NEPA analysis. The project implementation monitoring plan is located in the DEIS.

Certification

Rory Steinke prepared the report considering the Best Available Science and locally gathered data. Many of the effects of fire on soil and water attributes were attained through research review. Local data used include the use of Terrestrial Ecosystems Survey of the Coconino National Forest (Miller et al. 1995), local Best Management Practice monitoring data (Fleishman 1996 and 2005, Jagow 1994), on-site observations and water quality data from the Arizona Department of Environmental Quality (ADEQ 2008, 2010).

My education includes a Bachelor's of Science degree in Soil Science from University of Wisconsin Stevens Point, Stevens Point, Wisconsin. I am an ARCPACS Certified Professional Soil Scientist since 1994. I have more than 29 years of experience in soil survey, soil conservation, water rights and watershed, riparian and wetland, wildfire assessment and burned area rehabilitation and forest management. This experience includes resource assessment, planning, budgeting, environmental analysis (mainly soil, water, and riparian resources) environmental writing and project implementation.

I have worked with the Natural Resource Conservation Service, BLM, US Peace Corps (developed about 70 agricultural conservation plans in Honduras) and the Forest Service and have collaborated with outside agencies, tribes and environmental groups. More recently I have assisted the USFS International Programs in Morocco as Soil Scientist technical advisor.

Prepared by: /s/ *Rory Steinke* Date: May 8, 2012

Rory Steinke, Watershed Program Manager, Coconino National Forest

Certified Professional Soil Scientist CPSSc Revised 7/18/2012, 11/28/2012, 1/2/2013, 1/8/2013
Reviewed by Dick Fleishman, Assistant Team Leader, 4FRI

Dick Fleishman reviewed the document. His experience includes a Bachelor's degree in Forest Management, and Master's degree in Public Administration and 32 years of experience in the US Forest Service. Since 1994, Dick has been the soil and water specialist for the Long Valley Ranger District, and when the Long Valley Ranger District was combined with the Blue Ridge Ranger District to form the Mogollon Rim Ranger District, Dick assumed the soil and water specialist position for the Mogollon Rim Ranger District. Since 2007, Dick was moved into a zone soil and water specialist position that added the soil and water specialist position for the Flagstaff Ranger District (formerly Peaks and Mormon Lake Ranger Districts) of the Coconino National Forest to the Mogollon Rim district duties. Since 2011, Dick has been the Assistant Team Leader for the Four Forest Restoration Initiative (4FRI).

Prepared by: /s/ *Dick Fleishman* Date: June 17, 2012

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Appendix A. Strata, TES Map Units, Approximate Acreage, Soil Interpretations and Strata-Specific BMP's (all acres approximate)

Table 30. Strata TES Units, Approximate Acreage, Soil Interpretations and Strata-Specific BMP Acres

Stratum	Slope (%)	Total Acres for Strata	Kaibab TESU	Coconino TESU	Climatic Class[6]	PPC[7]	Erosion Hazard	Nat. Regeneration Potent[8]	Timber Harvest Limitation	Strata Specific BMP Mitigation Measure
1	0-5	15,583	6, 9, 11	53	LSC 5 0	Popr/Fear	Slight	NA	NA	2,6,8,24,25,26,28,33, 36,38
					LSC 5 0	Popr/Agsm	Slight	NA	NA	
					LSC 5 0	Popr/Mumo	Slight	NA	NA	
2	0-5	15,923	NA	55	LSC 5 0	Popr/Fear/ Agsm	Slight	NA	NA	2,6,8,24,25,26,28,33, 36,38

[6] Climatic class locates terrestrial ecosystems into one of four major climatic areas including High Sun Mild (HSM), High Sun Cold (HSC), Low Sun Mild (LSM),

and Low Sun Cold (LSC).

[7] Potential Plant Community (PPC) indicates site potential and is classified according to late successional vegetation species that would be expected to occupy the site in absence

of major disturbances. The PPC does not represent desired conditions but serves as a sideboard to identify vegetation composition diversity and vegetation that could potentially

exist.

[8] Refers to the probability of success in the establishment and survival of trees under inherent site conditions.

Stratum	Slope (%)	Total Acres for Strata	Kaibab TESU	Coconino TESU	Climatic Class[6]	PPC[7]	Erosion Hazard	Nat. Regeneration Potent[8]	Timber Harvest Limitation	Strata Specific BMP Mitigation Measure
3	0-15	32,981	513	595	LSC 5 0	Fear/Mumo	Slight	NA	NA	2,6,8,24,25,26,28,33, 36,38
4	15-40	873	440	NA	LSC 5 0	Fear/Mumo	Slight	NA	NA	2,6,8,24,25,26,28,33, 36,38
5	0-15	3,174	NA	640	LSC 6 0	Fear/Bran/ Mumo	Slight	NA	NA	2,6,8,24,25,26,28,33, 36,38
6	0-15	8,969	36, 507	566	HSC 4 0	Chna/Agsm/ Pied	Slight	NA	NA	2,6,8,24,25,26,28,33, 36,38
					HSC 5 -1	Chna2/Fear2/B ogr2	Slight	NA	NA	
					HSC 5 -1	Sihy/Arlo/ Bogr	Slight	NA	NA	
7	0-15	1,478	NA	594	LSC 5 0	Fear/Mumo	Slight	NA	NA	2,6,8,24,25,26,28,33, 36,38
8	0-15	1,111	518, 630	NA	LSC 5 0	Fear/Mumo	Slight	NA	NA	2,6,8,24,25,26,28,33, 36,38
9	0-5	4,389	20	50	LSC 5 0	CARE/ELEO/ Pola/Alge	Slight	NA	NA	2,6,8,11,12,13,14,15, 16,17,18,19,20,22,23
					LSC 5 0	Caaq/Elma3/ Pola/Alge	Slight	NA	NA	

Stratum	Slope (%)	Total Acres for Strata	Kaibab TESU	Coconino TESU	Climatic Class[6]	PPC[7]	Erosion Hazard	Nat. Regeneration Potent[8]	Timber Harvest Limitation	Strata Specific BMP Mitigation Measure
10	0-5	3,128	37	60	LSC 5 0	Popr/CARE/ Fear	Slight	NA	NA	2,6,8,11,12,13,14,15, 16,17,18,19,20,22,23
					LSC 6 0	Poan3/Juma/ Psmeg	Slight	NA	NA	
11	0-15	108,612	265, 519	585	LSC 5 0	Pipo/Quga	Mod	Low	Moderate	2,6,7,8,25,26,28,29,30,33,35,36,38
					LSC 5 0	Pipo/Quga	Slight	Low	Moderate	
12	0-15	28,172	NA	579	LSC 5 0	Pipo/Jude/ Quga	Slight	Low	Moderate	2,6,7,8,25,26,28,29, 30,33,35,36,38
13	0-15	45,109	275, 282, 631	NA	LSC 5 -1	Pipo/Pied/ Quga/Artr	Slight	Low	Mod	2,6,7,8,25,26,28,29, 30,33,35,36,38
					LSC 5 -1	Pipo/Pied/ Quga/Artr	Mod	Low	Slight	
14	0-15	5,925	326, 565	NA	HSC 5 -1	Pipo/Pied/ Quga	Slight	Low	Moderate	2,6,7,8,25,26,28,29, 30,33,35,36,38
				NA	HSC 5 -1	Pipo/Pied/ Quga	Slight	Low	Severe	
15	0-15	10,725	NA	520, 572	LSM 5 -1	Pipo/Pifa/ Jude/Qutu	Slight	Low	Severe	2,6,7,8,25,26,28,29, 30,33,35,36,38
					LSM 5 -1	Pipo/Jude/ Quar/Arpu5	Slight	Low	Severe	
16	15-40	3,002	276	NA	LSC 5 -1	Pipo/Pied/ Quga/Artr	Severe	Low	Severe	2,6,7,8,25,26,28,29, 30,33,35,36,38

Stratum	Slope (%)	Total Acres for Strata	Kaibab TESU	Coconino TESU	Climatic Class[6]	PPC[7]	Erosion Hazard	Nat. Regeneration Potent[8]	Timber Harvest Limitation	Strata Specific BMP Mitigation Measure
17	15-40	1,318	266	NA	LSC 5 0	Pipo/Quga	Severe	Low	Mod	2,6,7,8,25,26,28,29, 30,33,35,36,38
18	15-40	6,518	NA	530	LSM 5 0	Pipo/Jude/ Qutu	Mod	Low	Mod	2,6,7,8,25,26,28,29, 30,33,35,36,38
19	15-40	7,965	406	515	HSC 5 -1	Pipo/Pied/ Quga	Severe	Low	Severe	2,6,7,8,25,26,28,29, 30,33,35,36,38
					HSC 5 -1	Agsm/Chna	Mod	Low	NA	
20	15-40	2,570	407	NA	LSC 5 0	Pipo/Quga	Severe	Mod	Severe	2,6,7,8,25,26,28,29, 30,33,35,36,38
21	15-40	4,543	NA	11, 14, 15, 511, 513	HSC 5 -1	Pipo/Pied/ Jumo/Fapa	Slight	Low	Slight	2,6,7,8,25,26,28,29, 30,33,35,36,38
					HSC 5 -1	Pipo/Pied/ Jumo/Fapa	Slight	Low	Slight	
					HSC 5 -1	Pipo/Pied/ Jumo/Fapa	Mod	Low	Moderate	
					HSC 5 -1	Pipo/Pied/ Jumo/Fapa	Mod	Low	Mod	
22	15-40	3,124	NA	527	HSC 5 -1	Pipo/Pied/ Jude/Comes	Mod	Low	Mod	2,6,7,8,25,26,28,29, 30,33,35,36,38
23	0-15	224,033	290, 293,401, 537	557, 582, 586	LSC 5 0	Pipo/Quga	Slight	High	Mod	2,6,7,8,25,26,28,29, 30,33,35,36,38
					LSC 5 0	Pipo/Quga	Slight	Mod	Mod	
					LSC 5 0	Pipo/Quga	Slight	High	Mod	
					LSC 5 0	Pipo/Quga	Slight	Mod	Mod	
					LSC 5 0	Pipo/Quga	Slight	High	Mod	
					LSC 5 0	Pipo/Quga	Slight	High	Mod	

Stratum	Slope (%)	Total Acres for Strata	Kaibab TESU	Coconino TESU	Climatic Class[6]	PPC[7]	Erosion Hazard	Nat. Regeneration Potent[8]	Timber Harvest Limitation	Strata Specific BMP Mitigation Measure
24	0-15	10,754	NA	546	LSC 5 0	Pipo/Quga/ Muvi	Slight	High	Severe	2,6,7,8,25,26,28,29, 30,33,35,36,38
25	0-15	18,605	NA	567, 578	LSC 5 0	Pipo/Jude/ Quga	Slight	Mod	Severe	2,6,7,8,25,26,28,29, 30,33,35,36,38
					LSC 5 0	Pipo/Jude/ Quga	Slight	Mod	Severe	
26	0-5	6,066	10	NA	LSC 5 0	Pipo/Quga	Slight	Mod	Moderate	2,6,7,8,25,26,28,29, 30,33,35,36,38
27	0-15	134,137	304, 324, 401a, 537a	536, 551, 557a[9], 570, 582a	LSC 5 0	Pipo/Fear	Slight	Mod	Mod	2,6,7,8,25,26,28,29, 30,33,35,36,38
					LSC 5 0	Pipo/Fear	Slight	Mod	Mod	
					LSC 5 0	Pipo/Fear	Slight	High	Mod	
					LSC 5 0	Pipo/Fear	Slight	High	Severe	
28	0-15	6,679	NA	560	LSC 5 0	Pipo/Fear	Slight	Mod	Slight	2,6,7,8,25,26,28,29, 30,33,35,36,38
29	0-15	9,552	325	NA	LSC 5 0	Pipo/Fear	Slight	Mod	Mod	2,6,7,8,25,26,28,29, 30,33,35,36,38
30	0-15	13,991	NA	558, 559	LSC 5 0	Pipo/Fapa	Slight	Low	Slight	2,6,7,8,25,26,28,29, 30,33,35,36,38
31	15-40	5,605	NA	561	LSC 5 0	Pipo/Fapa	Mod	Low	Mod	27, 2,6,7,8,25,26,28,29, 30,33,35,36,38
32	15-40	66,606	294,402,	**549**, 550,	LSC 5 0	Pipo/Quga	Severe	Mod	Mod	2,6,7,8,25,26,28,29,

[9] Coconino TESU acres not accounted for in total for strata.

Stratum	Slope (%)	Total Acres for Strata	Kaibab TESU	Coconino TESU	Climatic Class[6]	PPC[7]	Erosion Hazard	Nat. Regeneration Potent[8]	Timber Harvest Limitation	Strata Specific BMP Mitigation Measure
			525	565, 584						30,33,35,36,38
					LSC 5 0	Pipo/Quga	Severe	Mod	Severe	
					LSC 5 0	Pipo/Quga	Severe	Low	Mod	
					LSC 5 0	Pipo/Quga/ Muvi2	Mod	High	Moderate	
					LSC 5 0	Pipo/Quga	Mod	High	Mod	
					LSC 5 0	Pipo/Quga	Severe	High	Severe	
33	15-40	6,041	291, 310	NA	LSC 5 0	Pipo/Quga	Mod	Mod	Mod	2,6,7,8,25,26,28,29, 30,33,35,36,38
					LSC 5 0	Pipo/Quga	Mod	Low	Mod	
34	15-40	2,740	300	NA	LSC 5 0	Pipo/Quga	Mod	Low	Mod	2,6,7,8,25,26,28,29, 30,33,35,36,38
35	15-40	8,462	NA	553, 565a, 584a	LSC 5 0	Pipo/Fear	Slight	Low	Mod	2,6,7,8,25,26,28,29, 30,33,35,36,38
					LSC 5 0	Pipo/Fear	Severe	High	Severe	
36	15-40	11,614	300a, 310a	537	LSC 5 0	Pipo/Fear	Mod	Low	Severe	2,6,7,8,25,26,28,29, 30,33,35,36,38
					LSC 5 0	Pipo/Fear	Mod	Low	Mod	
					LSC 5 0	Pipo/Fear	Mod	Low	Mod	
37	0-15	19,347	283, 297	NA	LSC 5 -1	Pipo/Pied/ Quga/Artr	Slight	Low	Mod	2,6,7,8,25,26,28,29, 30,33,35,36,38
					LSC 5 -1	Pipo/Pied/ Quga/Artr	Slight	Low	Mod	
38	15-40	1,704	284	NA	LSC 5 -1	Pipo/Pied/ Quga/Artr	Severe	Low	Mod	2,6,7,8,25,26,28,29, 30,33,35,36,38
39	0-15	76,403	305,	500, 505,	HSC 5 -1	Pipo/Pied/	Slight	Low	Mod	2,6,7,8,25,26,28,29,

Stratum	Slope (%)	Total Acres for Strata	Kaibab TESU	Coconino TESU	Climatic Class[6]	PPC[7]	Erosion Hazard	Nat. Regeneration Potent[8]	Timber Harvest Limitation	Strata Specific BMP Mitigation Measure
			405, 563, **649**	506, 517, 523		Quga				30,33,35,36,38
					HSC 5 -1	Pipo/Pied/ Quga	Slight	Low	Mod	
					HSC 5 -1	Pipo/Pied/ Jude/Quga	Slight	Low	Severe	
					HSC 5 -1	Pipo/Pied/ Jumo/Quga	Slight	Low	Mod	
					HSC 5 -1	Pipo/Pied/ Jude/Quga	Slight	Low	Mod	
					HSC 5 -1	Pipo/Pied/ Jumo/Quga	Slight	Low	Severe	
					HSC 5 -1	Pipo/Pied/ Quga	Slight	Low	Mod	
					HSC 5 -1	Pipo/Pied/ Quga	Mod	Low	Moderate	
40	0-15	14,477	NA	510	HSC 5 -1	Pipo/Pied/ Jumo/Fapa	Slight	Low	Slight	2,6,7,8,25,26,28,29, 30,33,35,36,38
			NA	512	HSC 5 -1	Pipo/Pied/ Jumo/Fapa	Slight	Low	Slight	
41	15-40	10,422	311, 564	524	HSC 5 -1	Pipo/Pied/ Quga	Severe	Low	Severe	2,6,7,8,25,26,28,29, 30,33,35,36,38
					HSC 5 -1	Pipo/Pied/ Jumo/Quga	Severe	Low	Severe	
					HSC 5 -1	Pipo/Pied/ Quga	Severe	Low	Severe	
42	40-120	13,457	320, 539, 681	562, 575, 596	LSC 5 0	Pipos	Severe	Low	Severe	Steep slopes limit mechanical harvesting (severe limitation). Soils
					LSC 5 0	Pipo/Quga	Severe	Low	Severe	
					LSC 5 0	Pipos	Severe	Low	Severe	

Stratum	Slope (%)	Total Acres for Strata	Kaibab TESU	Coconino TESU	Climatic Class[6]	PPC[7]	Erosion Hazard	Nat. Regeneration Potent[8]	Timber Harvest Limitation	Strata Specific BMP Mitigation Measure
					LSC 5 0	Pipos	Severe	Mod	Severe	have severe erosion hazard and accelerated erosion would occur upon soil disturbance. Handcrews/ (chainsaw or heli-logging may be appropriate to not cause soil disturbance.
					LSC 5 0	Pipos	Severe	Low	Severe	
					LSC 5 0	Pipos	Severe	Mod	Severe	
43	40-120	2,216	431, 648	NA	HSC 5 -1	Pipo/Pied/ Quga	Severe	Low	Severe	Same as strata 42
					HSC 5 -1	Pipo/Pied/ Quga	Severe	Low	Severe	
44	40-120	18,742	NA	555, 620	LSC 6	Psmeg	Severe	Low	Severe	Same as 42.
					LSC 6 -1	Psmeg/Pipo Jude/Qutu	Severe	Low	Severe	
45	40-120	1,552	660	NA	LSC 5	Quga/Rone	Severe	NA	Severe	Same as 42.
46	0 – 15	UNK	260, 495, 514, 543, 586, 587, 599	426, 433, 438, 440, 443, 444, 445, 453, 465, 473, 490, 492, 495	LSC 4 +1	Pied/Quga/ Artr/Stco	Mod	Low[10]	NA	2,6,8,24,26,33,36,38, 39

[10] Unlike the Pipo and mixed conifer ecosystems Natural Regeneration Potential **does not mean** probability of success in the establishment and survival of trees but probable success and ease in establishment of native grasses.

Stratum	Slope (%)	Total Acres for Strata	Kaibab TESU	Coconino TESU	Climatic Class[6]	PPC[7]	Erosion Hazard	Nat. Regeneration Potent[8]	Timber Harvest Limitation	Strata Specific BMP Mitigation Measure
					HSC 4 0	Pied/Jumo/ Fapa	Slight	Low	NA	
					HSC 4 0	Pied/Jumo	Slight	Low	NA	
					HSC 4 0	Pied/Jude/ Jumo/Bogr	Slight	Low	NA	
					HSC 4 0	Pied/Jumo/ Bogr	Slight	Low	NA	
					HSC 4 0	Pied/Jumo/ Bogr/Stco	Slight	Low	NA	
					HSC 4 0	Bogr/Stco	Slight	High	NA	
					HSC 4 0	Pied/Jumo/ Bogr	Slight	High	NA	
					HSC 4 0	Agsm/Bogr	Mod	Low	NA	
					HSC 4 0	Pied/Jumo/ Bogr	Slight	Low	NA	
					HSC 4 +1	Pied/Jumo/ Bogr	Slight	High	NA	
					HSC 4 +1	Pied/Jude/ Jumo/Quga	Slight	High	NA	
					LSM 4 +1	Pifa/Jude/ Qutu/Bogr	Mod	Low	NA	
					LSM 4+1	Pifa/Jude/ Qutu/Bogr	Slight	Low	NA	
					HSC 4 0	Pied/Jumo	Slight	Mod	NA	
					HSC 4 0	Pied/Jumo	Slight	Low	NA	
47	15 to 120		261, 274, 476, 496, 523, 541, 589	427, 430, 439, 441, 449, 450, 455, 470, 471, 493	LSC 4 +1	Pied/Quga/ Artr/Stco	Severe	Low	NA	Steep slopes (greater than 40%) limit mechanical harvesting (severe limitation). Soils have severe erosion hazard and
					LSC 4 0	Pied/Juos/	Severe	Low	NA	

Stratum	Slope (%)	Total Acres for Strata	Kaibab TESU	Coconino TESU	Climatic Class[6]	PPC[7]	Erosion Hazard	Nat. Regeneration Potent[8]	Timber Harvest Limitation	Strata Specific BMP Mitigation Measure
						Artr/Stco				accelerated erosion would occur upon soil disturbance. Slopes less than about 40% in pinyon-juniper woodlands, use BMP's listed in strata 46.
					HSC 4 0	Pied/Jumo/ Fapa	Mod	Low	NA	
					LSM 4 0	Juos	Mod	Low	NA	
					HSC 4 0	Pied/Juos/ Jumo/Bogr	Mod	Low	NA	
					HSC 4 0	Pied/Jude/ Jumo/Fapa	Mod	Low	NA	
					HSC 4 0	Jumo	Severe	Low	NA	
					HSC 4 0	Jumo	Mod	Low	NA	
					HSC 4 0	Pied/Jumo/ Come/Stco	Severe	Low	NA	
					LSM 4 0	Qutu/Cemo	Severe	Low	NA	
					LSM 4 0	Qutu/Arpu/ Cemo	Severe	Low	NA	
					HSC 4 0	Pied/Jumo	Severe	Low	NA	
					LSM 4 +1	Pifa/Jude/ Qutu/Bogr	Mod	Low	NA	
					HSC 4 0	Pied/Jumo	Mod	Mod	NA	
					LSM 4 +1	Pied/Jude/ Qutu/ Arpu	Severe	Low	NA	
					LSM 4 +1	Pied/Jude/ Qutu/ Arpu	Severe	Low	NA	
					HSC 4 0	Pied/Jumo	Mod	Low	NA	
48	0 to 80		302, 312, 322	614, 651, 653, 654	LSC 6 0	Abco/Psmeg/ Pipo/Quga	Severe	Mod	Moderate	Steep slopes (greater than 40%) limit mechanical harvesting (severe limitation). Soils have severe erosion hazard and accelerated erosion
					LSC 6 0	Psmeg	Severe	Low	Severe	
					LSC 6 0	Abco/Psmeg/ Pipo/Quga	Severe	High	Severe	
					LSC 6 0	Abco/Psmeg/ Pipo/Quga	Severe	High	Severe	
					LSC 6 0	Abco/Psmeg/	Mod	High	Moderate	

Stratum	Slope (%)	Total Acres for Strata	Kaibab TESU	Coconino TESU	Climatic Class[6]	PPC[7]	Erosion Hazard	Nat. Regeneration Potent[8]	Timber Harvest Limitation	Strata Specific BMP Mitigation Measure
						Pipo/Quga				would occur upon soil disturbance.
					LSC 6 0	Abco/Psmeg/ Pipo/Quga	Mod	Low	Mod	
										Slopes less than about 40% in, use BMP's listed in strata 11 except coarse woody material TBD.
49	40 to 120		540, 625	612, 612	LSC 5 -1	Psmeg/Pipo/ Jude/Qutu	Severe	Low	Severe	Steep slopes (greater than 40%) limit mechanical harvesting (severe limitation). Soils have severe erosion hazard and accelerated erosion would occur upon soil disturbance.
					LSC 6 0	Psmeg	Severe	Mod	Severe	
					LSC 6 0	Psmeg	Severe	Low	Severe	
					LSC 6 0	Psmeg	Severe	Low	Severe	
50	0 - 15			610, 611	LSC 6 -1	Potr/Psmeg/ Pipo	Mod	High	Moderate	2,6,7,8,25,26,28,29, 30,33,35,36,38

Other required BMP's listed in the Resource Protection Measures will apply depending on the activity.

Appendix B. Taxonomic Classifications and Potential Plant Community by Strata and TES Map Unit and Soil Condition within the Four-Forest Initiative Proposed Action

Table 31. Proposed Action Taxonomic Classifications and Potential Plant Community by Strata and TES Map Units

Stratum Number	Slope (%)	Final Strata Comb	Taxonomic Classification	Climatic Class	PPC	Soil Condition	Acres of Unsatisfactory Soil Condition
1	0-5	6[11]	Pachic Argiborolls, fine, montmorillonitic	LSC 5 0	Popr/Fear	Sat	-0-
		9[12]	Cumulic Haploborolls, fine-loamy, mixed Cumulic Haploborolls, loamy-skeletal, mixed	LSC 5 0	Popr/AgsmPopr/Agsm	Sat	-0-
		11[13]	Cumulic Haploborolls, fine-loamy, mixed	LSC 5 0	Popr/ Mumo	Sat	-0-
		53[14]	Cumulic Haploborolls, fine-loamy, mixed	LSC 5 0	Popr/Fear	Impaired	-0-
2	0-5	55[15]	Pachic Argiborolls, fine, montmorillonitic Vertic Argiustolls, fine, montmorillonitic	LSC 5 0	Popr/FearAgsm	Impaired	-0- 3,185
3	0-15	513[16]	Typic Argiborolls, clayey-skeletal, mont. Pachic Argiborolls, fine, montmorillonitic	LSC 5 0	Fear/Mumo Fear/Mumo	Sat	-0-
		595[17]	Pachic Argiborolls, fine, montmorillonitic	LSC 5 0	Fear/Mumo	Sat	-0-

[11] Kaibab TESU, no TESU 6 on Coconino

[12] Kaibab TESU no TESU 9 within Coconino

[13] Kaibab TESU Coconino TESU 11 in Strata 21

[14] Coconino TESU no TESU 53 within Kaibab

[15] Coconino TESU no TESU 55 within Kaibab

[16] Kaibab TESU, Coconino 513 in Strata 21

Stratum Number	Slope (%)	Final Strata Comb	Taxonomic Classification	Climatic Class	PPC	Soil Condition	Acres of Unsatisfactory Soil Condition
4	15-40	440[18]	Mollic Vitrandepts, cindery, frigid	LSC 5 0	Fear/Mumo	Unsat.	873
5	0-15	640[19]	Pachic Udic Argiborolls, loamy-skeletal, mixed	LSC 6 0 LSC 6 0	Fear/Bran/Mumo	Sat	-0-
6	0-15	**36[20]**	**Pachic Argiustolls, fine, mixed, mesic**	**HSC 4-0**	**Chna/ Agsm/Pied**	**Sat**	**-0-**
		507[21]	Vertic Argiborolls, fine, mont.Vertic Argiborolls, clayey-skeletal, mont.	HSC 5 - 1	Chan/Fear/Bogr	Sat	-0-
		566[22]	Typic Haplborolls, fine-loamy, mixed	HSC 5 - 1	Sihy/Arlo/Bogr	Impaired	-0-
7	0-15	594[23]	Vitrandic Haploborolls, ash-skeletal over cindery	LSC 5 0	Fear/Mumo	Sat	-0-
8	0-15	630[24]	Lithic Eutroboralfs, clayey-skeletal, mont.	LSC 5 0	Fear/MumoF	Sat	-0-

[17] Coconino TESU, no TESU 595 within Kaibab

[18] Kaibab TESU, Coconino NF TESU 440 in Strata 46

[19]Coconino TESU no TESU 640 within Kaibab

[20] Kaibab TESU, no TESU 36 on Coconino

[21] Kaibab TESU no TESU 507 on Coconino

[22]Coconino TESU no TESU 566 within Kaibab

[23]Coconino TESU no TESU 594 within Kaibab

[24]Kaibab TESU no TESU 630 within Coconino

Stratum Number	Slope (%)	Final Strata Comb	Taxonomic Classification	Climatic Class	PPC	Soil Condition	Acres of Unsatisfactory Soil Condition
			Mollic Eutroboralfs, clayey-Skeletal, mont.		ear/Mumo		
9	0-5	20[25]	Vertic Haplaqualls, very fine, mont, frigid	LSC 5 0	CARE/ELEO /Pola/ Alge	Impaired	-0-
		50[26]	Vertic Haplaqualls, very fine, mont, frigid	LSC 5 0	Caaq/Elma/Pola/Alge	Unsat	-0-
10	0-5	37[27]	Aquic Haploborolls, loamy-skeletal, mixed	LSC 5 0	Popr/CARE/Fear	Sat	-0-
		60[28]	**Fluventic Haploborolls, sandy-skeletal, mixed**	**LSC 6-0**	**Poan3/ Juma/ Psmeg**	**Sat**	**0**
11	0-15	265[29]	Lithic Eutroboralfs, loamy-skeletal, mixed	LSC 5 0	Pipo/Quga	Sat	-0-
		519[30]	Lithic Eutroboralfs, clayey-skeletal, mont. Lithic Argiborolls, fine, montmorillonitic	LSC 5 0	Pipo/Quga	Sat	-0-
		585[31]	Lithic Eutroboralfs, clayey-skeletal, mont. Mollic Eutroboralfs, fine, montmorillonitic	LSC 5 0	Pipo/Quga	Sat	-0-

[25]Kaibab TESU no TESU 20 within Coconino

[26]Coconino TESU no TESU 50 within Kaibab

[27]Kaibab TESU no TESU 37 within Coconino

[28] Coconino TESU no TESU 60 on Kaibab

[29] Kaibab TESU no TESU 265 within Coconino

[30] Kaibab TESU no TESU 519 within Coconino

[31] Coconino TESU no TESU 585 within Kaibab

Stratum Number	Slope (%)	Final Strata Comb	Taxonomic Classification	Climatic Class	PPC	Soil Condition	Acres of Unsatisfactory Soil Condition
		631	Lithic Eutroboralfs, clayey-skeletal, mont. Typic Eutroboralfs, c-sk, montmorillonitic	LSC 5 0	Pipo/Quga	Sat	-0-
12	0-15	579[32]	Lithic Eutroboralfs, clayey-skeletal, mont. Mollic Eutroboralfs, fine, montmorillonitic	LSC 5 0	Pipo/Jude/Quga	Sat	-0-
13	0-15	275[33],	Lithic Ustochrepts, loamy-skeletal, mixed	LSC 5 - 1	Pipo/Pied/Quga/Artr	Sat.	-0-
		282[34]	Typic Eutroboralfs, fine-loamy, mixed	LSC 5 - 1	Pipo/Pied/Quga/Artr	Sat	-0-
14	0-15	326[35]	Udic Ustochrepts, Loamy-skeletal, mixed, frigid	HSC 5 - 1	Pipo/Pied/Quga	Sat	-0-
		565[36]	Lithic Argiborolls, clayey-skeletal, mont. Lithic Argiborolls, fine, mont.	HSC 5 - 1	Pipo/Pied/Quga	Sat.	-0-
15	0-15	520[37]	Udic Haplustalfs, fine, mont., mesic Lithic Haplustalfs, clayey-skeletal, mont., mesic	LSM 5 - 1	Pipo/Pifa/ Jude/Qutu	Sat.	-0-

[32] Coconino TESU no TESU 579 within Kaibab

[33] Kaibab TESU no TESU 275 within Coconino

[34] Kaibab TESU no TESU 282 within Coconino

[35] Kaibab TESU no TESU 324 on Coconino

[36] Kaibab TESU, TESU 565 within Coconino found in Strata 32

[37] Coconino TESU no TESU 520 within Kaibab

Stratum Number	Slope (%)	Final Strata Comb	Taxonomic Classification	Climatic Class	PPC	Soil Condition	Acres of Unsatisfactory Soil Condition
		572[38]	Udic Haplustalfs, fine, mont.	LSM 5 - 1	Pipo/Jude2/ Quar/Arpu5	Sat.	-0-
16	15-40	276[39]	Lithic Haploborolls, Loamy-skeletal, mixed, frigid Rock Outcrop	LSC 5 - 1	Pipo/Pied/ Quga/Artr	Unsat.	3,002
17	15-40	266[40]	Lithic Eutroboralfs, loamy-skeletal, mixed Rock Outcrop	LSC 5 0	Pipo/Quga	Unsat.	1,318
18	15-40	530[41]	Udic Haplustalfs, clayey-skeletal, mont., mesic Lithic Haplustalfs, clayey-skeletal, mont., mesic	LSM 5 0	Pipo/Jude/ Qutu	Sat Unsat	-0- 2,610
19	15-40	406[42]	Mollic Eutroboralfs, fine, montmorillonitic Lithic Eutroboralfs, clayey-skeletal, mont	HSC 5 - 1	Pipo/Pied/ Quga	Unsat.	7,965
	0-15	515[43]	Vertic Argiborolls, fine, mont.	HSC 5 - 1	Agsm/Chna	Impaired.	

[38] Coconino TESU, no TESU 572 on Kaibab

[39] Kaibab TESU no TESU 276 within Coconino

[40] Kaibab TESU no TESU 266 within Coconino

[41] Coconino TESU no TESU 530 within Kaibab

[42] Kaibab TESU no TESU 406 within Coconino

[43] Coconino TESU, no TESU 515 on Kaibab, note this unit is 0 - 15% whereas 406 is 15 – 40%

Stratum Number	Slope (%)	Final Strata Comb	Taxonomic Classification	Climatic Class	PPC	Soil Condition	Acres of Unsatisfactory Soil Condition
20	15-40	407[44]	Typic Vitrandepts, cindery, frigid Lithic Vitrandepts, cindery, frigid	LSC 5-0	Pipo/Quga	Unsat. Unsat.	2,570
21	0 - 40	11[45]	Lava Flows Typic Ustorthents, cindery, frigid	HSC 5 - 1	Pipo/Pied/ Jumo/Fapa	NA Sat.	NA -0-
		14[46]	Cinder Land Typic Ustorthents, cindery, frigid	HSC 5 - 1	Pipo/Pied/ Jumo/Fapa	NA Sat.	NA -0-
		15[47]	Cinder Land Typic Ustorthents, cindery, frigid	HSC 5 - 1	Pipo/Pied/ Jumo/Fapa	NA Sat.	NA -0-
		511[48]	Typic Ustorthents, cindery, frigid	HSC 5 - 1	Pipo/Pied/ Jumo/Fapa	Sat.	-0-
		513[49]	Typic Ustochrepts, cindery, frigid	HSC 5 - 1	Pipo/Pied/ Jumo/Fapa	Unsat.	4,543
22	15-40	527[50]	Lithic Haploborolls, loamy-skeletal, mixed Typic Haploborolls, loamy-skeletal, mixed	HSC 5 - 1	Pipo/Pied/ Jude/Come	Sat	-0-

[44] Kaibab TESU no TESU 407 within Coconino

[45] Coconino TESU, TESU 11 on Kaibab within Strata 1

[46] Coconino TESU, no TESU 14 on Kaibab

[47] Coconino TESU, TESU 15 on Kaibab mapped in Kanab Creek on NKRD which is outside of project area.

[48] Coconino TESU, no TESU 511 on Kaibab

[49] Coconino TESU, TESU 513 on Kaibab located in Strata 2

[50] Coconino TESU, no TESU 527 on Kaibab

Stratum Number	Slope (%)	Final Strata Comb	Taxonomic Classification	Climatic Class	PPC	Soil Condition	Acres of Unsatisfactory Soil Condition
23	0-15	290[51]	Typic Eutroboralfs, fine, montmorillonitic Typic Eutroboralfs, clayey-skeletal, mont	LSC 5 0	Pipo/Quga	Sat	-0-
		293[52]	Mollic Eutroboralfs, clayey-skeletal, mont Mollic Eutroboralfs, fine, montmorillonitic	LSC 5 0	Pipo/Quga	Sat	-0-
		401[53]	Mollic Eutroboralfs, fine, montmorillonitic	LSC 5 0	Pipo/Quga	Sat	-0-
		537[54]	Mollic Eutroboralfs, clayey-skeletal, mont Typic Argiborolls, fine, montmorillonitic.	LSC 5 0	Pipo/Quga	Sat	-0-
		557[55]	Mollic Eutroboralfs, clayey-skeletal, mont.	LSC 5 0	Pipo/Quga	Sat	-0-
		582[56]	Typic Argiborolls, fine, mont Mollic Eutroboralfs, c-sk, montmorillonitic	LSC 5 0	Pipo/Quga	Sat	-0-
		586[57]	Mollic Eutroboralfs, fine, montmorillonitic Mollic Eutroboralfs, c-sk, montmorillonitic	LSC 5 0	Pipo/Quga	Sat	-0-
24	0-15	546[58]	Typic Eutroboralfs, fine, montmorillonitic	LSC 5 0	Pipo/Quga/ Muvi	Sat	-0-
25	0-15	567[59]	Typic Eutroboralfs, fine, montmorillonitic	LSC 5 0	Pipo/Jude/	Sat	-0-

[51] Kaibab TESU, no TESU 290 on Coconino

[52] Kaibab TESU, no TESU 293 on Coconino

[53] Kaibab TESU, Coconino 401 TESU found in LSM -1 (Redberry Juniper PPC)

[54] Kaibab TESU, Coconino 537 found in Strata 36

[55] Coconino TESU, no TESU 557 on Kaibab

[56] Coconino TESU, no TESU 582 on Kaibab

[57] Coconino TESU, TESU 586 on Kaibab found in Strata 46

[58] Coconino TESU, no TESU 546 on Kaibab

Stratum Number	Slope (%)	Final Strata Comb	Taxonomic Classification	Climatic Class	PPC	Soil Condition	Acres of Unsatisfactory Soil Condition
			Mollic Eutroboralfs, fine, montmorillonitic		Quga		
		578[60]	Mollic Eutroboralfs, fine, montmorillonitic Typic Argiborolls, fine, montmorillonitic	LSC 5 0	Pipo/Jude/ Quga	Sat	-0-
26	0-5	10[61]	Typic Argiborolls, fine, montmorillonitic	LSC 5 0	Pipo/Quga	Sat	-0-
27	0-15	304[62]	Typic Eutroboralfs, c-sk, montmorillonitic	LSC 5 0	Pipo/Fear	Sat	-0-
		324[63]	Typic Eutroboralfs, c-sk, montmorillonitic Typic Eutroboralfs, fine, montmorillonitic	LSC 5 0	Pipo/Fear	Sat	-0-
		401a[64]	Mollic Eutroboralfs, fine, montmorillonitic	LSC 5 0	Pipo/Fear	Sat	-0-
		536[65]	Mollic Eutroboralfs, fine, montmorillonitic Typic Eutroboralfs, fine, montmorillonitic	LSC 5 0	Pipo/Fear	Sat	-0-
		537a[66]	Mollic Eutroboralfs, clayey-skeletal, mont Typic Argiborolls, fine, montmorillonitic.	LSC 5 0	Pipo/Fear	Sat	-0-

[59] Coconino TESU, no TESU 567 on Kaibab

[60] Coconino TESU, no TESU 578 on Kaibab

[61] Kaibab TESU, no TESU 10 on Coconino

[62] Kaibab TESU, no TESU 304 on Coconino

[63] Kaibab TESU, no TESU 324 on Coconino

[64] Kaibab TESU, Coconino 401 TESU found in LSM -1 (Redberry Juniper PPC)

[65] Coconino TESU, no TESU 536 on Kaibab

[66] Kaibab TESU, no 537a TESU on Coconino

Stratum Number	Slope (%)	Final Strata Comb	Taxonomic Classification	Climatic Class	PPC	Soil Condition	Acres of Unsatisfactory Soil Condition
		551[67]	Mollic Eutroboralfs, loamy-skeletal, mixed	LSC 5 0	Pipo/Fear	Sat	-0-
		557a[68]	Mollic Eutroboralfs, fine, montmorillonitic	LSC 5 0	Pipo/Quga	Sat	-0-
		570[69]	Typic Eutroboralfs, fine, montmorillonitic Typic Eutroboralfs, c-sk, montmorillonitic	LSC 5 0	Pipo/Fear	Sat	-0-
		582a[70]	Typic Argiborolls, fine, montmorillonitic Mollic Eutroboralfs, c-sk, montmorillonitic	LSC 5 0	Pipo/Fear	Sat	-0-
28	0-15	560[71]	Vitrandic Ustochrepts, ashy-skeletal over cindery, frigid	LSC 5 0	Pipo/Fear	Sat	-0-
29	0-15	325[72]	Udic Ustochrepts, loamy-skeletal, mixed	LSC 5 0	Pipo/Fear[73]	Sat	-0-
30	0-15	558[74]	Vitrandic Ustochrepts, ashy-skeletal, frigid	LSC 5 0	Pipo/Fapa	Sat	-0-
		559[75]	Vitrandic Ustorthents, cindery, frigid	LSC 5 0	Pipo/Fapa	Sat	-0-

[67] Coconino TESU, no TESU 551 on Kaibab

[68] Coconino TESU, no TESU 557 on Kaibab

[69] Coconino TESU, no TESU 570 on Kaibab

[70] Coconino TESU, no TESU 582a on Kaibab

[71] Coconino TESU, no TESU 560 on Kaibab

[72] Kaibab TESU, no TESU 325 on Coconino

[73] Mapped Pipo/Quga in Kaibab TES

[74] Coconino TESU, no TESU 558 on Kaibab

[75] Coconino TESU, no TESU 559 on Kaibab

Stratum Number	Slope (%)	Final Strata Comb	Taxonomic Classification	Climatic Class	PPC	Soil Condition	Acres of Unsatisfactory Soil Condition
31	15-40	561[76]	Typic Ustorthents, cindery, frigid	LSC 5 0	Pipo/Fapa	Sat	-0-
32	15-40	294[77]	Mollic Eutroboralfs, clayey-skeletal, mont Mollic Eutroboralfs, fine, montmorillonitic	LSC 5 0	Pipo/Quga	Sat	-0-
		402[78]	Mollic Eutroboralfs, fine, mixed Lithic Eutroboralfs, c-sk, mixed	LSC 5 0	Pipo/Quga	Sat Unsat.	-0- 2,850
		525[79]	Typic Argiborolls, c-sk, mont. Typic Argiborolls, fine, mont.	LSC 5 0	Pipo/Quga	Unsat	13,447
		549[80]	Glossic Eutroboralfs, fine, montmorillonitic Typic Paleboralfs, fine, montmorillonitic	LSC 5 0	Pipo/Quga/Muvi2	Sat. Sat	-0- -0-
		565[81]	Mollic Eutroboralfs, clayey-skeletal, mixed	LSC 5 0	Pipo/Quga	Sat	-0-
		584[82]	Mollic Eutroboralfs, clayey-skeletal, mont. Typic Argiborolls, fine, montmorillonitic	LSC 5 0	Pipo/Quga	Sat	-0-
33	15-40	291[83]	Typic Eutroboralfs, clayey-skeletal, mixed	LSC 5 0	Pipo/Quga	Unsat	2,958

[76] Coconino TESU, no TESU 561 on Kaibab

[77] Kaibab TESU, no 294 TESU on Coconino

[78] Kaibab TESU, TESU 402 on Coconino found in LSM -1 (Utah Juniper PPC)

[79] Kaibab TESU, no TESU 525 on Coconino

[80] Coconino TESU,. No TESU 549 on Kaibab

[81] Coconino TESU, TESU 565 on Kaibab found in Strata 14

[82] Coconino TESU, no TESU 584 on Kaibab

[83] Kaibab TESU, no 291 TESU on Coconino

Stratum Number	Slope (%)	Final Strata Comb	Taxonomic Classification	Climatic Class	PPC	Soil Condition	Acres of Unsatisfactory Soil Condition
			Typic Eutroboralfs, loamy-skeletal, mixed				
		310[84]	Typic Eutroboralfs, clayey-skeletal, mixed	LSC 5 0	Pipo/Quga	Sat	-0-
34	15-40	300[85]	Udic Ustochrepts, loamy-skeletal, mixed, frigid	LSC 5 0	Pipo/Quga	Sat	-0-
35	15-40	553[86]	Typic Argiborolls, loamy-skeletal, mixed	LSC 5 0	Pipo/Fear	Sat	-0-
		565a[87]	Mollic Eutroboralfs, clayey-skeletal, mixed	LSC 5 0	Pipo/Fear	Sat	-0-
		584a[88]	Mollic Eutroboralfs, clayey-skeletal, mont. Typic Argiborolls, fine, montmorillonitic	LSC 5 0	Pipo/Fear	Sat	-0-
36	15-40	300a	Udic Ustochrepts, loamy-skeletal, mixed, frigid	LSC 5 0	Pipo/Fear	Sat	-0-
		310a	Typic Eutroboralfs, c-sk, montmorillonitic	LSC 5 0	Pipo/Fear	Sat	-0-
		537[89]	Lithic Argiborolls, loamy-skeletal, mixed Mollic Eutroboralfs, loamy-skeletal, mixed	LSC 5 0	Pipo/Fear	Sat	-0-
37	0-15	283[90]	Typic Eutroboralfs, fine, montmorillonitic	LSC 5 -	Pipo/Pied/	Sat	-0-

[84] Kaibab TESU, no 310 TESU on Coconino

[85] Kaibab TESU, no 300 TESU on Coconino

[86] Coconino TESU, no TESU 563 on Kaibab

[87] Coconino TESU, no TESU 565a on Kaibab

[88] Coconino TESU, no TESU 584 on Kaibab

[89] Coconino TESU, Kaibab 537 found in Strata 23

[90] Kaibab TESU, no 283 TESU on Coconino

Stratum Number	Slope (%)	Final Strata Comb	Taxonomic Classification	Climatic Class	PPC	Soil Condition	Acres of Unsatisfactory Soil Condition
			Typic Eutroboralfs, c-sk, montmorillonitic	1	Quga/Artr		
		297[91]	Mollic Eutroboralfs, fine, montmorillonitic Mollic Eutroboralfs, c-sk, montmorillonitic	LSC 5 - 1	Pipo/Pied/ Quga/Artr	Sat	-0-
38	15-40	284[92]	Typic Eutroboralfs, c-sk, montmorillonitic Typic Eutroboralfs, fine, montmorillonitic	LSC 5 - 1	Pipo/Pied/ Quga/Artr	Unsat	1,704
39	0-15	305[93]	Typic Eutroboralfs, c-sk, montmorillonitic	HSC 5 - 1	Pipo/Pied/ Quga	Sat	-0-
		405[94]	Mollic Eutroboralfs, fine, montmorillonitic	HSC 5 - 1	Pipo/Pied/ Quga	Sat	-0-
		500[95]	Mollic Eutroboralfs, fine, montmorillonitic	HSC 5 - 1	Pipo/Pied/ Jude/Quga	Sat	-0-
		505[96]	Mollic Eutroboralfs, fine, montmorillonitic	HSC 5 - 1	Pipo/Pied/ Jude/Quga	Sat	-0-
		506[97]	Mollic Eutroboralfs, fine-loamy, mixed	HSC 5 - 1	Pipo/Pied/ Jumo/Quga	Sat	-0-

[91] Kaibab TESU, no 297 TESU on Coconino

[92] Kaibab TESU, no 284 on Coconino, originally TESU 298 part of this strata, no acres reported

[93] Kaibab TESU, no TESU 305 on Coconino

[94] Kaibab TESU, no 405 on Coconino

[95] Coconino TESU, no TESU 500 on Kaibab

[96] Coconino TESU, no TESU 505 on Kaibab

[97] Coconino TESU, no TESU 506 on Kaibab

Stratum Number	Slope (%)	Final Strata Comb	Taxonomic Classification	Climatic Class	PPC	Soil Condition	Acres of Unsatisfactory Soil Condition
		517[98]	Typic Eutroboralfs, c-sk, montmorillonitic	HSC 5 - 1	Pipo/Pied/ Jude/Quga		
		523[99]	Mollic Eutroboralfs, fine, montmorillonitic	HSC 5 - 1	Pipo/Pied/ Jumo/Quga	Sat	-0-
		563[100]	Mollic Eutroboralfs, c-sk, montmorillonitic Typic Argiborolls, fine, montmorillonitic	HSC 5 - 1	Pipo/Pied/ Quga	Sat	-0-
		649[101]	Vertic Argiborolls, fine, montmorillonitic	HSC 5 - 1	Pipo/Pied/ Quga	Sat	-0-
40	0-15	510[102]	Typic Ustorthents, cindery, frigid	HSC 5 - 1	Pipo/Pied/ Jumo/Fapa	Sat	-0-
		512[103]	Vitrandic Ustochrepts, ashy-skeletal, frigid	HSC 5 - 1	Pipo/Pied/ Jumo/Fapa	Sat	-0-
41	15-40	311[104]	Typic Eutroboralfs, c-sk, montmorillonitic	HSC 5 - 1	Pipo/Pied/ Quga	Unsat.	1,854
		524[105]	**Typic Argiborolls, fine, mont**	**HSC 5 -**	**Pipo/Pied/**	**Sat**	**-0-**

[98] Coconino TESU, no TESU 517 on Kaibab

[99] Coconino TESU, TESU 523 on Kaibab mapped in Strata 47

[100] Kaibab TESU, no TESU 563 on Coconino

[101] Kaibab TESU, no TESU 649 on Coconino

[102] Coconino TESU, no TESU 510 on Kaibab

[103] Coconino TESU, no TESU 512 on Kaibab

[104] Kaibab TESU, no TESU 311 on Coconino

[105] Coconino TESU, no TESU 524 on Kaibab

Stratum Number	Slope (%)	Final Strata Comb	Taxonomic Classification	Climatic Class	PPC	Soil Condition	Acres of Unsatisfactory Soil Condition
			Mollic Eutroboralfs, c-sk, mont	**1**	**Jumo/Quga**		
		564[106]	Typic Argiborolls, c-sk, montmorillonitic Typic Argiborolls, fine, montmorillonitic Rock Outcrop	HSC 5 - 1	Pipo/Pied/ Quga	Unsat.	8,588
42	40-120	320[107]	Lithic Ustorthents, frigid Udic Ustochrepts, frigid	LSC 5	Pipos	Unsuit[108]	-0-
		539[109]	Typic Argiborolls Rock Outcrop	LSC 5	Pipo/Quga	Unsuit	-0-
		562[110]	Vitrandic Eutroboralfs, ashy-skeletal, frigid Vitrandic Eutroboralfs, ashy-skeletal, frigid	LSC 6	Psmeg	Sat	-0-
		575[111]	Mollic Eutroboralfs Lithic Eutroboralfs Rock Outcrop	LSC 5	Pipos	Unsuit	-0-
		596[112]	Rock Outcrop Lithic Haploborolls, loamy-skeletal, mixed Eutric Glossoboralfs, loamy-skeletal, mixed	LSC 5 LSC 6	 Pipos Psmeg	 Sat Sat	NA -0- -0-

[106] Kaibab TESU, no TESU 564 on Coconino

[107] Kaibab TESU, no TESU 320 on Coconino

[108] Unsuited – Geologic soil erosion exceeds soil loss tolerance because of site influences not management induced factors.

[109] Kaibab TESU, no TESU 539 on Coconino

[110] Coconino TESU no TESU 562 on Kaibab

[111] Coconino TESU, no TESU 575 on Kaibab

[112] Coconino TESU, no TESU 596 on Kaibab

Stratum Number	Slope (%)	Final Strata Comb	Taxonomic Classification	Climatic Class	PPC	Soil Condition	Acres of Unsatisfactory Soil Condition
		681[113]	Typic Eutroboralfs Lithic Eutroboralfs	LSC 5	Pipos	Sat Sat	-0-
43	40-80	431[114]	Mollic Eutroboralfs Lithic Eutroboralfs	HSC 5 - 1	Pipo/Pied/ Quga	Unsuit Unsuit	-0- -0-
		648[115]	Typic Argiborolls Lithic Argiborolls	HSC 5 - 1	Pipo/Pied/ Quga	Unsuit	-0-
44	40-120	555[116]	Typic Dystrochrepts, frigid Rock Outcrop Mollic Eutroboralfs	LSC 6	Psmeg Pipos	Sat	-0-
		620[117]	Typic Eutrochepts, frigid Udic Haploborolls Rock Outcrop	LSC 6 - 1	Psmeg/Pipo Jude/Qutu	Inherently Unstable	-0-
45	40-120	660[118]	Typic Eutrochepts, frigid Typic Haploborolls	LSC 5	Quga/Rone	Sat Unsuit	-0- -0-
46	0 – 15	260[119]	Lithic Ustochrepts, calcareous, l-sk, carb.,	LSC 4	Pied/Quga/Ar	Sat	-0-

[113] Kaibab TESU, no TESU 681 on Coconino

[114] Kaibab TESU, no TESU 431 on Coconino

[115] Kaibab TESU, no TESU 648 on Coconino

[116] Coconino TESU, no TESU 555 on Kaibab

[117] Coconino TESU, TESU 620 on Kaibab located on NKRD

[118] Kaibab TESU, no TESU 660 on Coconino

Stratum Number	Slope (%)	Final Strata Comb	Taxonomic Classification	Climatic Class	PPC	Soil Condition	Acres of Unsatisfactory Soil Condition
			mesic Typic Ustochrepts, calcareous, l-sk, mixed, mesic	+1	tr2/Stco4	 Sat	 -0-
		426[120]	Typic Ustorthents, cindery, mesic	HSC 40	Pied/Jumo/Fapa	Sat	-0-
		433[121]	Vitrandic Ustochrepts, ashy-skeletal, mesic	HSC 40	Pied/Jumo	Sat	-0-
		438[122]	Typic Argiustolls, fine, mont., mesic Typic Argiustolls, c-sk, mont., mesic	HSC 40	Pied/Jude2/Jumo/Bogr	Sat Sat	-0- -0-
		440[123]	Typic Argiustolls, fine, mont., mesic	HSC 40	Pied/Jumo/Bogr	Sat	-0-
		443[124]	Typic Durustands, medial, mesic Calcic Haplustands, medial-skeletal, mesic	HSC 40	Pied/Jumo/Bogr/Stco	Sat Sat	-0- -0-
		444[125]	Calcic Haplustands, medial, mesic Typic Durustands, medial, mesic	HSC 40	Bogr/Stco	Sat Sat	-0- -0-
		445[126]	Typic Argiustolls, l-sk, mixed., mesic	HSC 4	Pied/Jumo/Bo	Sat	-0-

[119] Kaibab TESU, no TESU 260 on Coconino

[120] Coconino TESU, no TESU 426 on Kaibab

[121] Coconino TESU, no TESU 433 on Kaibab

[122] Coconino TESU, no TESU 438 on Kaibab

[123] Coconino TESU, Kaibab TESU 440 in Strata 4

[124] Coconino TESU, no TESU 443 on Kaibab

[125] Coconino TESU, no TESU 444 on Kaibab

Stratum Number	Slope (%)	Final Strata Comb	Taxonomic Classification	Climatic Class	PPC	Soil Condition	Acres of Unsatisfactory Soil Condition
				0	gr		
		453[127]	Vertic Haplustalfs, c-sk, mont., mesic	HSC 40	Agsm/Bogr	Unsat	
		465[128]	Typic Haplustalfs, fine, mont., mesic Vertic Haplustalfs, fine, mont., mesic	HSC 40	Pied/Jumo/Agsm	Sat Unsat	-0-
		473[129]	Typic Haplustalfs, fine-loamy, mont., mesic	HSC 4+1	Pied/Jumo/Bogr	Sat	-0-
		490[130]	Typic Haplustalfs, fine, mont., mesic Lithic Haplustalfs, c-sk, mont., mesic	HSC 4+1	Pied/Jude/Jumo/Quga	Sat Sat	-0- -0-
		492[131]	Vertic Haplustalfs, fine, mont., mesic Typic Argiustolls, c-sk, mont., mesic	LSM 4+1	Agsm/Bogr Pifa/Jude/Qutu/Bogr	Impaired	-0- -0-
		495[132]	Typic Haplustalfs, fine, mont., mesic	LSM 4	Pifa/Jude/	Sat	-0-

[126] Coconino TESU, no TESU 445 on Kaibab

[127] Coconino TESU, no TESU 453 on Kaibab

[128] Coconino TESU, no TESU 465 on Kaibab

[129] Coconino TESU, no TESU 473 on Kaibab

[130] Coconino TESU, no TESU 490 on Kaibab

[131] Coconino TESU, no TESU 492 on Kaibab

[132] Coconino 495

Stratum Number	Slope (%)	Final Strata Comb	Taxonomic Classification	Climatic Class	PPC	Soil Condition	Acres of Unsatisfactory Soil Condition
				+1	Qutu/Bogr		
		495[133]	Typic Haplustalfs, fine, mont., mesic	HSC 40	Pied/Jumo	Sat	-0-
		514[134]	Vertic Argiustolls, fine, mont., mesic Vertic Argiustolls, c-sk, mont., mesic	HSC 40	Pied/Jumo	Sat	-0-
		543[135]	Vertic Haplustalfs, fine, mont., mesic Vertic Argiustolls, fine, mont., mesic	HSC 40	Pied/Jumo	Sat	-0-
		586[136]	Typic Argiustolls, fine, mont., mesic Typic Argiustolls, c-sk, mont., mesic	HSC 40	Pied/Jumo	Sat	-0-
		587[137]	Lithic Argiustolls, c-sk, mont., mesic Vertic Argiustolls, c-sk, mont., mesic	HSC 40	Pied/Jumo	Sat	-0-
		599[138]	Typic Argiustolls, fine, mont., mesic Typic Argiustolls, fine-loamy, mixed, mesic	HSC 40	Bogr/Pied	Sat	-0-
47	15 to	261[139]	Lithic Ustochrepts, calcareous, l-sk, carb.,	LSC 4	Pied/Quga/Ar	Unsat	4,970

[133] Kaibab 495

[134] Kaibab TESU, no TESU 514 on Coconino, this TESU was designed to account for overstory treatments in pinyon/juniper with basalt parent material.

[135] Kaibab TESU, no TESU 543 on Coconino

[136] Kaibab TESU, Coconino TESU 586 found in Strata 23

[137] Kaibab TESU, no TESU 587 on Coconino

[138] Kaibab TESU, no TESU 599 on Coconino

Stratum Number	Slope (%)	Final Strata Comb	Taxonomic Classification	Climatic Class	PPC	Soil Condition	Acres of Unsatisfactory Soil Condition
	120		mesic Rock Outcrop	+1	tr2/Stco4		
		274[140]	Typic Ustochrepts, calcareous, mesic Lithic Ustochrepts, calcareous,, mesic Typic Haplustalfs, mesic Rock Outcrop	LSC 4 0	Pied/Juos/ Artr/Stco	Unsat	7,688
		427[141]	Typic Ustorthents, cindery, mesic	HSC 4 0	Pied/Jumo/ Fapa	Sat	-0-
		430[142]	Typic Haplustalfs Lithic Haplustalfs Rock Outcrop	LSM 4 0	Juos	Inherently Unstable	-0-
		439[143]	Typic Haplustalfs, fine, mont., mesic Typic Haplustalfs, c-sk, mont., mesic	HSC 4 0	Pied/Juos/ Jumo/Bogr	Impaired	-0-
		441[144]	Vitrandic Ustochrepts, ashy-skeletal, mesic	HSC 4 0	Pied/Jude/ Jumo/Fapa	Sat	-0-
		449[145]	Udic Ustochrepts, l-sk, mixed, mesic	HSC 4	Jumo	Inherently	-0-

[139] Kaibab TESU, no TESU 261 on Coconino

[140] Kaibab TESU, no TESU 274 on Coconino

[141] Coconino TESU, no TESU 427 on Kaibab

[142] Coconino TESU, no TESU 430 on Kaibab

[143] Coconino TESU, no TESU 439 on Kaibab

[144] Coconino TESU, no TESU 441 on Kaibab

[145] Coconino TESU, no TESU 449 on Kaibab

Stratum Number	Slope (%)	Final Strata Comb	Taxonomic Classification	Climatic Class	PPC	Soil Condition	Acres of Unsatisfactory Soil Condition
			Typic Ustochrepts, l-sk, mixed, mesic			Unstable	
		450[146]	Typic Haplustalfs, l-sk, mixed, mesic Mollic Eutroboralfs, l-sk, mixed	HSC 4 LSC 5	Jumo/Pipos	Sat	-0-
		455[147]	Lithic Calciustolls, l-sk, carbonatic, mesic Calcic Ustochrepts, l-sk, mixed, mesic Rock Outcrop	HSC 4 0	Pied/Jumo/ Come/Bogr	Inherently Unstable	-0-
		470[148]	Typic Argiustolls, c-sk, mont., mesic Rock Outcrop	LSM 4	Qutu/Cemo	Sat	-0-
		471[149]	Rock Outcrop Typic Ustochrepts, l-sk, mixed, mesic Typic Ustorthents, sandy-skeletal, mixed, mesic	LSM 4	Qutu/Arpu/ Cemo	Unsuit.	-0-
		476[150]	Typic Haplustalfs, mesic Lithic Haplustalfs, mesic	HSC 4	Pied/Jumo	Unsat	1,271
		493[151]	Lithic Haplustalfs, c-sk, mont., mesic	LSM 4 +1	Pifa/Jude/ Qutu/Bogr	Sat	-0-

[146] Coconino TESU, no TESU 450 on Kaibab

[147] Coconino TESU, no TESU 455 on Kaibab

[148] Coconino TESU, no TESU 470 on Kaibab

[149] Coconino TESU, no TESU 471 on Kaibab

[150] Kaibab TESU, no TESU 476 on Coconino

[151] Coconino TESU, no TESU 493 on Kaibab

Stratum Number	Slope (%)	Final Strata Comb	Taxonomic Classification	Climatic Class	PPC	Soil Condition	Acres of Unsatisfactory Soil Condition
			Typic Haplustalfs, fine, mont., mesic				
		496[152]	Typic Haplustalfs, fine, mixed, mesic Lithic Haplustalfs, c-sk, mixed, mesic	HSC 4 0	Pied/Jumo	Unsat	15,484
		523[153]	Lithic Argiustolls, mesic Typic Argiustolls, mesic Rock Outcrop	LSM 4 +1	Pied/Jude/ Qutu/Arpu	Unsat	8,224
		541[154]	Typic Ustorthents, mesic Lithic Ustorthents, mesic Rock Outcrop	LSM 4 +1	Pied/Jude/ Qutu/Arpu	Unsuit.	-0-
		589[155]	Typic Argiustolls, c-sk, mont., mesic Typic Argiustolls, fine, mont., mesic Rock Outcrop	HSC 4 0	Pied/Jumo	Unsat	15,453
48	15 to 80	302[156]	Typic Dystrochrepts, l-sk, mixed, frigid	LSC 6 0	Abco/Psmeg/ Pipo/Quga	Sat	-0-
		312[157]	Eutric Glossoboralfs Lithic Glossoboralfs Rock Outcrop	LSC 6	Psmeg Psmeg NA	Unsat	1,371
		322[158]	Typic Dystrochrepts, frigid	LSC 6	Psmeg	Sat	-0-

[152] Kaibab TESU, no TESU 496 on Coconino

[153] Kaibab TESU, TESU 523 on Coconino found in Strata 39

[154] Kaibab TESU, no TESU 541 on Coconino

[155] Kaibab TESU, no TESU 589 on Coconino

[156] Kaibab TESU, no TESU 302 on Coconino

[157] Kaibab TESU, no TESU 312 on Coconino

Stratum Number	Slope (%)	Final Strata Comb	Taxonomic Classification	Climatic Class	PPC	Soil Condition	Acres of Unsatisfactory Soil Condition
			Lithic Udorthents, frigid		Psmeg		
		614[159]	Typic Dystrochrepts, l-sk, mixed, frigid	LSC 6 0	Abco/Psmeg/ Pipo/Quga	Sat	-0-
		651[160]	Typic Paleboralfs, l-sk, mixed Typic Paleboralfs, fine, mixed	LSC 6 0	Abco/Psmeg/ Pipo/Quga	Sat	-0-
		653[161]	Eutric Glossoboralfs, fine, mixed	LSC 6 0	Abco/Psmeg/ Pipo/Quga	Sat	-0-
		654[162]	Eutric Glossoboralfs, l-sk, mixed	LSC 6 0	Abco/Psmeg/ Pipo/Quga	Sat	-0-
49	40 to 120	540[163]	Typic Eutrochrepts, frigid Udic Haploborolls	LSM 6 - 1	Psmeg/Pipo/ Jude/Qutu	Unsat	2,668
		612[164]	Typic Dystrochrepts, frigid	LSC 6	Psmeg	Sat	-0-
		613[165]	Eutric Glossoboralfs, l-sk, mixed	LSC 6	Psmeg	Sat	-0-
		625[166]	Eutric Glossoboralfs	LSC 6	Psmeg	Sat	-0-

[158] Kaibab TESU, no TESU 322 on Coconino

[159] Coconino TESU, no TESU 614 on Kaibab

[160] Coconino TESU, no TESU 651 on Kaibab

[161] Coconino TESU, no TESU 653 on Kaibab

[162] Coconino TESU, no TESU 654 on Kaibab

[163] Kaibab TESU, no TESU 540 on Coconino

[164] Coconino TESU, no TESU 612 on Kaibab

[165] Coconino TESU, no TESU 613 on Kaibab

[166] Kaibab TESU, no TESU 625 on Coconino

Stratum Number	Slope (%)	Final Strata Comb	Taxonomic Classification	Climatic Class	PPC	Soil Condition	Acres of Unsatisfactory Soil Condition
			Rock Outcrop				
50	0 to 15	610[167]	Udic Haploborolls, l-sk, mixed Pachic Udic Haploborolls, l-sk, mixed	LSC 6 - 1	Potr/Psmeg/ Pipo	Sat	-0-
		611[168]	Udic Argiborolls, fine-loamy, mixed Udic Argiborolls, l-sk, mixed	LSC 6 - 1	Potr/Psmeg/ Pipo	Sat	-0-

[167] Coconino TESU, no TESU 610 on Kaibab

[168] Coconino TESU, no TESU 611 on Kaibab

Appendix C. Alternative B 5th and 6th HUC Watersheds, Condition and Treatment Acres

Table 32. Alternative B 5th and 6th HUC Watersheds, Condition and Treatment Acres

5th Code Watershed Name	6th Code Watershed Name	6th Code Watershed Condition	Acres within Proposed Treatments	Acres without Proposed Treatments	Project Area Acres Grand Total	Total 6th Code Acres	Percent of 6th Code
Ash Fork Draw-Jumbo Tank	Johnson Creek	Functioning at Risk	2,850	4,410	7,260	30,857	9.2
	Juan Tank Canyon	Functioning Properly	269		269	14,231	1.9
Beaver Creek	Bar M Canyon	Functioning Properly	15,506	1,822	17,328	17,551	88.3
	Double Cabin Park-Jacks Canyon	Functioning at Risk	1,720	180	1,900	21,660	7.9
	Jacks Canyon	Functioning at Risk	1		1	12,623	0.0
	Lower Woods Canyon	Functioning at Risk	9,594	374	9,968	26,131	36.7
	Rattlesnake Canyon	Functioning at Risk	2,997	77	3,074	17,023	17.6
	Upper Woods Canyon	Functioning at Risk	11,022	638	11,660	12,671	87.0
Bright Angel Creek-Colorado River	Hance Creek-Colorado River	Functioning at Risk*	36		36	22,311	0.2
Canyon Diablo	Anderson Canyon	Functioning at Risk	3,390	14	3,404	31,284	10.8
	Grapevine Canyon	Impaired Function	2,802		2,802	19,186	14.6
	Kinnikinick Canyon	Functioning at Risk	8,017	131	8,148	24,895	32.2
	Long Lake-Chavel Pass Ditch	Functioning at Risk	925	250	1,174	14,590	6.3
	Sawmill Wash	Functioning at Risk	6,170	892	7,062	12,385	49.8
	Yeager Draw	Functioning at Risk	100		100	24,465	0.4
Cataract Creek	Cataract Creek Headwaters	Functioning at Risk	2,878	13,318	16,196	16,699	17.2
	Dogtown Wash	Functioning at Risk	4,374	7,170	11,543	11,662	37.5

5th Code Watershed Name	6th Code Watershed Name	6th Code Watershed Condition	Acres within Proposed Treatments	Acres without Proposed Treatments	Project Area Acres Grand Total	Total 6th Code Acres	Percent of 6th Code
	Smoot Lake	Functioning at Risk	1,676	162	1,837	21,535	7.8
	Upper Cataract Creek	Functioning at Risk	2,774	124	2,898	25,011	11.1
	Upper Red Lake Wash	Impaired Function	15,635	1,307	16,942	26,930	58.1
Deadman Wash	Bear Jaw Canyon	Functioning at Risk	3,715	6,627	10,341	11,135	33.4
	Lower Deadman Wash	Functioning at Risk	1,007	108	1,115	31,266	3.2
	Middle Deadman Wash	Functioning at Risk	4,884	906	5,791	22,888	21.3
	Upper Deadman Wash	Functioning at Risk	14,305	7,908	22,212	22,752	62.9
Grindstone Wash-Verde River	Government Canyon	Functioning at Risk	1,166		1,166	12,765	9.1
Heather Wash	Coconino Wash Headwaters	Functioning at Risk	27,198	492	27,689	51,193	53.1
	Rain Tank Wash	Functioning at Risk	4,639		4,639	38,483	12.1
Hell Canyon	Bear Canyon	Functioning at Risk	8,263	644	8,906	21,982	37.6
	Devil Dog Canyon	Functioning at Risk	798	2,047	2,845	11,196	7.1
	Grindstone Wash	Functioning at Risk	1,618		1,618	17,796	9.1
	MC Canyon	Impaired Function	2,584	7,398	9,981	21,686	11.9
	Meath Wash	Functioning Properly	453	2,266	2,719	37,538	1.2
	Rattlesnake Wash	Functioning at Risk	706		706	16,259	4.3
	Upper Hell Canyon	Impaired Function	4,675	14,669	19,343	29,249	16.0
Kana-a Wash-Little Colorado River	Cinder Basin	Functioning Properly	8,201		8,201	39,864	20.6
	Upper Kana-a Wash	Functioning Properly	10,520	1,308	11,827	38,801	27.1
Lee Canyon-Little Colorado River	Upper Lee Canyon	Functioning at Risk	3,870	140	4,010	29,537	13.1

5th Code Watershed Name	6th Code Watershed Name	6th Code Watershed Condition	Acres within Proposed Treatments	Acres without Proposed Treatments	Project Area Acres Grand Total	Total 6th Code Acres	Percent of 6th Code
Miller Wash	Miller Wash Headwaters	Functioning at Risk	7,788	2,140	9,928	31,220	24.9
Oak Creek	Dry Creek	Impaired Function		1,156	1,156	34,398	0.0
	Fry Canyon	Functioning Properly	6,073	13,102	19,175	19,175	31.7
	Middle Oak Creek	Impaired Function	1,079		1,079	39,896	2.7
	Munds Canyon	Functioning Properly	31,472	5,996	37,468	41,179	76.4
	Pumphouse Wash	Functioning at Risk	14,185	17,189	31,375	31,546	45.0
	Secret Canyon	Functioning Properly		3,771	3,771	11,138	0.0
	Spring Creek	Functioning at Risk		1,403	1,403	30,830	0.0
	Upper Oak Creek	Functioning at Risk	9,634	142	9,776	17,900	53.8
	West Fork Oak Creek	Functioning Properly	9,419	11,878	21,298	27,339	34.5
Red Horse Wash	Curley Wallace Tank	Functioning at Risk	78		78	13,431	0.6
	Little Red Horse Wash	Functioning at Risk	835		835	27,465	3.0
	Red Horse Wash Headwaters	Functioning Properly	6,923	1,915	8,838	19,561	35.4
Rio de Flag	Doney Park	Impaired Function	13,940	28,193	42,133	42,133	33.1
	Lower Rio de Flag	Functioning Properly	7,717	27,021	34,738	35,308	21.9
	Sinclair Wash	Functioning Properly	160	6,606	6,766	6,766	2.4
	Upper Rio de Flag	Functioning at Risk	11,353	33,198	44,551	44,551	25.5
San Francisco Wash	Mormon Canyon	Functioning at Risk	1,061		1,061	19,252	5.5
	Upper Padre Canyon	Functioning at Risk	3,603	157	3,760	22,105	16.3
	Upper San Francisco Wash	Functioning at Risk	11,253	7,302	18,556	34,397	32.7
Spring Valley Wash	Middle Spring Valley Wash	Functioning Properly	4,684	1	4,685	32,672	14.3
	Upper Spring Valley	Impaired Function	23,223	14,066	37,289	38,305	60.6

5th Code Watershed Name	6th Code Watershed Name	6th Code Watershed Condition	Acres within Proposed Treatments	Acres without Proposed Treatments	Project Area Acres Grand Total	Total 6th Code Acres	Percent of 6th Code
	Wash						
Sycamore Creek	Big Spring Canyon	Impaired Function	15,275	15,958	31,233	31,697	48.2
	Cedar Creek	Functioning at Risk	999	18	1,017	8,888	11.2
	Garland Prairie	Impaired Function	16,166	8,888	25,054	25,054	64.5
	Government Prairie	Functioning at Risk	11,438	8,961	20,399	20,399	56.1
	Little LO Spring Canyon	Functioning Properly	7,392	3,487	10,878	12,260	60.3
	Lower Sycamore Creek	Functioning at Risk	145	178	323	30,677	0.5
	Middle Sycamore Creek	Functioning at Risk	7,661	1,072	8,733	18,335	41.8
	Pitman Valley-Scholz Lake	Impaired Function	16,572	11,887	28,459	28,459	58.2
	Sawmill Tank	Impaired Function	9,434	4,297	13,730	13,730	68.7
	Telephone Tank	Functioning Properly	4,873	10,061	14,934	14,934	32.6
	Tule Canyon	Impaired Function	19,199	5,757	24,956	29,866	64.3
	Upper Sycamore Creek	Impaired Function	6,835	6,482	13,317	14,916	45.8
	Volunteer Canyon	Functioning at Risk	5,979	17,874	23,852	24,506	24.4
	Volunteer Wash	Functioning at Risk	16,972	14,799	31,771	31,771	53.4
Upper Cedar Wash	Babbitt Lake	Impaired Function	15,377	411	15,788	28,413	54.1
	Dent and Sayer Tank	Functioning at Risk	10,873	3,138	14,011	37,216	29.2
	Klostermeyer Lake	Functioning at Risk	1,261		1,261	28,109	4.5
	Rabbit Canyon	Functioning at Risk	278		278	41,339	0.7
	Upper Cedar Wash (Local Drainage)	Functioning at Risk	9,383	210	9,593	23,476	40.0
Walnut Creek	Cherry Canyon-Walnut Creek	Functioning at Risk	7,674	15,484	23,158	28,330	27.1
	Mormon Lake	Functioning Properly	12,933	4,561	17,495	25,968	49.8

5th Code Watershed Name	6th Code Watershed Name	6th Code Watershed Condition	Acres within Proposed Treatments	Acres without Proposed Treatments	Project Area Acres Grand Total	Total 6th Code Acres	Percent of 6th Code
	Porcupine Canyon-Walnut Creek	Functioning at Risk		71	71	16,622	0.0
	Walnut Creek-Lower Lake Mary	Functioning at Risk	7,920	10,557	18,477	18,920	41.9
	Walnut Creek-Upper Lake Mary	Impaired Function	27,468	6,075	33,543	34,473	79.7
Grand Total			**587,924**	**400,841**	**988,764**		

Attachment 1. Soil Disturbance Calculation by Treatment Area and 6th HUC Watershed by Alternative

The following tables display the total expected ground disturbance acres for each alternative based on the assumptions for ground disturbance acres disclosed above. These acres do not display the actual treatment acres, only the expected acres of disturbance.

Table 33. Alternative B Soil Disturbance Calculation by Treatment Area and 6th HUC Watershed

	Current EIS Expected Ground Disturbance											
6th Code HUC NAME	6th code acres	grassland acres	high intensity acres	low intensity acres	savanna acres	aspen acres	rx burn acres	roads acres (temp, decom, reconstruct)	channel restore acres	TOTAL EIS ground distrurbacne	TOTAL EIS treatment % ground disturb	TOTAL EIS % Ground Disturb
Anderson Canyon	31,284	4	145	29	99	0	68	6	0	351	10.4	1.1
Babbitt Lake	28,413	4	564	220	245	18	308	127	0	1,485	9.7	5.2
Bar M Canyon	17,551	0	401	678	86	0	310	20	0	1,496	9.6	8.5
Bear Canyon	21,982	0	151	663	48	12	165	31	0	1,070	12.9	4.9
Bear Jaw Canyon	11,135	0	105	165	57	0	74	29	0	431	11.6	3.9
Big Spring Canyon	31,697	3	784	528	262	9	306	103	0	1,995	13.1	6.3
Cataract Creek Headwaters	16,699	15	127	5	35	0	58	17	0	256	8.9	1.5
Cedar Creek	8,888	4	62	22	18	0	20	2	0	129	12.9	1.5
Cherry Canyon-Walnut Creek	28,330	0	454	361	8	0	153	73	64	1,114	14.5	3.9
Cinder Basin	39,864	0	0	0	0	0	164	13	0	177	2.2	0.4
Coconino Wash Headwaters	51,193	0	285	2,236	0	0	544	42	6	3,112	11.4	6.1
Curley Wallace Tank	13,431	0	11	0	0	0	2	0	0	13	17.0	0.1
Dent and Sayer Tank	37,216	1	390	153	129	3	217	58	0	952	8.8	2.6
Devil Dog Canyon	11,196	1	66	0	7	0	16	6	0	96	12.0	0.9
Dogtown Wash	11,662	20	249	55	98	0	87	14	0	523	12.0	4.5
Doney Park	42,133	0	2	90	0	0	279	134	22	528	3.8	1.3
Double Cabin Park-Jacks Canyon	21,660	0	35	90	13	3	34	5	3	183	10.6	0.8
Dry Creek	34,398	0	0	0	0	0	0	0	0	0	0.0	0.0
Fry Canyon	19,175	2	386	66	122	0	121	16	26	740	12.2	3.9

	Current EIS Expected Ground Disturbance											
6th Code HUC NAME	6th code acres	grassland acres	high intensity acres	low intensity acres	savanna acres	aspen acres	rx burn acres	roads acres (temp, decom, reconstruct)	channel restore acres	TOTAL EIS ground distrurbacne	TOTAL EIS treatment % ground disturb	TOTAL EIS % Ground Disturb
Garland Prairie	25,054	15	307	333	284	1	323	35	0	1,298	8.0	5.2
Government Canyon	12,765	2	116	10	26	0	23	11	0	187	16.1	1.5
Government Prairie	20,399	6	448	147	236	7	229	32	0	1,106	9.7	5.4
Grapevine Canyon	19,186	1	167	19	60	0	56	4	0	308	11.0	1.6
Grindstone Wash	17,796	0	92	31	5	0	32	8	0	167	10.3	0.9
Johnson Creek	30,857	3	209	21	18	0	57	11	2	320	11.2	1.0
Juan Tank Canyon	14,231	0	40	0	0	0	5	4	0	49	18.3	0.3
Kinnikinick Canyon	24,895	0	434	134	227	0	160	19	0	974	12.2	3.9
Klostermeyer Lake	28,109	0	30	30	24	0	25	8	0	117	9.3	0.4
Little LO Spring Canyon	12,260	0	334	328	56	0	148	46	7	919	12.4	7.5
Little Red Horse Wash	27,465	0	1	49	0	0	17	0	0	67	8.0	0.2
Long Lake-Chavel Pass Ditch	14,590	0	29	29	3	0	18	0	0	79	8.5	0.5
Lower Deadman Wash	31,266	0	0	0	0	0	20	5	0	25	2.5	0.1
Lower Rio de Flag	35,308	0	172	137	26	0	154	61	0	551	7.1	1.6
Lower Sycamore Creek	30,677	0	5	8	2	0	3	2	0	20	14.1	0.1
Lower Woods Canyon	26,131	0	124	434	8	0	192	26	0	785	8.2	3.0
MC Canyon	21,686	0	108	55	33	0	52	11	0	259	10.0	1.2
Meath Wash	37,538	0	16	0	0	0	9	1	0	25	5.6	0.1
Middle Deadman Wash	22,888	0	61	38	3	0	98	61	0	260	5.3	1.1
Middle Oak Creek	39,896	0	1	16	0	0	22	2	0	41	3.8	0.1
Middle Spring Valley Wash	32,672	13	236	41	34	0	94	10	67	495	10.6	1.5
Middle Sycamore Creek	18,335	24	142	479	75	0	153	15	0	888	11.6	4.8
Miller Wash Headwaters	31,220	0	55	244	20	5	156	21	0	502	6.4	1.6
Mormon Canyon	19,252	2	22	0	64	0	21	5	0	115	10.8	0.6
Mormon Lake	25,968	0	162	714	219	0	259	65	7	1,426	11.0	5.5
Munds Canyon	41,179	1	627	2,180	186	19	629	131	35	3,809	12.1	9.2

	Current EIS Expected Ground Disturbance											
6th Code HUC NAME	6th code acres	grassland acres	high intensity acres	low intensity acres	savanna acres	aspen acres	rx burn acres	roads acres (temp, decom, reconstruct)	channel restore acres	TOTAL EIS ground distrurbacne	TOTAL EIS treatment % ground disturb	TOTAL EIS % Ground Disturb
Pitman Valley-Scholz Lake	28,459	45	678	448	235	1	331	27	0	1,766	10.7	6.2
Porcupine Canyon-Walnut Creek	16,622	0	0	0	0	0	0	0	0	0	0.0	0.0
Pumphouse Wash	31,546	0	430	777	108	0	284	106	58	1,762	12.4	5.6
Rabbit Canyon	41,339	6	9	0	0	0	6	3	0	24	8.5	0.1
Rain Tank Wash	38,483	0	133	326	0	0	93	22	0	574	12.4	1.5
Rattlesnake Canyon	17,023	0	48	100	15	0	60	0	0	223	7.4	1.3
Rattlesnake Wash	16,259	0	34	0	15	0	14	2	0	66	9.4	0.4
Red Horse Wash Headwaters	19,561	0	123	582	0	0	138	10	0	854	12.3	4.4
Sawmill Tank	13,730	7	438	91	112	1	189	21	0	859	9.1	6.3
Sawmill Wash	12,385	1	184	338	51	0	123	17	5	720	11.7	5.8
Secret Canyon	11,138	0	0	0	0	0	0	0	0	0	0.0	0.0%
Sinclair Wash	6,766	0	14	0	0	0	3	5	0	23	14.2	0.3%
Smoot Lake	21,535	6	137	4	22	0	34	8	0	210	12.5	1.0%
Spring Creek	30,830	0	0	0	0	0	0	0	0	0	0.0	0.0%
Telephone Tank	14,934	0	157	313	70	2	97	36	0	675	13.9	4.5%
Tule Canyon	29,866	34	608	804	326	7	384	93	15	2,271	11.8	7.6%
Upper Cataract Creek	25,011	4	133	0	40	0	55	3	0	235	8.5	0.9%
Upper Cedar Wash (Local Drainage)	23,476	0	332	104	291	4	188	75	0	994	10.6	4.2%
Upper Deadman Wash	22,752	0	86	338	121	57	286	107	7	1,002	7.0	4.4%
Upper Hell Canyon	29,249	2	137	237	36	2	93	21	0	529	11.3	1.8%
Upper Kana-a Wash	38,801	0	0	0	0	0	210	11	0	221	2.1	0.6%
Upper Lee Canyon	29,537	0	6	34	0	0	77	4	0	121	3.1	0.4%
Upper Oak Creek	17,900	0	106	880	15	0	193	44	0	1,238	12.9	6.9%
Upper Padre Canyon	22,105	16	137	86	66	0	72	3	0	379	10.5	1.7%
Upper Red Lake Wash	26,930	52	443	485	182	0	313	44	9	1,527	9.8	5.7
Upper Rio de Flag	44,551	0	296	563	78	3	227	96	6	1,269	11.2%	2.8

	Current EIS Expected Ground Disturbance											
6th Code HUC NAME	**6th code acres**	**grassland acres**	**high intensity acres**	**low intensity acres**	**savanna acres**	**aspen acres**	**rx burn acres**	**roads acres (temp, decom, reconstruct)**	**channel restore acres**	**TOTAL EIS ground distrurbacne**	**TOTAL EIS treatment % ground disturb**	**TOTAL EIS % Ground Disturb**
Upper San Francisco Wash	34,397	0	0	0	0	0	225	32	0	257	2.3%	0.7
Upper Spring Valley Wash	38,305	32	1,105	522	488	17	464	87	0	2,717	11.7%	7.1
Upper Sycamore Creek	14,916	0	473	116	221	0	137	24	5	975	14.3%	6.5
Upper Woods Canyon	12,671	0	217	535	120	1	220	16	0	1,108	10.1	8.7
Volunteer Canyon	24,506	0	413	113	74	0	120	19	16	754	12.6	3.1
Volunteer Wash	31,771	1	937	307	361	6	339	201	0	2,153	12.7	6.8
Walnut Creek-Lower Lake Mary	18,920	0	341	281	149	0	158	56	108	1,092	13.8	5.8
Walnut Creek-Upper Lake Mary	34,473	5	1,250	1,175	667	4	549	84	74	3,809	13.9	11.0
West Fork Oak Creek	27,339	0	211	537	122	0	188	48	20	1,128	12.0	4.1
Yeager Draw	24,465	0	9	5	0	0	2	0	0	16	15.9	0.1
TOTAL	**2,032,080**	**336**	**17,785**	**20,935**	**6,820**	**184**	**11,758**		**561**	**60,995**	**10.4**	**3.0**

Table 34. Alternative C Soil Disturbance Calculation by Treatment Area and 6th HUC Watershed

	Current EIS Expected Ground Disturbance

6th Code HUC NAME	6th code acres	grassland acres	high intensity acres	low intensity acres	savanna acres	aspen acres	rx burn acres	roads acres (temp, decom, reconstruct)	channel restore acres	TOTAL EIS ground distrurbacne	TOTAL EIS treatment % ground disturb	TOTAL EIS % Ground Disturb
Anderson Canyon	31,284	38	168	29	99	0	68	6	0	408	12.0	1.3
Babbitt Lake	28,413	81	786	270	245	18	308	127	0	1,835	11.9	6.5
Bar M Canyon	17,551	24	809	353	86	0	331	20	0	1,623	9.8	9.2
Bear Canyon	21,982	3	238	663	48	12	165	31	0	1,160	14.0	5.3
Bear Jaw Canyon	11,135	0	116	175	57	0	74	29	0	452	12.2	4.1
Big Spring Canyon	31,697	25	1,076	471	256	9	306	103	0	2,245	14.7	7.1
Cataract Creek Headwaters	16,699	24	139	5	35	0	58	17	0	278	9.6	1.7
Cedar Creek	8,888	5	62	22	18	0	20	2	0	130	13.0	1.5
Cherry Canyon-Walnut Creek	28,330	11	491	361	8	0	154	73	64	1,161	15.1	4.1
Cinder Basin	39,864	13	0	0	0	0	164	13	0	189	2.3	0.5
Coconino Wash Headwaters	51,193	2	301	2,235	0	0	544	42	6	3,130	11.5	6.1
Curley Wallace Tank	13,431	0	11	0	0	0	2	0	0	13	17.0	0.1
Dent and Sayer Tank	37,216	17	349	213	129	3	219	58	0	989	9.0	2.7
Devil Dog Canyon	11,196	2	70	0	7	0	16	6	0	101	12.7	0.9
Dogtown Wash	11,662	23	257	59	98	0	87	14	0	538	12.3	4.6
Doney Park	42,133	37	2	99	0	0	279	134	22	573	4.1	1.4
Double Cabin Park-Jacks Canyon	21,660	1	91	90	13	3	35	5	3	241	13.7	1.1
Dry Creek	34,398	0	0	0	0	0	0	0	0	0	0.0	0.0
Fry Canyon	19,175	21	441	167	122	0	121	16	26	915	15.1	4.8
Garland Prairie	25,054	269	376	333	295	1	331	35	0	1,641	9.9	6.5
Government Canyon	12,765	2	122	10	26	0	23	11	0	193	16.5	1.5
Government Prairie	20,399	121	582	184	236	7	229	32	0	1,392	12.2	6.8
Grapevine Canyon	19,186	3	202	19	60	0	56	4	0	345	12.3	1.8
Grindstone Wash	17,796	0	92	31	5	0	32	8	0	167	10.3	0.9
Johnson Creek	30,857	4	217	21	18	0	57	11	2	329	11.6	1.1
Juan Tank Canyon	14,231	0	40	0	0	0	5	4	0	49	18.3	0.3
Kinnikinick Canyon	24,895	12	647	134	227	0	162	19	0	1,201	14.8	4.8

	Current EIS Expected Ground Disturbance											
6th Code HUC NAME	6th code acres	grassland acres	high intensity acres	low intensity acres	savanna acres	aspen acres	rx burn acres	roads acres (temp, decom, reconstruct)	channel restore acres	TOTAL EIS ground distrurbacne	TOTAL EIS treatment % ground disturb	TOTAL EIS % Ground Disturb
Klostermeyer Lake	28,109	0	30	30	24	0	25	8	0	117	9.3	0.4
Little LO Spring Canyon	12,260	3	386	276	56	0	151	46	7	926	12.2	7.6
Little Red Horse Wash	27,465	0	1	49	0	0	17	0	0	67	8.0	0.2%
Long Lake-Chavel Pass Ditch	14,590	0	31	29	3	0	20	0	0	82	8.3	0.6
Lower Deadman Wash	31,266	0	0	0	0	0	20	5	0	25	2.5	0.1
Lower Rio de Flag	35,308	11	208	137	26	0	157	61	0	600	7.7	1.7
Lower Sycamore Creek	30,677	0	5	8	2	0	3	2	0	20	14.1	0.1
Lower Woods Canyon	26,131	3	135	349	8	0	195	26	0	716	7.3	2.7
MC Canyon	21,686	1	136	55	33	0	52	11	0	288	11.1	1.3
Meath Wash	37,538	6	16	0	0	0	9	1	0	31	6.8	0.1
Middle Deadman Wash	22,888	5	61	38	3	0	98	61	0	265	5.4	1.2
Middle Oak Creek	39,896	0	7	16	0	0	22	2	0	47	4.3	0.1
Middle Spring Valley Wash	32,672	16	262	41	34	0	94	10	67	523	11.2	1.6%
Middle Sycamore Creek	18,335	25	213	443	75	0	153	15	0	925	12.1	5.0
Miller Wash Headwaters	31,220	19	62	253	20	5	156	21	0	536	6.9	1.7
Mormon Canyon	19,252	6	22	0	64	0	21	5	0	119	11.2	0.6
Mormon Lake	25,968	15	370	664	219	0	266	65	7	1,605	12.1	6.2
Munds Canyon	41,179	26	1,020	1,996	186	19	643	131	35	4,057	12.6	9.9
Pitman Valley-Scholz Lake	28,459	154	718	429	228	1	331	27	0	1,890	11.4	6.6
Porcupine Canyon-Walnut Creek	16,622	0	0	0	0	0	0	0	0	0	0.0	0.0
Pumphouse Wash	31,546	6	625	777	108	0	292	106	58	1,971	13.5	6.2
Rabbit Canyon	41,339	6	9	0	0	0	6	3	0	24	8.5	0.1
Rain Tank Wash	38,483	0	133	279	0	0	93	22	0	527	11.4	1.4
Rattlesnake Canyon	17,023	0	48	100	15	0	61	0	0	225	7.3	1.3
Rattlesnake Wash	16,259	0	34	0	15	0	14	2	0	66	9.4	0.4
Red Horse Wash Headwaters	19,561	0	131	588	0	0	138	10	0	868	12.5	4.4

	Current EIS Expected Ground Disturbance											
6th Code HUC NAME	6th code acres	grassland acres	high intensity acres	low intensity acres	savanna acres	aspen acres	rx burn acres	roads acres (temp, decom, reconstruct)	channel restore acres	TOTAL EIS ground distrurbacne	TOTAL EIS treatment % ground disturb	TOTAL EIS % Ground Disturb
Sawmill Tank	13,730	131	508	91	112	1	189	21	0	1,053	11.2	7.7
Sawmill Wash	12,385	3	291	277	51	0	127	17	5	771	12.1	6.2
Secret Canyon	11,138	0	0	0	0	0	0	0	0	0	0.0	0.0
Sinclair Wash	6,766	2	14	0	0	0	3	5	0	25	15.4	0.4
Smoot Lake	21,535	6	137	4	22	0	34	8	0	210	12.5	1.0
Spring Creek	30,830	0	0	0	0	0	0	0	0	0	0.0	0.0
Telephone Tank	14,934	10	186	313	70	2	97	36	0	714	14.7	4.8
Tule Canyon	29,866	52	778	804	326	7	384	93	15	2,460	12.8	8.2
Upper Cataract Creek	25,011	7	137	0	40	0	55	3	0	242	8.7	1.0
Upper Cedar Wash (Local Drainage)	23,476	57	366	107	291	4	188	75	0	1,087	11.6	4.6
Upper Deadman Wash	22,752	32	86	341	121	57	286	107	7	1,037	7.2	4.6
Upper Hell Canyon	29,249	3	206	237	36	2	93	21	0	598	12.8	2.0
Upper Kana-a Wash	38,801	16	0	0	0	0	210	11	0	238	2.3	0.6
Upper Lee Canyon	29,537	0	12	34	0	0	77	4	0	127	3.3	0.4
Upper Oak Creek	17,900	5	157	880	15	0	193	44	0	1,294	13.4	7.2
Upper Padre Canyon	22,105	24	216	86	66	0	72	3	0	467	12.9	2.1
Upper Red Lake Wash	26,930	89	516	489	182	0	313	44	9	1,642	10.5	6.1
Upper Rio de Flag	44,551	11	403	607	78	3	227	96	6	1,431	12.6	3.2
Upper San Francisco Wash	34,397	29	0	0	0	0	225	32	0	286	2.5	0.8
Upper Spring Valley Wash	38,305	94	1,318	617	488	17	465	87	0	3,087	13.3	8.1
Upper Sycamore Creek	14,916	12	515	161	221	0	137	24	5	1,075	15.7	7.2
Upper Woods Canyon	12,671	6	403	343	120	1	233	16	0	1,121	9.6	8.8
Volunteer Canyon	24,506	5	465	137	74	0	121	19	16	837	13.8	3.4
Volunteer Wash	31,771	45	1,161	487	361	6	339	201	0	2,601	15.3	8.2
Walnut Creek-Lower Lake Mary	18,920	37	390	238	149	0	162	56	108	1,139	14.1	6.0

	Current EIS Expected Ground Disturbance											
6th Code HUC NAME	**6th code acres**	**grassland acres**	**high intensity acres**	**low intensity acres**	**savanna acres**	**aspen acres**	**rx burn acres**	**roads acres (temp, decom, reconstruct)**	**channel restore acres**	**TOTAL EIS ground distrurbacne**	**TOTAL EIS treatment % ground disturb**	**TOTAL EIS % Ground Disturb**
Walnut Creek-Upper Lake Mary	34,473	62	1,379	843	667	4	558	84	74	3,671	13.2	10.6
West Fork Oak Creek	27,339	4	452	477	122	0	189	48	20	1,312	13.9	4.8
Yeager Draw	24,465	0	9	5	0	0	2	0	0	16	15.9	0.1
TOTAL	**2,032,080**	**1,782**	**22,455**	**20,077**	**6,819**	**184**	**11,863**	**2,615**	**561**	**66,358**	**11.2**	**3.3**

Table 35. Alternative D. Soil Disturbance Calculation by Treatment Area and 6th HUC Watershed

	Current EIS Expected Ground Disturbance											
6th Code HUC NAME	**6th code acres**	**grassland acres**	**high intensity acres**	**low intensity acres**	**savanna acres**	**aspen acres**	**rx burn acres**	**roads acres (temp, decom, reconstruct)**	**channel restore acres**	**TOTAL EIS ground distrurbacne**	**TOTAL EIS treatment % ground disturb**	**TOTAL EIS % Ground Disturb**
Anderson Canyon	31,284	4	145	29	99	0	25	6	0	308	9.5	1.0
Babbitt Lake	28,413	4	564	220	245	18	118	127	0	1,296	9.7	4.6
Bar M Canyon	17,551	0	401	678	86	0	31	20	0	1,217	11.6	6.9
Bear Canyon	21,982	0	151	663	48	12	15	31	0	920	12.0	4.2
Bear Jaw Canyon	11,135	0	105	165	57	0	22	29	0	378	10.6	3.4
Big Spring Canyon	31,697	3	784	528	262	9	31	103	0	1,721	13.1	5.4
Cataract Creek Headwaters	16,699	15	127	5	35	0	23	17	0	222	7.9	1.3
Cedar Creek	8,888	4	62	22	18	0	3	2	0	112	11.2	1.3
Cherry Canyon-Walnut Creek	28,330	0	454	361	8	0	23	73	64	983	13.6	3.5
Cinder Basin	39,864	0	0	0	0	0	164	13	0	177	2.2	0.4
Coconino Wash Headwaters	51,193	0	285	2,236	0	0	131	42	6	2,699	10.0	5.3
Curley Wallace Tank	13,431	0	11	0	0	0	0	0	0	12	15.0	0.1
Dent and Sayer Tank	37,216	1	390	153	129	3	115	58	0	849	8.1	2.3
Devil Dog Canyon	11,196	1	66	0	7	0	5	6	0	85	11.0	0.8
Dogtown Wash	11,662	20	249	55	98	0	17	14	0	453	10.6	3.9
Doney Park	42,133	0	2	90	0	0	262	134	22	511	3.7	1.2
Double Cabin Park-Jacks Canyon	21,660	0	35	90	13	3	2	5	3	150	12.6	0.7
Dry Creek	34,398	0	0	0	0	0	0	0	0	0	0.0	0.0
Fry Canyon	19,175	2	386	66	122	0	15	16	26	633	13.3	3.3
Garland Prairie	25,054	15	307	333	284	1	170	35	0	1,145	7.3	4.6
Government Canyon	12,765	2	116	10	26	0	1	11	0	165	14.6	1.3

	Current EIS Expected Ground Disturbance											
6th Code HUC NAME	6th code acres	grassland acres	high intensity acres	low intensity acres	savanna acres	aspen acres	rx burn acres	roads acres (temp, decom, reconstruct)	channel restore acres	TOTAL EIS ground distrurbacne	TOTAL EIS treatment % ground disturb	TOTAL EIS % Ground Disturb
Government Prairie	20,399	6	448	147	236	7	84	32	0	961	9.4	4.7
Grapevine Canyon	19,186	1	167	19	60	0	17	4	0	269	10.5	1.4
Grindstone Wash	17,796	0	92	31	5	0	14	8	0	149	9.2	0.8
Johnson Creek	30,857	3	209	21	18	0	20	11	2	284	10.1	0.9
Juan Tank Canyon	14,231	0	40	0	0	0	0	4	0	44	16.3	0.3
Kinnikinick Canyon	24,895	0	434	134	227	0	8	19	0	822	13.9	3.3
Klostermeyer Lake	28,109	0	30	30	24	0	13	8	0	105	8.3	0.4
Little LO Spring Canyon	12,260	0	334	328	56	0	30	46	7	801	11.8	6.5
Little Red Horse Wash	27,465	0	1	49	0	0	8	0	0	59	7.0	0.2
Long Lake-Chavel Pass Ditch	14,590	0	29	29	3	0	0	0	0	60	13.2	0.4
Lower Deadman Wash	31,266	0	0	0	0	0	15	5	0	21	2.7	0.1
Lower Rio de Flag	35,308	0	172	137	26	0	95	61	0	491	6.8	1.4
Lower Sycamore Creek	30,677	0	5	8	2	0	0	2	0	18	12.3	0.1
Lower Woods Canyon	26,131	0	124	434	8	0	93	26	0	686	7.5	2.6
MC Canyon	21,686	0	108	55	33	0	20	11	0	227	9.5	1.0
Meath Wash	37,538	0	16	0	0	0	7	1	0	23	5.1	0.1
Middle Deadman Wash	22,888	0	61	38	3	0	83	61	0	246	5.0	1.1
Middle Oak Creek	39,896	0	1	16	0	0	18	2	0	37	3.6	0.1
Middle Spring Valley Wash	32,672	13	236	41	34	0	39	10	67	440	9.7	1.3
Middle Sycamore Creek	18,335	24	142	479	75	0	15	15	0	750	10.7	4.1
Miller Wash Headwaters	31,220	0	55	244	20	5	102	21	0	448	5.8	1.4
Mormon Canyon	19,252	2	22	0	64	0	8	5	0	102	9.6	0.5
Mormon Lake	25,968	0	162	714	219	0	18	65	7	1,186	12.6	4.6
Munds Canyon	41,179	1	627	2,180	186	19	43	131	35	3,222	12.5	7.8

	Current EIS Expected Ground Disturbance											
6th Code HUC NAME	**6th code acres**	**grassland acres**	**high intensity acres**	**low intensity acres**	**savanna acres**	**aspen acres**	**rx burn acres**	**roads acres (temp, decom, reconstruct)**	**channel restore acres**	**TOTAL EIS ground distrurbacne**	**TOTAL EIS treatment % ground disturb**	**TOTAL EIS % Ground Disturb**
Pitman Valley-Scholz Lake	28,459	45	678	448	235	1	97	27	0	1,531	9.5	5.4
Porcupine Canyon-Walnut Creek	16,622	0	0	0	0	0	0	0	0	0	0.0	0.0
Pumphouse Wash	31,546	0	430	777	108	0	19	106	58	1,498	13.6	4.7
Rabbit Canyon	41,339	6	9	0	0	0	0	3	0	18	6.6	0.0
Rain Tank Wash	38,483	0	133	326	0	0	29	22	0	510	10.1	1.3
Rattlesnake Canyon	17,023	0	48	100	15	0	13	0	0	176	9.3	1.0
Rattlesnake Wash	16,259	0	34	0	15	0	8	2	0	60	8.4	0.4
Red Horse Wash Headwaters	19,561	0	123	582	0	0	23	10	0	738	10.8	3.8
Sawmill Tank	13,730	7	438	91	112	1	85	21	0	755	8.5	5.5
Sawmill Wash	12,385	1	184	338	51	0	5	17	5	602	12.8	4.9
Secret Canyon	11,138	0	0	0	0	0	0	0	0	0	0.0	0.0
Sinclair Wash	6,766	0	14	0	0	0	1	5	0	21	13.0	0.3
Smoot Lake	21,535	6	137	4	22	0	8	8	0	184	11.0	0.9
Spring Creek	30,830	0	0	0	0	0	0	0	0	0	0.0	0.0
Telephone Tank	14,934	0	157	313	70	2	11	36	0	589	12.6	3.9
Tule Canyon	29,866	34	608	804	326	7	78	93	15	1,966	10.9	6.6
Upper Cataract Creek	25,011	4	133	0	40	0	29	3	0	209	7.6	0.8
Upper Cedar Wash (Local Drainage)	23,476	0	332	104	291	4	82	75	0	888	9.7	3.8
Upper Deadman Wash	22,752	0	86	338	121	57	194	107	7	910	6.4	4.0
Upper Hell Canyon	29,249	2	137	237	36	2	20	21	0	455	10.8	1.6
Upper Kana-a Wash	38,801	0	0	0	0	0	206	11	0	217	2.1	0.6
Upper Lee Canyon	29,537	0	6	34	0	0	70	4	0	114	3.0	0.4
Upper Oak Creek	17,900	0	106	880	15	0	17	44	0	1,063	11.8	5.9

	Current EIS Expected Ground Disturbance											
6th Code HUC NAME	**6th code acres**	**grassland acres**	**high intensity acres**	**low intensity acres**	**savanna acres**	**aspen acres**	**rx burn acres**	**roads acres (temp, decom, reconstruct)**	**channel restore acres**	**TOTAL EIS ground distrurbacne**	**TOTAL EIS treatment % ground disturb**	**TOTAL EIS % Ground Disturb**
Upper Padre Canyon	22,105	16	137	86	66	0	10	3	0	317	10.3	1.4
Upper Red Lake Wash	26,930	52	443	485	182	0	103	44	9	1,318	8.7	4.9
Upper Rio de Flag	44,551	0	296	563	78	3	50	96	6	1,092	11.3	2.5
Upper San Francisco Wash	34,397	0	0	0	0	0	225	32	0	257	2.3	0.7
Upper Spring Valley Wash	38,305	32	1,105	522	488	17	92	87	0	2,345	11.3	6.1
Upper Sycamore Creek	14,916	0	473	116	221	0	12	24	5	850	13.8	5.7
Upper Woods Canyon	12,671	0	217	535	120	1	15	16	0	903	12.1	7.1
Volunteer Canyon	24,506	0	413	113	74	0	18	19	16	652	12.9	2.7
Volunteer Wash	31,771	1	937	307	361	6	54	201	0	1,868	13.4	5.9
Walnut Creek-Lower Lake Mary	18,920	0	341	281	149	0	25	56	108	959	14.0	5.1
Walnut Creek-Upper Lake Mary	34,473	5	1,250	1,175	667	4	48	84	74	3,307	13.1	9.6
West Fork Oak Creek	27,339	0	211	537	122	0	6	48	20	945	13.5	3.5
Yeager Draw	24,465	0	9	5	0	0	0	0	0	14	13.	0.1
TOTAL	**2,032,080**	**336**	**17,785**	**20,935**	**6,820**	**184**	**3,576**	**2,615**	**561**	**52,814**	**10.0**	**2.6**

Attachment 2. Disturbed WEPP Interface for 4-FRI Project (12/19/2011)

Disturbed WEPP Results

User inputs

Location	**FLAGSTAFF WB AP AZ**				
Soil texture	loam				
Element	**Treatment**	**Gradient (%)**	**Length (ft)**	**Cover (%)**	**Rock (%)**
Upper	high severity fire	15 7	50	0	20
Lower	high severity fire	7 0	75	0	20
Description	0-15% high burn severity				

Mean annual averages for 10 years

			Total in 10 years	
24.28	in.	precipitation from	840	storms
0.63	in.	runoff from rainfall from	22	events
0.02	in.	runoff from snowmelt or winter rainstorm from	1	events
0.423	t ac^{-1}	upland erosion rate (0.095 kg m^{-2})		
0.401	t ac^{-1}	sediment leaving profile (3.421 kg m^{-1} width)		

Figure 1. 0-15 Percent Slopes, High Burn Severity, Loam Soils on Ponderosa Pine/MC Forests

Return period analysis based on 10 years of climate

Return Period	Precipitation (in.)	Runoff (in.)	Erosion (t ac^{-1})	Sediment (t ac^{-1})
10 year	31.52	1.87	1.23	1.1787
5 year	29.22	1.33	0.81	0.7756
2 year	25.42	0.49	0.32	0.2997
1 year	14.81	0.00	0.00	0.0000
Average	24.28	0.64	0.42	0.4005

Probabilities of occurrence first year following disturbance based on 10 years of climate

Probability there is runoff	90 %
Probability there is erosion	90 %
Probability there is sediment delivery	90 %

Figure 2. 0-15 Percent Slopes, High Burn Severity, Loam Soils on Ponderosa Pine/MC Forests

User inputs

Location	**FLAGSTAFF WB AP AZ**				
Soil texture	loam				
Element	**Treatment**	**Gradient (%)**	**Length (ft)**	**Cover (%)**	**Rock (%)**
Upper	high severity fire	40 27	50	0	50
Lower	high severity fire	27 15	75	0	30
Description					

Mean annual averages for 10 years

			Total in 10 years	
24.28	in.	precipitation from	840	storms
1.10	in.	runoff from rainfall from	38	events
0.01	in.	runoff from snowmelt or winter rainstorm from	2	events
2.683	t ac^{-1}	upland erosion rate (0.603 kg m^{-2})		
2.683	t ac^{-1}	sediment leaving profile (22.98 kg m^{-1} width)		

Figure 3. 15-40 Percent Slopes, High Burn Severity, Loam Soils on Ponderosa Pine/MC Forests

Return period analysis based on 10 years of climate

Return Period	Precipitation (in.)	Runoff (in.)	Erosion (t ac^{-1})	Sediment (t ac^{-1})
10 year	31.52	2.99	6.89	6.8930
5 year	29.22	1.73	4.20	4.1964
2 year	25.42	0.97	2.51	2.5060
1 year	14.81	0.00	0.00	0.0000
Average	24.28	1.10	2.68	2.6834

Probabilities of occurrence first year following disturbance based on 10 years of climate

Probability there is runoff	90 %	
Probability there is erosion	90 %	
Probability there is sediment delivery	90 %	

Figure 4. 15-40 Percent Slopes, High Burn Severity, Loam Soils on Ponderosa Pine/MC Forests

User inputs

Location	FLAGSTAFF WB AP AZ				
Soil texture	loam				
Element	Treatment	Gradient (%)	Length (ft)	Cover (%)	Rock (%)
Upper	high severity fire	80 60	100	0	50
Lower	high severity fire	60 40	100	0	50
Description					

Mean annual averages for 10 years

			Total in 10 years	
24.28	in.	precipitation from	840	storms
1.14	in.	runoff from rainfall from	36	events
0.01	in.	runoff from snowmelt or winter rainstorm from	1	events
6.226	t ac^{-1}	upland erosion rate (1.399 kg m^{-2})		
6.226	t ac^{-1}	sediment leaving profile (85.315 kg m^{-1} width)		

Figure 5. 40-120 Percent Slopes, High Burn Severity, Loam Soils on Ponderosa Pine/MC Forests

Return period analysis based on 10 years of climate

Return Period	Precipitation (in.)	Runoff (in.)	Erosion (t ac^{-1})	Sediment (t ac^{-1})
10 year	31.52	3.10	15.89	15.8904
5 year	29.22	1.77	9.57	9.5673
2 year	25.42	1.03	5.91	5.9155
1 year	14.81	0.00	0.00	0.0000
Average	24.28	1.15	6.23	6.2256

Probabilities of occurrence first year following disturbance based on 10 years of climate

Probability there is runoff	90 %	
Probability there is erosion	90 %	
Probability there is sediment delivery	90 %	

Figure 6. 40-120 Percent Slopes, High Burn Severity, Loam Soils on Ponderosa Pine/MC Forests

0-15 percent Slopes, Low Burn Severity (Prescribed and Managed Fires): Up to 10 percent moderate, Up to 5 percent high and 85percent low severity. Loam Soils on Ponderosa Pine/MC Forests. Assuming a reduction of vegetative ground cover of 10 percent below prefire (current veg ground cover conditions). Existing veg ground cover = 65percent and reduced to 50 percent with fire.

Location	FLAGSTAFF WB AP AZ				
Soil texture	loam				
Element	Treatment	Gradient (%)	Length (ft)	Cover (%)	Rock (%)
Upper	low severity fire	15 7	50	50	20
Lower	low severity fire	7 0	75	50	20
Description					

Mean annual averages for 10 years

			Total in 10 years	
24.28	in.	precipitation from	840	storms
0.06	in.	runoff from rainfall from	11	events
0.03	in.	runoff from snowmelt or winter rainstorm from	1	events
0.004	t ac^{-1}	upland erosion rate (0.001 kg m^{-2})		
0.004	t ac^{-1}	sediment leaving profile (0.039 kg m^{-1} width)		

Figure 7. 0-15 Percent Slopes, Low Burn Severity (Prescribed and Managed Fires)

Return period analysis based on 10 years of climate

Return Period	Precipitation (in.)	Runoff (in.)	Erosion (t ac^{-1})	Sediment (t ac^{-1})
10 year	31.52	0.63	0.04	0.0337
5 year	29.22	0.15	0.01	0.0096
2 year	25.42	0.02	0.00	0.0001
1 year	14.81	0.00	0.00	0.0000
Average	24.28	0.09	0.00	0.0044

Probabilities of occurrence first year following disturbance based on 10 years of climate

Probability there is runoff	60 %	
Probability there is erosion	50 %	
Probability there is sediment delivery	50 %	

Figure 8. 0-15 Percent Slopes, Low Burn Severity (Prescribed and Managed Fires)

15-40 Percent Slopes, Low Burn Severity (Prescribed and Managed Fires), 15 percent Moderate and High burn severity, 85percent low, current VGC = 65percent and reduced to 50 percent from fire, loam soils.

User inputs

Location	FLAGSTAFF WB AP AZ				
Soil texture	loam				
Element	**Treatment**	**Gradient (%)**	**Length (ft)**	**Cover (%)**	**Rock (%)**
Upper	low severity fire	40 27	50	50	50
Lower	low severity fire	27 15	75	50	30
Description					

Mean annual averages for 10 years

			Total in 10 years	
24.28	in.	precipitation from	840	storms
0.20	in.	runoff from rainfall from	18	events
0.01	in.	runoff from snowmelt or winter rainstorm from	1	events
0.138	t ac^{-1}	upland erosion rate (0.031 kg m^{-2})		

Figure 9. 15-40 Percent Slopes, Low Burn Severity (Prescribed and Managed Fires)

Return period analysis
based on 10 years of climate

Return Period	Precipitation (in.)	Runoff (in.)	Erosion (t ac^{-1})	Sediment (t ac^{-1})
10 year	31.52	0.63	0.43	0.4267
5 year	29.22	0.55	0.34	0.3362
2 year	25.42	0.25	0.17	0.1670
1 year	14.81	0.00	0.00	0.0000
Average	24.28	0.21	0.14	0.1379

Probabilities of occurrence first year following disturbance
based on 10 years of climate

Probability there is runoff	80 %	
Probability there is erosion	80 %	
Probability there is sediment delivery	80 %	

Figure 10. 15-40 Percent Slopes, Low Burn Severity (Prescribed and Managed Fires)

40-120 percent Slopes, Low Burn Severity (Prescribed & Managed Fires), 15percent Moderate and High burn severity, 85percent low, current VGC = 70 percent and reduced to 55 percent from fire, loam soils.

User inputs

Location	FLAGSTAFF WB AP AZ				
Soil texture	loam				
Element	**Treatment**	**Gradient (%)**	**Length (ft)**	**Cover (%)**	**Rock (%)**
Upper	low severity fire	80 60	100	55	50
Lower	low severity fire	60 40	100	55	50
Description					

Mean annual averages for 10 years

			Total in 10 years	
24.28	in.	precipitation from	840	storms
0.22	in.	runoff from rainfall from	18	events
0.00	in.	runoff from snowmelt or winter rainstorm from	0	events
0.365	t ac^{-1}	upland erosion rate (0.082 kg m^{-2})		

Figure 11. 40-120 Percent Slopes, Low Burn Severity (Prescribed and Managed Fires)

Return period analysis based on 10 years of climate

Return Period	Precipitation (in.)	Runoff (in.)	Erosion (t ac^{-1})	Sediment (t ac^{-1})
10 year	31.52	0.67	1.08	1.0751
5 year	29.22	0.54	0.83	0.8272
2 year	25.42	0.27	0.40	0.4033
1 year	14.81	0.00	0.00	0.0000
Average	24.28	0.22	0.36	0.3649

Probabilities of occurrence first year following disturbance based on 10 years of climate

Probability there is runoff	80 %	
Probability there is erosion	80 %	
Probability there is sediment delivery	80 %	

Figure 12. 40-120 Percent Slopes, Low Burn Severity (Prescribed and Managed Fires)

0-15 percent Slopes, Loam Soils on Ponderosa Pine Mature Forests. Current veg ground cover = 65 percent and no reduction in veg ground cover because no treatments or ground disturbance planned.

User inputs

Location	FLAGSTAFF WB AP AZ				
Soil texture	loam				
Element	**Treatment**	**Gradient (%)**	**Length (ft)**	**Cover (%)**	**Rock (%)**
Upper	mature forest	15 7	50	65	20
Lower	mature forest	7 0	75	65	20
Description					

Mean annual averages for 10 years

			Total in 10 years	
24.28	in.	precipitation from	840	storms
0.00	in.	runoff from rainfall from	0	events
0.03	in.	runoff from snowmelt or winter rainstorm from	1	events
0.000	t ac^{-1}	upland erosion rate (0 kg m^{-2})		
0.000	t ac^{-1}	sediment leaving profile (0 kg m^{-1} width)		

Figure 13. 0-15 percent slopes, loam soils on ponderosa pine mature forests

Return period analysis based on 10 years of climate

Return Period	Precipitation (in.)	Runoff (in.)	Erosion (t ac^{-1})	Sediment (t ac^{-1})
10 year	31.52	0.30	0.00	0.0000
5 year	29.22	0.00	0.00	0.0000
2 year	25.42	0.00	0.00	0.0000
1 year	14.81	0.00	0.00	0.0000
Average	24.28	0.03	0.00	0.0000

Probabilities of occurrence first year following disturbance based on 10 years of climate

Probability there is runoff	10 %	
Probability there is erosion	0 %	
Probability there is sediment delivery	0 %	

Figure 14. 0-15 percent slopes, loam soils on ponderosa pine mature forests

15-40 percent Slopes, Loam Soils on Ponderosa Pine Mature Forests. Current veg ground cover = 65 percent and no reduction in veg ground cover because no treatments or ground disturbance planned.

User inputs

Location	**FLAGSTAFF WB AP AZ**				
Soil texture	loam				
Element	**Treatment**	**Gradient (%)**	**Length (ft)**	**Cover (%)**	**Rock (%)**
Upper	mature forest	40 27	50	65	50
Lower	mature forest	27 15	75	65	30
Description					

Mean annual averages for 10 years

			Total in 10 years	
24.28	in.	precipitation from	840	storms
0.00	in.	runoff from rainfall from	1	events
0.01	in.	runoff from snowmelt or winter rainstorm from	1	events
0.000	t ac^{-1}	upland erosion rate (0 kg m^{-2})		
0.000	t ac^{-1}	sediment leaving profile (0 kg m^{-1} width)		

Figure 15. 15 to 40 percent slopes, loam soils on ponderosa pine mature forests

Return period analysis based on 10 years of climate

Return Period	Precipitation (in.)	Runoff (in.)	Erosion (t ac^{-1})	Sediment (t ac^{-1})
10 year	31.52	0.08	0.00	0.0000
5 year	29.22	0.00	0.00	0.0000
2 year	25.42	0.00	0.00	0.0000
1 year	14.81	0.00	0.00	0.0000
Average	24.28	0.01	0.00	0.0000

Probabilities of occurrence first year following disturbance based on 10 years of climate

Probability there is runoff	10 %	
Probability there is erosion	0 %	
Probability there is sediment delivery	0 %	

Figure 16. 15 to 40 percent slopes, loam soils on ponderosa pine mature forests

40-120 percent slopes, loam soils on ponderosa pine mature forests. Current veg ground cover = 70 percent and no reduction in veg ground cover because no treatments or ground disturbance planned.

User inputs

Location	**FLAGSTAFF WB AP AZ**				
Soil texture	loam				
Element	**Treatment**	**Gradient (%)**	**Length (ft)**	**Cover (%)**	**Rock (%)**
Upper	mature forest	80 60	100	70	50
Lower	mature forest	60 40	100	70	50
Description					

Mean annual averages for 10 years

			Total in 10 years	
24.28	in.	precipitation from	840	storms
0.00	in.	runoff from rainfall from	1	events
0.00	in.	runoff from snowmelt or winter rainstorm from	0	events
0.000	t ac^{-1}	upland erosion rate (0 kg m^{-2})		
0.000	t ac^{-1}	sediment leaving profile (0 kg m^{-1} width)		

Figure 17. 40-120 percent slopes, loam soils on ponderosa pine mature forests

Return period analysis based on 10 years of climate

Return Period	Precipitation (in.)	Runoff (in.)	Erosion (t ac^{-1})	Sediment (t ac^{-1})
10 year	31.52	0.00	0.00	0.0000
5 year	29.22	0.00	0.00	0.0000
2 year	25.42	0.00	0.00	0.0000
1 year	14.81	0.00	0.00	0.0000
Average	24.28	0.00	0.00	0.0000

Probabilities of occurrence first year following disturbance based on 10 years of climate

Probability there is runoff	10 %	
Probability there is erosion	0 %	
Probability there is sediment delivery	0 %	

Figure 18. 40-120 percent slopes, loam soils on ponderosa pine mature forests

0-15 percent slopes, loam soils on ponderosa pine thinned, young forests. Best management practice monitoring on the Mogollon Rim Ranger District (Jagow 1994, Fleishman 1996 and Fleishman 2005) has shown that ground disturbance (skidded to mineral soil) and compaction may occur on the approximately 10-15 percent of the thinning area when mechanized skidding and harvesting occur when designated ski trails are utilized. 15percent reduction in current veg ground cover used for Thinning Treatments. Current veg ground cover = 65percent and reduced by 15 percent to 50 percent

User inputs

Location	FLAGSTAFF WB AP AZ				
Soil texture	loam				
Element	Treatment	Gradient (%)	Length (ft)	Cover (%)	Rock (%)
Upper	thin or young forest	15 7	50	50	20
Lower	thin or young forest	7 0	75	50	20
Description					

Mean annual averages for 10 years

			Total in 10 years	
24.28	in.	precipitation from	840	storms
0.00	in.	runoff from rainfall from	0	events
0.02	in.	runoff from snowmelt or winter rainstorm from	1	events
0.000	t ac^{-1}	upland erosion rate (0 kg m^{-2})		
0.000	t ac^{-1}	sediment leaving profile (0 kg m^{-1} width)		

Figure 19. 0-15 percent slopes, loam soils on ponderosa pine thinned, young forests

Return Period	Precipitation (in.)	Runoff (in.)	Erosion (t ac^{-1})	Sediment (t ac^{-1})
10 year	31.52	0.22	0.00	0.0000
5 year	29.22	0.00	0.00	0.0000
2 year	25.42	0.00	0.00	0.0000
1 year	14.81	0.00	0.00	0.0000
Average	24.28	0.02	0.00	0.0000

Probabilities of occurrence first year following disturbance based on 10 years of climate

Probability there is runoff	10 %	
Probability there is erosion	0 %	
Probability there is sediment delivery	0 %	

Figure 20. 0-15 percent slopes, loam soils on ponderosa pine thinned, young forests

15-40 percent Slopes, Loam Soils on Ponderosa Pine Thinned, Young Forests. Ground disturbance (skidded to mineral soil) and compaction may occur on the approximately 10-15 percent of the thinning area when mechanized skidding and harvesting occur when designated ski trails are utilized. 15 percent Reduction in current veg ground cover used for Thinning Treatments. Current veg ground cover = 65 percent and reduced by 15 percent to 50 percent.

User inputs

Location	**FLAGSTAFF WB AP AZ**				
Soil texture	loam				
Element	**Treatment**	**Gradient (%)**	**Length (ft)**	**Cover (%)**	**Rock (%)**
Upper	thin or young forest	40 27	50	50	50
Lower	thin or young forest	27 15	75	50	30
Description					

Mean annual averages for 10 years

			Total in 10 years	
24.28	in.	precipitation from	840	storms
0.02	in.	runoff from rainfall from	6	events
0.00	in.	runoff from snowmelt or winter rainstorm from	1	events
0.004	t ac^{-1}	upland erosion rate (0.001 kg m^{-2})		
0.004	t ac^{-1}	sediment leaving profile (0.041 kg m^{-1} width)		

Figure 21. 15-40 percent slopes, loam soils on ponderosa pine thinned, young forests

Return period analysis based on 10 years of climate

Return Period	Precipitation (in.)	Runoff (in.)	Erosion (t ac^{-1})	Sediment (t ac^{-1})
10 year	31.52	0.26	0.04	0.0390
5 year	29.22	0.03	0.01	0.0082
2 year	25.42	0.00	0.00	0.0000
1 year	14.81	0.00	0.00	0.0000
Average	24.28	0.03	0.00	0.0044

Probabilities of occurrence first year following disturbance based on 10 years of climate

Probability there is runoff	30 %	
Probability there is erosion	20 %	
Probability there is sediment delivery	30 %	

Figure 22. 15-40 percent slopes, loam soils on ponderosa pine thinned, young forests

40-120 percent Slopes, Loam Soils on Ponderosa Pine Thinned, Young Forests. No ground disturbing mechanical harvest so overall no ground disturbance from machinery. Hand felling may disturb up to 10 percent of soil surface. 10 percent Reduction in current veg ground cover used for Thinning Treatments. Current veg ground cover = 70 percent and reduced by 10 percent to 60 percent

User inputs

Location	FLAGSTAFF WB AP AZ				
Soil texture	loam				
Element	**Treatment**	**Gradient (%)**	**Length (ft)**	**Cover (%)**	**Rock (%)**
Upper	thin or young forest	80 60	100	60	50
Lower	thin or young forest	60 40	100	60	50
Description					

Mean annual averages for 10 years

			Total in 10 years	
24.28	in.	precipitation from	840	storms
0.03	in.	runoff from rainfall from	6	events
0.00	in.	runoff from snowmelt or winter rainstorm from	0	events
0.009	t ac^{-1}	upland erosion rate (0.002 kg m^{-2})		
0.009	t ac^{-1}	sediment leaving profile (0.14 kg m^{-1} width)		

Figure 23. 40-120 percent slopes, loam soils on ponderosa pine thinned, young forests

Return period analysis based on 10 years of climate

Return Period	Precipitation (in.)	Runoff (in.)	Erosion (t ac^{-1})	Sediment (t ac^{-1})
10 year	31.52	0.24	0.08	0.0835
5 year	29.22	0.03	0.02	0.0187
2 year	25.42	0.00	0.00	0.0000
1 year	14.81	0.00	0.00	0.0000
Average	24.28	0.03	0.01	0.0089

Probabilities of occurrence first year following disturbance based on 10 years of climate

Probability there is runoff	40 %
Probability there is erosion	20 %
Probability there is sediment delivery	20 %

Figure 24. 40-120 percent slopes, loam soils on ponderosa pine thinned, young forests

15-40 percent Slopes, Loam Soils on Ponderosa Pine Thinned, Young Forests. Complete removal of veg ground cover to 0 percent. Current veg ground cover = 65 percent and reduced by 15 percent to 50 percent.

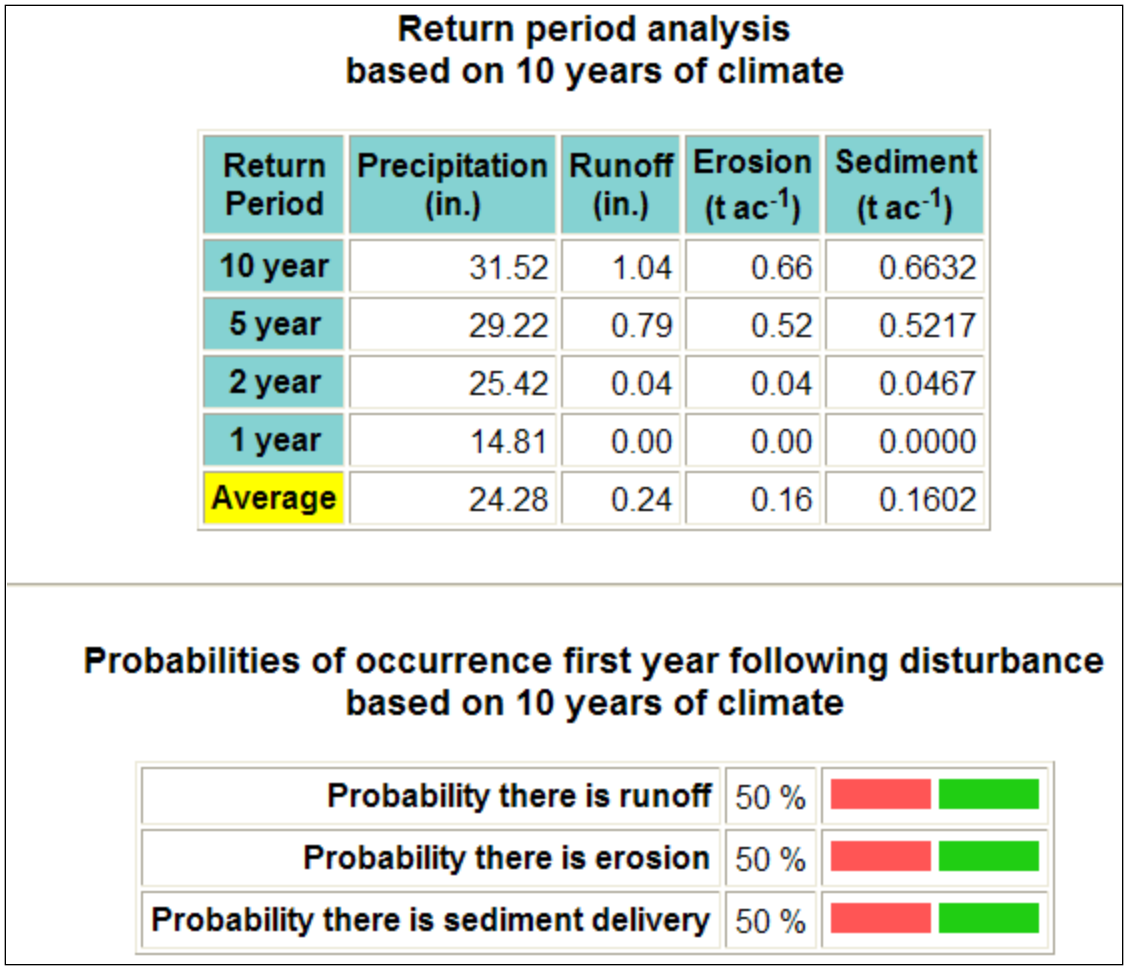
User inputs

Location	FLAGSTAFF WB AP AZ				
Soil texture	loam				
Element	**Treatment**	**Gradient (%)**	**Length (ft)**	**Cover (%)**	**Rock (%)**
Upper	thin or young forest	40 27	50	0	50
Lower	thin or young forest	27 15	75	0	50
Description	15-40% slopes. No Cover. 4-FRI				

Mean annual averages for 10 years

			Total in 10 years	
24.28	in.	precipitation from	840	storms
0.24	in.	runoff from rainfall from	8	events
0.00	in.	runoff from snowmelt or winter rainstorm from	0	events
0.160	t ac^{-1}	upland erosion rate (0.036 kg m^{-2})		
0.160	t ac^{-1}	sediment leaving profile (1.356 kg m^{-1} width)		

Figure 25. 15-40 percent slopes, loam soils on ponderosa pine thinned, young forests



Return period analysis based on 10 years of climate

Return Period	Precipitation (in.)	Runoff (in.)	Erosion (t ac^{-1})	Sediment (t ac^{-1})
10 year	31.52	1.04	0.66	0.6632
5 year	29.22	0.79	0.52	0.5217
2 year	25.42	0.04	0.04	0.0467
1 year	14.81	0.00	0.00	0.0000
Average	24.28	0.24	0.16	0.1602

Probabilities of occurrence first year following disturbance based on 10 years of climate

Probability there is runoff	50 %	
Probability there is erosion	50 %	
Probability there is sediment delivery	50 %	

Figure 26. 15-40 percent slopes, loam soils on ponderosa pine thinned, young forests

Attachment 3. Soil Interpretations by Watershed, Strata and TESU

Table 36. Alternative B Soil Interpretations by Watershed, Strata and TESU

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
Anderson Canyon	Burn Only	11	0585_CNF	Moderate	Slight	0-15%	Sat	58
		23	0582_CNF	Moderate	Slight	0-15%	Sat	13
			0586_CNF	Moderate	Slight	0-15%	Sat	27
	Grassland Restoration	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	6
		11	0585_CNF	Moderate	Slight	0-15%	Sat	1
		19	0515_CNF	NA	Mod	15-40%	Unsat	74
		23	0582_CNF	Moderate	Slight	0-15%	Sat	0
			0586_CNF	Moderate	Slight	0-15%	Sat	0
		39	0523_CNF	Severe	Slight	0-15%	Sat	59
	Higher Intensity Mechanical	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	6
		9	0050_CNF	NA	Slight	0-5%	Sat	8
		11	0585_CNF	Moderate	Slight	0-15%	Sat	442
		19	0515_CNF	NA	Mod	15-40%	Unsat	23
		23	0582_CNF	Moderate	Slight	0-15%	Sat	107
			0586_CNF	Moderate	Slight	0-15%	Sat	213
		32	0565_CNF	Severe	Severe	15-40%	Sat	14
			0584_CNF	Severe	Severe	15-40%	Sat	50
		39	0523_CNF	Severe	Slight	0-15%	Sat	256
		46	0453_CNF	NA	Mod	0-15%	Unsat	1

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
	Lower Intensity Mechanical	11	0585_CNF	Moderate	Slight	0-15%	Sat	75
		23	0582_CNF	Moderate	Slight	0-15%	Sat	18
			0586_CNF	Moderate	Slight	0-15%	Sat	116
		32	0565_CNF	Severe	Severe	15-40%	Sat	30
		39	0523_CNF	Severe	Slight	0-15%	Sat	1
	No Treatment Proposed	9	0050_CNF	NA	Slight	0-5%	Sat	14
	Operational Burn	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	32
		9	0050_CNF	NA	Slight	0-5%	Sat	31
		11	0585_CNF	Moderate	Slight	0-15%	Sat	24
		19	0515_CNF	NA	Mod	15-40%	Unsat	600
		23	0582_CNF	Moderate	Slight	0-15%	Sat	7
			0586_CNF	Moderate	Slight	0-15%	Sat	14
		32	0584_CNF	Severe	Severe	15-40%	Sat	12
		39	0523_CNF	Severe	Slight	0-15%	Sat	362
		46	0453_CNF	NA	Mod	0-15%	Unsat	49
	Savanna	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	3
		11	0585_CNF	Moderate	Slight	0-15%	Sat	85
		19	0515_CNF	NA	Mod	15-40%	Unsat	90
		23	0582_CNF	Moderate	Slight	0-15%	Sat	15
			0586_CNF	Moderate	Slight	0-15%	Sat	2
		39	0523_CNF	Severe	Slight	0-15%	Sat	464
Babbitt Lake	Aspen Treatment	23	0586_CNF	Moderate	Slight	0-15%	Sat	53

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		27	0582a_CNF	Moderate	Slight	0-15%	Sat	55
		42	0562_CNF	Severe	Severe	40-120%	Sat	13
		50	0611_CNF	Moderate	Mod	0-15%	Sat	1
	Burn Only	6	0507_KNF	NA	Slight	0-15%	Sat	13
		19	0515_CNF	NA	Mod	15-40%	Unsat	41
		23	0586_CNF	Moderate	Slight	0-15%	Sat	182
		27	0551_CNF	Moderate	Slight	0-15%	Sat	56
			0557a_CNF	Severe	Slight	0-15%	Sat	236
			0582a_CNF	Moderate	Slight	0-15%	Sat	114
		39	0505_CNF	Moderate	Slight	0-15%	Sat	18
			0517_CNF	Moderate	Slight	0-15%	Sat	885
			0523_CNF	Severe	Slight	0-15%	Sat	671
		41	0524_CNF	Severe	Severe	15-40%	Sat	33
		42	0562_CNF	Severe	Severe	40-120%	Sat	420
		47	0449_CNF	NA	Severe	15-120%	Unsuit	706
			0450_CNF	NA	Mod	15-120%	Sat	9
		49	0612_CNF	Severe	Severe	40-120%	Sat	0
	Grassland Restoration	3	0595_CNF	NA	Slight	0-15%	Sat	2
		6	0507_KNF	NA	Slight	0-15%	Sat	0

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		19	0515_CNF	NA	Mod	15-40%	Unsat	111
		23	0586_CNF	Moderate	Slight	0-15%	Sat	1
		39	0523_CNF	Severe	Slight	0-15%	Sat	26
	Higher Intensity Mechanical	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	4
		3	0595_CNF	NA	Slight	0-15%	Sat	18
		19	0515_CNF	NA	Mod	15-40%	Unsat	90
		23	0586_CNF	Moderate	Slight	0-15%	Sat	1502
		27	0551_CNF	Moderate	Slight	0-15%	Sat	18
			0557a_CNF	Severe	Slight	0-15%	Sat	283
			0582a_CNF	Moderate	Slight	0-15%	Sat	2139
		39	0505_CNF	Moderate	Slight	0-15%	Sat	129
			0517_CNF	Moderate	Slight	0-15%	Sat	3
			0523_CNF	Severe	Slight	0-15%	Sat	1309
		41	0524_CNF	Severe	Severe	15-40%	Sat	13
		42	0562_CNF	Severe	Severe	40-120%	Sat	27
		46	0440_CNF	NA	Slight	0-15%	Sat	43
		47	0450_CNF	NA	Mod	15-120%	Sat	26
		50	0611_CNF	Moderate	Mod	0-15%	Sat	1
	Lower Intensity Mechanical	3	0595_CNF	NA	Slight	0-15%	Sat	1
		19	0515_CNF	NA	Mod	15-40%	Unsat	16
		23	0586_CNF	Moderate	Slight	0-15%	Sat	288
		27	0551_CNF	Moderate	Slight	0-15%	Sat	258
			0557a_CNF	Severe	Slight	0-15%	Sat	29

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
			0582a_CNF	Moderate	Slight	0-15%	Sat	974
		39	0505_CNF	Moderate	Slight	0-15%	Sat	0
			0517_CNF	Moderate	Slight	0-15%	Sat	49
			0523_CNF	Severe	Slight	0-15%	Sat	47
		42	0562_CNF	Severe	Severe	40-120%	Sat	98
		46	0440_CNF	NA	Slight	0-15%	Sat	23
		47	0449_CNF	NA	Severe	15-120%	Unsuit	7
			0450_CNF	NA	Mod	15-120%	Sat	39
		49	0612_CNF	Severe	Severe	40-120%	Sat	50
	No Treatment Proposed	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	12
		27	0551_CNF	Moderate	Slight	0-15%	Sat	11
			0582a_CNF	Moderate	Slight	0-15%	Sat	23
		35	0584a_CNF	Severe	Severe	15-40%	Sat	1
		39	0505_CNF	Moderate	Slight	0-15%	Sat	8
		42	0562_CNF	Severe	Severe	40-120%	Sat	2
		47	0450_CNF	NA	Mod	15-120%	Sat	4
		49	0612_CNF	Severe	Severe	40-120%	Sat	211
		50	0611_CNF	Moderate	Mod	0-15%	Sat	139
	Operational Burn	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	76
		3	0595_CNF	NA	Slight	0-15%	Sat	297
		6	0507_KNF	NA	Slight	0-15%	Sat	5
		19	0515_CNF	NA	Mod	15-40%	Unsat	1406
		23	0586_CNF	Moderate	Slight	0-15%	Sat	107
		27	0551_CNF	Moderate	Slight	0-15%	Sat	3
			0557a_CNF	Severe	Slight	0-15%	Sat	19

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
			0582a_CNF	Moderate	Slight	0-15%	Sat	134
		39	0505_CNF	Moderate	Slight	0-15%	Sat	7
			0517_CNF	Moderate	Slight	0-15%	Sat	3
			0523_CNF	Severe	Slight	0-15%	Sat	549
		42	0562_CNF	Severe	Severe	40-120%	Sat	6
		47	0450_CNF	NA	Mod	15-120%	Sat	4
	Savanna	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	5
		3	0595_CNF	NA	Slight	0-15%	Sat	28
		19	0515_CNF	NA	Mod	15-40%	Unsat	59
		23	0586_CNF	Moderate	Slight	0-15%	Sat	352
		27	0557a_CNF	Severe	Slight	0-15%	Sat	1
			0582a_CNF	Moderate	Slight	0-15%	Sat	684
		35	0584a_CNF	Severe	Severe	15-40%	Sat	22
		39	0505_CNF	Moderate	Slight	0-15%	Sat	0
			0523_CNF	Severe	Slight	0-15%	Sat	478
		46	0440_CNF	NA	Slight	0-15%	Sat	3
Bar M Canyon	Burn Only	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	23
		11	0585_CNF	Moderate	Slight	0-15%	Sat	286
		12	0579_CNF	Moderate	Slight	0-15%	Sat	174
		15	0520_CNF	Severe	Slight	0-15%	Sat	15
		23	0582_CNF	Moderate	Slight	0-15%	Sat	1501
			0586_CNF	Moderate	Slight	0-15%	Sat	224
		32	0565_CNF	Severe	Severe	15-40%	Sat	183
			0584_CNF	Severe	Severe	15-40%	Sat	1276
		42	0575_CNF	Severe	Severe	40-120%	Unsuit	96

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
	Grassland Restoration	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	11
		11	0585_CNF	Moderate	Slight	0-15%	Sat	0
		23	0582_CNF	Moderate	Slight	0-15%	Sat	4
	Higher Intensity Mechanical	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	58
		11	0585_CNF	Moderate	Slight	0-15%	Sat	1201
		12	0579_CNF	Moderate	Slight	0-15%	Sat	223
		15	0520_CNF	Severe	Slight	0-15%	Sat	80
		23	0582_CNF	Moderate	Slight	0-15%	Sat	2010
			0586_CNF	Moderate	Slight	0-15%	Sat	1059
		32	0565_CNF	Severe	Severe	15-40%	Sat	23
			0584_CNF	Severe	Severe	15-40%	Sat	727
		42	0575_CNF	Severe	Severe	40-120%	Unsuit	11
	Lower Intensity Mechanical	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	47
		11	0585_CNF	Moderate	Slight	0-15%	Sat	888
		12	0579_CNF	Moderate	Slight	0-15%	Sat	548
		15	0520_CNF	Severe	Slight	0-15%	Sat	124
		23	0582_CNF	Moderate	Slight	0-15%	Sat	2870
			0586_CNF	Moderate	Slight	0-15%	Sat	163
		25	0578_CNF	Severe	Slight	0-15%	Sat	7
		32	0565_CNF	Severe	Severe	15-40%	Sat	378
			0584_CNF	Severe	Severe	15-40%	Sat	707
		42	0575_CNF	Severe	Severe	40-120%	Unsuit	31
	No Treatment Proposed	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	114

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		11	0585_CNF	Moderate	Slight	0-15%	Sat	56
		12	0579_CNF	Moderate	Slight	0-15%	Sat	2
		23	0582_CNF	Moderate	Slight	0-15%	Sat	103
			0586_CNF	Moderate	Slight	0-15%	Sat	426
		32	0584_CNF	Severe	Severe	15-40%	Sat	8
		42	0575_CNF	Severe	Severe	40-120%	Unsuit	45
	Operational Burn	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	550
		11	0585_CNF	Moderate	Slight	0-15%	Sat	94
		12	0579_CNF	Moderate	Slight	0-15%	Sat	82
		15	0520_CNF	Severe	Slight	0-15%	Sat	98
		23	0582_CNF	Moderate	Slight	0-15%	Sat	125
			0586_CNF	Moderate	Slight	0-15%	Sat	47
		32	0565_CNF	Severe	Severe	15-40%	Sat	7
			0584_CNF	Severe	Severe	15-40%	Sat	35
		42	0575_CNF	Severe	Severe	40-120%	Unsuit	15
	Savanna	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	23
		11	0585_CNF	Moderate	Slight	0-15%	Sat	250
		12	0579_CNF	Moderate	Slight	0-15%	Sat	2
		23	0582_CNF	Moderate	Slight	0-15%	Sat	125
			0586_CNF	Moderate	Slight	0-15%	Sat	81
		32	0565_CNF	Severe	Severe	15-40%	Sat	19
			0584_CNF	Severe	Severe	15-40%	Sat	70
Bear Canyon	Aspen Treatment	11	0519_KNF	Moderate	Slight	0-15%	Sat	0
		14	0565_KNF	Severe	Slight	0-15%	Sat	0
		23	0401_KNF	Moderate	Slight	0-15%	Sat	8

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
			0537_KNF	Moderate	Slight	0-15%	Sat	11
		26	0010_KNF	Moderate	Slight	0-5%	Sat	13
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	3
			0525_KNF	Moderate	Severe	15-40%	Unsat	7
		42	0539_KNF	Severe	Severe	40-120%	Unsuit	35
	Burn Only	11	0519_KNF	Moderate	Slight	0-15%	Sat	1
		14	0565_KNF	Severe	Slight	0-15%	Sat	125
		23	0537_KNF	Moderate	Slight	0-15%	Sat	19
		26	0010_KNF	Moderate	Slight	0-5%	Sat	3
		32	0525_KNF	Moderate	Severe	15-40%	Unsat	30
		39	0563_KNF	Moderate	Slight	0-15%	Sat	5
		47	0523_KNF	NA	Severe	15-120%	Unsat	15
	Higher Intensity Mechanical	1	0006_KNF	NA	Slight	0-5%	Sat	3
		6	0507_KNF	NA	Slight	0-15%	Sat	10
		11	0519_KNF	Moderate	Slight	0-15%	Sat	377
		14	0565_KNF	Severe	Slight	0-15%	Sat	115
		20	0407_KNF	Severe	Severe	15-40%	Unsat	2
		23	0401_KNF	Moderate	Slight	0-15%	Sat	73
			0537_KNF	Moderate	Slight	0-15%	Sat	148
		26	0010_KNF	Moderate	Slight	0-5%	Sat	155
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	13
			0525_KNF	Moderate	Severe	15-40%	Unsat	65
		39	0563_KNF	Moderate	Slight	0-15%	Sat	523
		41	0564_KNF	Severe	Severe	15-40%	Unsat	9
		42	0539_KNF	Severe	Severe	40-120%	Unsuit	84

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		46	0543_KNF	NA	Slight	0-15%	Sat	6
		47	0523_KNF	NA	Severe	15-120%	Unsat	4
	Lower Intensity Mechanical	1	0006_KNF	NA	Slight	0-5%	Sat	11
		10	0037_KNF	NA	Slight	0-5%	Sat	7
		11	0519_KNF	Moderate	Slight	0-15%	Sat	931
		14	0565_KNF	Severe	Slight	0-15%	Sat	84
		20	0407_KNF	Severe	Severe	15-40%	Unsat	170
		23	0401_KNF	Moderate	Slight	0-15%	Sat	526
			0537_KNF	Moderate	Slight	0-15%	Sat	1393
		26	0010_KNF	Moderate	Slight	0-5%	Sat	403
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	376
			0525_KNF	Moderate	Severe	15-40%	Unsat	1003
		39	0563_KNF	Moderate	Slight	0-15%	Sat	329
		41	0564_KNF	Severe	Severe	15-40%	Unsat	130
		42	0539_KNF	Severe	Severe	40-120%	Unsuit	160
		47	0523_KNF	NA	Severe	15-120%	Unsat	1
			0541_KNF	NA	Severe	15-120%	Unsuit	0
	No Treatment Proposed	1	0006_KNF	NA	Slight	0-5%	Sat	50
		11	0519_KNF	Moderate	Slight	0-15%	Sat	14
		14	0565_KNF	Severe	Slight	0-15%	Sat	19
		20	0407_KNF	Severe	Severe	15-40%	Unsat	46
		23	0401_KNF	Moderate	Slight	0-15%	Sat	271
			0537_KNF	Moderate	Slight	0-15%	Sat	59
		26	0010_KNF	Moderate	Slight	0-5%	Sat	70

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	98
			0525_KNF	Moderate	Severe	15-40%	Unsat	16
		39	0563_KNF	Moderate	Slight	0-15%	Sat	2
	Operational Burn	1	0006_KNF	NA	Slight	0-5%	Sat	39
		10	0037_KNF	NA	Slight	0-5%	Sat	28
		11	0519_KNF	Moderate	Slight	0-15%	Sat	85
		14	0565_KNF	Severe	Slight	0-15%	Sat	187
		20	0407_KNF	Severe	Severe	15-40%	Unsat	17
		23	0401_KNF	Moderate	Slight	0-15%	Sat	18
			0537_KNF	Moderate	Slight	0-15%	Sat	21
		26	0010_KNF	Moderate	Slight	0-5%	Sat	18
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	8
			0525_KNF	Moderate	Severe	15-40%	Unsat	17
		39	0563_KNF	Moderate	Slight	0-15%	Sat	82
		41	0564_KNF	Severe	Severe	15-40%	Unsat	3
		42	0539_KNF	Severe	Severe	40-120%	Unsuit	33
	Savanna	1	0006_KNF	NA	Slight	0-5%	Sat	31
		11	0519_KNF	Moderate	Slight	0-15%	Sat	21
		14	0565_KNF	Severe	Slight	0-15%	Sat	85
		23	0401_KNF	Moderate	Slight	0-15%	Sat	59
			0537_KNF	Moderate	Slight	0-15%	Sat	0
		26	0010_KNF	Moderate	Slight	0-5%	Sat	40
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	19
			0525_KNF	Moderate	Severe	15-40%	Unsat	25
		39	0563_KNF	Moderate	Slight	0-15%	Sat	41

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		46	0587_KNF	NA	Slight	0-15%	Sat	3
Bear Jaw Canyon	Burn Only	11	0585_CNF	Moderate	Slight	0-15%	Sat	88
		27	0551_CNF	Moderate	Slight	0-15%	Sat	119
		35	0553_CNF	Moderate	Slight	15-40%	Sat	124
		39	0506_CNF	Moderate	Slight	0-15%	Sat	21
		46	0473_CNF	NA	Slight	0-15%	Sat	27
		49	0613_CNF	Severe	Severe	40-120%	Sat	11
	Higher Intensity Mechanical	11	0585_CNF	Moderate	Slight	0-15%	Sat	548
		23	0586_CNF	Moderate	Slight	0-15%	Sat	33
		27	0551_CNF	Moderate	Slight	0-15%	Sat	106
		35	0553_CNF	Moderate	Slight	15-40%	Sat	49
		46	0445_CNF	NA	Slight	0-15%	Sat	2
			0473_CNF	NA	Slight	0-15%	Sat	0
		48	0654_CNF	Moderate	Mod	0-80%	Sat	1
		49	0613_CNF	Severe	Severe	40-120%	Sat	31
	Lower Intensity Mechanical	11	0585_CNF	Moderate	Slight	0-15%	Sat	355
		23	0586_CNF	Moderate	Slight	0-15%	Sat	4
		27	0551_CNF	Moderate	Slight	0-15%	Sat	559
		35	0553_CNF	Moderate	Slight	15-40%	Sat	372
		39	0506_CNF	Moderate	Slight	0-15%	Sat	48
		46	0445_CNF	NA	Slight	0-15%	Sat	5
			0473_CNF	NA	Slight	0-15%	Sat	10
		48	0654_CNF	Moderate	Mod	0-80%	Sat	7
		49	0613_CNF	Severe	Severe	40-120%	Sat	102

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
	No Treatment Proposed	5	0640_CNF	NA	Slight	0-15%	Sat	68
		11	0585_CNF	Moderate	Slight	0-15%	Sat	21
		27	0551_CNF	Moderate	Slight	0-15%	Sat	23
		35	0553_CNF	Moderate	Slight	15-40%	Sat	40
		48	0653_CNF	Moderate	Mod	0-80%	Sat	202
			0654_CNF	Moderate	Mod	0-80%	Sat	991
		49	0613_CNF	Severe	Severe	40-120%	Sat	639
								4642
	Operational Burn	11	0585_CNF	Moderate	Slight	0-15%	Sat	57
		27	0551_CNF	Moderate	Slight	0-15%	Sat	3
		35	0553_CNF	Moderate	Slight	15-40%	Sat	139
		39	0506_CNF	Moderate	Slight	0-15%	Sat	95
		46	0445_CNF	NA	Slight	0-15%	Sat	97
			0473_CNF	NA	Slight	0-15%	Sat	321
	Savanna	11	0585_CNF	Moderate	Slight	0-15%	Sat	308
		23	0586_CNF	Moderate	Slight	0-15%	Sat	2
		35	0553_CNF	Moderate	Slight	15-40%	Sat	73
Big Spring Canyon	Aspen Treatment	11	0519_KNF	Moderate	Slight	0-15%	Sat	14
		23	0401_KNF	Moderate	Slight	0-15%	Sat	23
		26	0010_KNF	Moderate	Slight	0-5%	Sat	12
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	1
			0525_KNF	Moderate	Severe	15-40%	Unsat	10
	Burn Only	1	0006_KNF	NA	Slight	0-5%	Sat	1
		11	0519_KNF	Moderate	Slight	0-15%	Sat	196
		23	0401_KNF	Moderate	Slight	0-15%	Sat	34

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
			0537_KNF	Moderate	Slight	0-15%	Sat	93
		26	0010_KNF	Moderate	Slight	0-5%	Sat	20
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	1
			0525_KNF	Moderate	Severe	15-40%	Unsat	299
		42	0539_KNF	Severe	Severe	40-120%	Unsuit	19
	Grassland Restoration	1	0006_KNF	NA	Slight	0-5%	Sat	86
		8	0518_KNF	NA	Slight	0-15%	Sat	1
		11	0519_KNF	Moderate	Slight	0-15%	Sat	10
		23	0401_KNF	Moderate	Slight	0-15%	Sat	12
			0537_KNF	Moderate	Slight	0-15%	Sat	1
		26	0010_KNF	Moderate	Slight	0-5%	Sat	2
	Higher Intensity Mechanical	1	0006_KNF	NA	Slight	0-5%	Sat	102
		8	0518_KNF	NA	Slight	0-15%	Sat	4
		9	0020_KNF	NA	Slight	0-5%	Sat	0
		11	0519_KNF	Moderate	Slight	0-15%	Sat	4013
		23	0401_KNF	Moderate	Slight	0-15%	Sat	670
			0537_KNF	Moderate	Slight	0-15%	Sat	1828
		26	0010_KNF	Moderate	Slight	0-5%	Sat	108
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	152
			0525_KNF	Moderate	Severe	15-40%	Unsat	511
		42	0539_KNF	Severe	Severe	40-120%	Unsuit	0
		49	0540_KNF	Severe	Severe	40-120%	Unsat	4
	Lower Intensity Mechanical	1	0006_KNF	NA	Slight	0-5%	Sat	17
		11	0519_KNF	Moderate	Slight	0-15%	Sat	1075

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		20	0407_KNF	Severe	Severe	15-40%	Unsat	38
		23	0401_KNF	Moderate	Slight	0-15%	Sat	844
			0537_KNF	Moderate	Slight	0-15%	Sat	674
		26	0010_KNF	Moderate	Slight	0-5%	Sat	95
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	741
			0525_KNF	Moderate	Severe	15-40%	Unsat	908
		39	0563_KNF	Moderate	Slight	0-15%	Sat	12
		42	0539_KNF	Severe	Severe	40-120%	Unsuit	7
		49	0540_KNF	Severe	Severe	40-120%	Unsat	2
	No Treatment Proposed	1	0006_KNF	NA	Slight	0-5%	Sat	753
		3	0513_KNF	NA	Slight	0-15%	Sat	971
		8	0518_KNF	NA	Slight	0-15%	Sat	104
		9	0020_KNF	NA	Slight	0-5%	Sat	88
		11	0519_KNF	Moderate	Slight	0-15%	Sat	6064
		19	0406_KNF	Severe	Severe	15-40%	Unsat	401
		20	0407_KNF	Severe	Severe	15-40%	Unsat	10
		23	0401_KNF	Moderate	Slight	0-15%	Sat	1563
			0537_KNF	Moderate	Slight	0-15%	Sat	2733
		26	0010_KNF	Moderate	Slight	0-5%	Sat	165
		27	0324_KNF	Moderate	Slight	0-15%	Sat	399
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	1163
			0525_KNF	Moderate	Severe	15-40%	Unsat	1175
		33	0310_KNF	Moderate	Mod	15-40%	Sat	6
		39	0405_KNF	Moderate	Slight	0-15%	Sat	34
		41	0311_KNF	Severe	Severe	15-40%	Unsat	311

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		42	0539_KNF	Severe	Severe	40-120%	Unsuit	6
	Operational Burn	1	0006_KNF	NA	Slight	0-5%	Sat	366
		8	0518_KNF	NA	Slight	0-15%	Sat	50
		9	0020_KNF	NA	Slight	0-5%	Sat	17
		11	0519_KNF	Moderate	Slight	0-15%	Sat	62
		20	0407_KNF	Severe	Severe	15-40%	Unsat	8
		23	0401_KNF	Moderate	Slight	0-15%	Sat	129
			0537_KNF	Moderate	Slight	0-15%	Sat	180
		26	0010_KNF	Moderate	Slight	0-5%	Sat	19
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	37
			0525_KNF	Moderate	Severe	15-40%	Unsat	32
	Savanna	1	0006_KNF	NA	Slight	0-5%	Sat	108
		8	0518_KNF	NA	Slight	0-15%	Sat	23
		11	0519_KNF	Moderate	Slight	0-15%	Sat	774
		23	0401_KNF	Moderate	Slight	0-15%	Sat	285
			0537_KNF	Moderate	Slight	0-15%	Sat	347
		26	0010_KNF	Moderate	Slight	0-5%	Sat	122
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	33
			0525_KNF	Moderate	Severe	15-40%	Unsat	55
		49	0540_KNF	Severe	Severe	40-120%	Unsat	2
Cataract Creek Headwaters	Aspen Treatment	9	0020_KNF	NA	Slight	0-5%	Sat	1
		41	0564_KNF	Severe	Severe	15-40%	Unsat	0
	Burn Only	6	0507_KNF	NA	Slight	0-15%	Sat	91
		19	0406_KNF	Severe	Severe	15-40%	Unsat	8
		23	0401_KNF	Moderate	Slight	0-15%	Sat	7

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		39	0405_KNF	Moderate	Slight	0-15%	Sat	5
			0563_KNF	Moderate	Slight	0-15%	Sat	8
		41	0564_KNF	Severe	Severe	15-40%	Unsat	0
		46	0514_KNF	NA	Slight	0-15%	Sat	1
	Grassland Restoration	6	0507_KNF	NA	Slight	0-15%	Sat	441
		11	0519_KNF	Moderate	Slight	0-15%	Sat	6
		14	0565_KNF	Severe	Slight	0-15%	Sat	4
		23	0401_KNF	Moderate	Slight	0-15%	Sat	0
			0537_KNF	Moderate	Slight	0-15%	Sat	3
		26	0010_KNF	Moderate	Slight	0-5%	Sat	20
		32	0525_KNF	Moderate	Severe	15-40%	Unsat	2
		39	0563_KNF	Moderate	Slight	0-15%	Sat	6
		41	0564_KNF	Severe	Severe	15-40%	Unsat	25
		46	0514_KNF	NA	Slight	0-15%	Sat	10
	Higher Intensity Mechanical	6	0507_KNF	NA	Slight	0-15%	Sat	26
		9	0020_KNF	NA	Slight	0-5%	Sat	6
		11	0519_KNF	Moderate	Slight	0-15%	Sat	8
		14	0565_KNF	Severe	Slight	0-15%	Sat	68
		19	0406_KNF	Severe	Severe	15-40%	Unsat	5
		23	0401_KNF	Moderate	Slight	0-15%	Sat	455
			0537_KNF	Moderate	Slight	0-15%	Sat	49
		26	0010_KNF	Moderate	Slight	0-5%	Sat	41
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	0
		39	0405_KNF	Moderate	Slight	0-15%	Sat	15

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
			0563_KNF	Moderate	Slight	0-15%	Sat	181
		41	0564_KNF	Severe	Severe	15-40%	Unsat	106
		46	0514_KNF	NA	Slight	0-15%	Sat	1
	Lower Intensity Mechanical	6	0507_KNF	NA	Slight	0-15%	Sat	0
		11	0519_KNF	Moderate	Slight	0-15%	Sat	1
		19	0406_KNF	Severe	Severe	15-40%	Unsat	4
		23	0401_KNF	Moderate	Slight	0-15%	Sat	2
			0537_KNF	Moderate	Slight	0-15%	Sat	11
		39	0405_KNF	Moderate	Slight	0-15%	Sat	18
			0563_KNF	Moderate	Slight	0-15%	Sat	1
	No Treatment Proposed	1	0006_KNF	NA	Slight	0-5%	Sat	446
		6	0036_KNF	NA	Slight	0-15%	Sat	175
			0507_KNF	NA	Slight	0-15%	Sat	575
		9	0020_KNF	NA	Slight	0-5%	Sat	1145
		10	0037_KNF	NA	Slight	0-5%	Sat	79
		11	0519_KNF	Moderate	Slight	0-15%	Sat	321
		14	0565_KNF	Severe	Slight	0-15%	Sat	4
		19	0406_KNF	Severe	Severe	15-40%	Unsat	110
		20	0407_KNF	Severe	Severe	15-40%	Unsat	145
		23	0401_KNF	Moderate	Slight	0-15%	Sat	2709
			0537_KNF	Moderate	Slight	0-15%	Sat	795
		26	0010_KNF	Moderate	Slight	0-5%	Sat	223
		27	0324_KNF	Moderate	Slight	0-15%	Sat	1375
		29	0325_KNF	Moderate	Slight	0-15%	Sat	24

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	1001
			0525_KNF	Moderate	Severe	15-40%	Unsat	308
		33	0310_KNF	Moderate	Mod	15-40%	Sat	239
		39	0563_KNF	Moderate	Slight	0-15%	Sat	79
		41	0564_KNF	Severe	Severe	15-40%	Unsat	93
		42	0320_KNF	Severe	Severe	40-120%	Unsuit	217
			0539_KNF	Severe	Severe	40-120%	Unsuit	52
		45	0660_KNF	Severe	Severe	40-120%	Sat/Unsuit	621
		46	0514_KNF	NA	Slight	0-15%	Sat	205
		47	0523_KNF	NA	Severe	15-120%	Unsat	61
		48	0302_KNF	Moderate	Severe	0-80%	Sat	55
			0322_KNF	Severe	Severe	0-80%	Sat	1178
								973
	Operational Burn	1	0006_KNF	NA	Slight	0-5%	Sat	12
		6	0036_KNF	NA	Slight	0-15%	Sat	0
			0507_KNF	NA	Slight	0-15%	Sat	405
		9	0020_KNF	NA	Slight	0-5%	Sat	80
		11	0519_KNF	Moderate	Slight	0-15%	Sat	58
		14	0565_KNF	Severe	Slight	0-15%	Sat	53
		19	0406_KNF	Severe	Severe	15-40%	Unsat	179
		23	0401_KNF	Moderate	Slight	0-15%	Sat	30
			0537_KNF	Moderate	Slight	0-15%	Sat	39
		26	0010_KNF	Moderate	Slight	0-5%	Sat	1
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	60
			0525_KNF	Moderate	Severe	15-40%	Unsat	11

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		39	0405_KNF	Moderate	Slight	0-15%	Sat	23
			0563_KNF	Moderate	Slight	0-15%	Sat	57
		41	0564_KNF	Severe	Severe	15-40%	Unsat	40
		46	0514_KNF	NA	Slight	0-15%	Sat	54
		47	0523_KNF	NA	Severe	15-120%	Unsat	16
	Savanna	6	0507_KNF	NA	Slight	0-15%	Sat	24
		11	0519_KNF	Moderate	Slight	0-15%	Sat	21
		23	0401_KNF	Moderate	Slight	0-15%	Sat	55
			0537_KNF	Moderate	Slight	0-15%	Sat	12
		26	0010_KNF	Moderate	Slight	0-5%	Sat	20
		32	0525_KNF	Moderate	Severe	15-40%	Unsat	2
		39	0405_KNF	Moderate	Slight	0-15%	Sat	1
			0563_KNF	Moderate	Slight	0-15%	Sat	82
		41	0564_KNF	Severe	Severe	15-40%	Unsat	15
Cedar Creek	Burn Only	32	0525_KNF	Moderate	Severe	15-40%	Unsat	21
		39	0563_KNF	Moderate	Slight	0-15%	Sat	14
			0649_KNF	Moderate	Mod	0-15%	Sat	9
		41	0564_KNF	Severe	Severe	15-40%	Unsat	3
		47	0541_KNF	NA	Severe	15-120%	Unsuit	1
	Grassland Restoration	14	0565_KNF	Severe	Slight	0-15%	Sat	1
		32	0525_KNF	Moderate	Severe	15-40%	Unsat	1
		39	0563_KNF	Moderate	Slight	0-15%	Sat	18
			0649_KNF	Moderate	Mod	0-15%	Sat	117
		41	0564_KNF	Severe	Severe	15-40%	Unsat	7
		47	0589_KNF	NA	Mod	15-120%	Unsat	2

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
	Higher Intensity Mechanical	14	0565_KNF	Severe	Slight	0-15%	Sat	37
		23	0537_KNF	Moderate	Slight	0-15%	Sat	1
		26	0010_KNF	Moderate	Slight	0-5%	Sat	18
		32	0525_KNF	Moderate	Severe	15-40%	Unsat	1
		39	0563_KNF	Moderate	Slight	0-15%	Sat	115
			0649_KNF	Moderate	Mod	0-15%	Sat	22
		41	0564_KNF	Severe	Severe	15-40%	Unsat	196
		46	0543_KNF	NA	Slight	0-15%	Sat	20
		47	0523_KNF	NA	Severe	15-120%	Unsat	5
			0541_KNF	NA	Severe	15-120%	Unsuit	1
	Lower Intensity Mechanical	14	0565_KNF	Severe	Slight	0-15%	Sat	8
		23	0537_KNF	Moderate	Slight	0-15%	Sat	10
		26	0010_KNF	Moderate	Slight	0-5%	Sat	15
		32	0525_KNF	Moderate	Severe	15-40%	Unsat	82
		39	0563_KNF	Moderate	Slight	0-15%	Sat	41
			0649_KNF	Moderate	Mod	0-15%	Sat	13
		41	0564_KNF	Severe	Severe	15-40%	Unsat	9
		47	0523_KNF	NA	Severe	15-120%	Unsat	2
	No Treatment Proposed	39	0563_KNF	Moderate	Slight	0-15%	Sat	1
			0649_KNF	Moderate	Mod	0-15%	Sat	3
		41	0564_KNF	Severe	Severe	15-40%	Unsat	5
		47	0523_KNF	NA	Severe	15-120%	Unsat	10
	Operational Burn	14	0565_KNF	Severe	Slight	0-15%	Sat	7
		26	0010_KNF	Moderate	Slight	0-5%	Sat	4

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		32	0525_KNF	Moderate	Severe	15-40%	Unsat	2
		39	0563_KNF	Moderate	Slight	0-15%	Sat	16
			0649_KNF	Moderate	Mod	0-15%	Sat	3
		41	0564_KNF	Severe	Severe	15-40%	Unsat	35
		47	0523_KNF	NA	Severe	15-120%	Unsat	21
			0541_KNF	NA	Severe	15-120%	Unsuit	1
	Savanna	14	0565_KNF	Severe	Slight	0-15%	Sat	13
		19	0406_KNF	Severe	Severe	15-40%	Unsat	17
		23	0537_KNF	Moderate	Slight	0-15%	Sat	5
		26	0010_KNF	Moderate	Slight	0-5%	Sat	1
		32	0525_KNF	Moderate	Severe	15-40%	Unsat	7
		39	0563_KNF	Moderate	Slight	0-15%	Sat	59
			0649_KNF	Moderate	Mod	0-15%	Sat	9
		41	0564_KNF	Severe	Severe	15-40%	Unsat	11
		47	0496_KNF	NA	Mod	15-120%	Unsat	1
			0523_KNF	NA	Severe	15-120%	Unsat	1
Cherry Canyon-Walnut Creek	Burn Only	22	0527_CNF	Moderate	Mod	15-40%	Sat	40
		25	0567_CNF	Severe	Slight	0-15%	Sat	5
		32	0550_CNF	Moderate	Mod	15-40%	Sat	4
		39	0500_CNF	Severe	Slight	0-15%	Sat	137
		44	0555_CNF	Severe	Severe	40-120%	Sat	36
		47	0455_CNF	NA	Severe	15-120%	Unsuit	112
	Higher Intensity Mechanical	1	0053_CNF	NA	Slight	0-5%	Sat	69
		11	0585_CNF	Moderate	Slight	0-15%	Sat	53
		22	0527_CNF	Moderate	Mod	15-40%	Sat	111

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		23	0586_CNF	Moderate	Slight	0-15%	Sat	1
		25	0567_CNF	Severe	Slight	0-15%	Sat	104
		27	0536_CNF	Severe	Slight	0-15%	Sat	1272
		32	0550_CNF	Moderate	Mod	15-40%	Sat	71
		36	0537_CNF	Severe	Mod	15-40%	Sat	1350
		39	0500_CNF	Severe	Slight	0-15%	Sat	2
			0523_CNF	Severe	Slight	0-15%	Sat	12
		41	0524_CNF	Severe	Severe	15-40%	Sat	68
		42	0575_CNF	Severe	Severe	40-120%	Unsuit	11
		44	0555_CNF	Severe	Severe	40-120%	Sat	131
		47	0455_CNF	NA	Severe	15-120%	Unsuit	14
								2
	Lower Intensity Mechanical	1	0053_CNF	NA	Slight	0-5%	Sat	13
		11	0585_CNF	Moderate	Slight	0-15%	Sat	19
		22	0527_CNF	Moderate	Mod	15-40%	Sat	425
		25	0567_CNF	Severe	Slight	0-15%	Sat	645
		27	0536_CNF	Severe	Slight	0-15%	Sat	193
		32	0550_CNF	Moderate	Mod	15-40%	Sat	323
		36	0537_CNF	Severe	Mod	15-40%	Sat	157
		39	0500_CNF	Severe	Slight	0-15%	Sat	987
			0523_CNF	Severe	Slight	0-15%	Sat	0
		41	0524_CNF	Severe	Severe	15-40%	Sat	10
		44	0555_CNF	Severe	Severe	40-120%	Sat	69
		46	0490_CNF	NA	Slight	0-15%	Sat	3
		47	0439_CNF	NA	Mod	15-120%	Sat	5

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
			0455_CNF	NA	Severe	15-120%	Unsuit	160
								0
	No Treatment Proposed	1	0053_CNF	NA	Slight	0-5%	Sat	683
		2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	190
		11	0585_CNF	Moderate	Slight	0-15%	Sat	245
		12	0579_CNF	Moderate	Slight	0-15%	Sat	620
		19	0515_CNF	NA	Mod	15-40%	Unsat	50
		22	0527_CNF	Moderate	Mod	15-40%	Sat	228
		23	0582_CNF	Moderate	Slight	0-15%	Sat	192
			0586_CNF	Moderate	Slight	0-15%	Sat	196
		25	0567_CNF	Severe	Slight	0-15%	Sat	1666
		27	0536_CNF	Severe	Slight	0-15%	Sat	4238
		32	0550_CNF	Moderate	Mod	15-40%	Sat	2828
			0565_CNF	Severe	Severe	15-40%	Sat	128
			0584_CNF	Severe	Severe	15-40%	Sat	385
		36	0537_CNF	Severe	Mod	15-40%	Sat	907
		39	0500_CNF	Severe	Slight	0-15%	Sat	626
			0523_CNF	Severe	Slight	0-15%	Sat	444
		41	0524_CNF	Severe	Severe	15-40%	Sat	347
		42	0575_CNF	Severe	Severe	40-120%	Unsuit	40
		44	0555_CNF	Severe	Severe	40-120%	Sat	1141
		47	0439_CNF	NA	Mod	15-120%	Sat	6
			0455_CNF	NA	Severe	15-120%	Unsuit	248
								46
	Operational Burn	1	0053_CNF	NA	Slight	0-5%	Sat	123

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		11	0585_CNF	Moderate	Slight	0-15%	Sat	9
		22	0527_CNF	Moderate	Mod	15-40%	Sat	133
		25	0567_CNF	Severe	Slight	0-15%	Sat	8
		27	0536_CNF	Severe	Slight	0-15%	Sat	124
		32	0550_CNF	Moderate	Mod	15-40%	Sat	83
		36	0537_CNF	Severe	Mod	15-40%	Sat	95
		39	0500_CNF	Severe	Slight	0-15%	Sat	22
			0523_CNF	Severe	Slight	0-15%	Sat	13
		41	0524_CNF	Severe	Severe	15-40%	Sat	92
		44	0555_CNF	Severe	Severe	40-120%	Sat	25
		47	0439_CNF	NA	Mod	15-120%	Sat	230
			0455_CNF	NA	Severe	15-120%	Unsuit	82
	Savanna	22	0527_CNF	Moderate	Mod	15-40%	Sat	23
		25	0567_CNF	Severe	Slight	0-15%	Sat	14
		27	0536_CNF	Severe	Slight	0-15%	Sat	6
		32	0550_CNF	Moderate	Mod	15-40%	Sat	7
		39	0500_CNF	Severe	Slight	0-15%	Sat	2
		41	0524_CNF	Severe	Severe	15-40%	Sat	0
Cinder Basin	Burn Only	21	0015_CNF	Slight	Slight	15-40%	NA/Sat	56
			0511_CNF	Moderate	Mod	15-40%	Sat	200
			0513_CNF	Moderate	Mod	15-40%	Unsat	635
		30	0559_CNF	Slight	Slight	0-15%	Sat	2287
		31	0561_CNF	Moderate	Mod	15-40%	Sat	1115
		40	0510_CNF	Slight	Slight	0-15%	Sat	1563
			0512_CNF	Slight	Slight	0-15%	Sat	207

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		46	0426_CNF	NA	Slight	0-15%	Sat	50
			0433_CNF	NA	Slight	0-15%	Sat	0
			0443_CNF	NA	Slight	0-15%	Sat	65
		47	0427_CNF	NA	Mod	15-120%	Sat	13
			0441_CNF	NA	Mod	15-120%	Sat	149
	Operational Burn	21	0015_CNF	Slight	Slight	15-40%	NA/Sat	236
			0511_CNF	Moderate	Mod	15-40%	Sat	106
			0513_CNF	Moderate	Mod	15-40%	Unsat	380
		30	0559_CNF	Slight	Slight	0-15%	Sat	82
		31	0561_CNF	Moderate	Mod	15-40%	Sat	295
		40	0510_CNF	Slight	Slight	0-15%	Sat	177
			0512_CNF	Slight	Slight	0-15%	Sat	0
		46	0426_CNF	NA	Slight	0-15%	Sat	6
			0433_CNF	NA	Slight	0-15%	Sat	129
		47	0427_CNF	NA	Mod	15-120%	Sat	58
			0441_CNF	NA	Mod	15-120%	Sat	393
CNF Wash Headwaters	Burn Only	1	0009_KNF	NA	Slight	0-5%	Sat	254
			0011_KNF	NA	Slight	0-5%	Sat	6
		11	0265_KNF	Moderate	Mod	0-15%	Sat	1832
		13	0275_KNF	Moderate	Slight	0-15%	Sat	956
		16	0276_KNF	Severe	Severe	15-40%	Unsat	40
		17	0266_KNF	Moderate	Severe	15-40%	Unsat	181
		23	0290_KNF	Moderate	Slight	0-15%	Sat	1940
			0293_KNF	Moderate	Slight	0-15%	Sat	23
		33	0291_KNF	Moderate	Mod	15-40%	Unsat	132

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		37	0283_KNF	Moderate	Slight	0-15%	Sat	257
	Higher Intensity Mechanical	1	0009_KNF	NA	Slight	0-5%	Sat	72
		11	0265_KNF	Moderate	Mod	0-15%	Sat	1036
		13	0275_KNF	Moderate	Slight	0-15%	Sat	117
		16	0276_KNF	Severe	Severe	15-40%	Unsat	0
		17	0266_KNF	Moderate	Severe	15-40%	Unsat	52
		23	0290_KNF	Moderate	Slight	0-15%	Sat	554
		33	0291_KNF	Moderate	Mod	15-40%	Unsat	9
		37	0283_KNF	Moderate	Slight	0-15%	Sat	22
	Lower Intensity Mechanical	1	0009_KNF	NA	Slight	0-5%	Sat	317
			0011_KNF	NA	Slight	0-5%	Sat	9
		11	0265_KNF	Moderate	Mod	0-15%	Sat	7044
		13	0275_KNF	Moderate	Slight	0-15%	Sat	1806
		16	0276_KNF	Severe	Severe	15-40%	Unsat	33
		17	0266_KNF	Moderate	Severe	15-40%	Unsat	869
		23	0290_KNF	Moderate	Slight	0-15%	Sat	5077
			0293_KNF	Moderate	Slight	0-15%	Sat	21
		32	0294_KNF	Moderate	Severe	15-40%	Sat	17
		33	0291_KNF	Moderate	Mod	15-40%	Unsat	358
		37	0283_KNF	Moderate	Slight	0-15%	Sat	74
	No Treatment Proposed	1	0009_KNF	NA	Slight	0-5%	Sat	238
			0011_KNF	NA	Slight	0-5%	Sat	41
		11	0265_KNF	Moderate	Mod	0-15%	Sat	63
		13	0275_KNF	Moderate	Slight	0-15%	Sat	36

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		16	0276_KNF	Severe	Severe	15-40%	Unsat	4
		17	0266_KNF	Moderate	Severe	15-40%	Unsat	0
		23	0290_KNF	Moderate	Slight	0-15%	Sat	102
		37	0283_KNF	Moderate	Slight	0-15%	Sat	7
	Operational Burn	1	0009_KNF	NA	Slight	0-5%	Sat	37
			0011_KNF	NA	Slight	0-5%	Sat	5
		11	0265_KNF	Moderate	Mod	0-15%	Sat	11
		13	0275_KNF	Moderate	Slight	0-15%	Sat	774
		16	0276_KNF	Severe	Severe	15-40%	Unsat	22
		17	0266_KNF	Moderate	Severe	15-40%	Unsat	20
		23	0290_KNF	Moderate	Slight	0-15%	Sat	34
		37	0283_KNF	Moderate	Slight	0-15%	Sat	43
	Pine Sage	1	0009_KNF	NA	Slight	0-5%	Sat	1
			0011_KNF	NA	Slight	0-5%	Sat	14
		11	0265_KNF	Moderate	Mod	0-15%	Sat	76
		13	0275_KNF	Moderate	Slight	0-15%	Sat	2246
		16	0276_KNF	Severe	Severe	15-40%	Unsat	120
		17	0266_KNF	Moderate	Severe	15-40%	Unsat	0
		23	0290_KNF	Moderate	Slight	0-15%	Sat	125
		37	0283_KNF	Moderate	Slight	0-15%	Sat	418
	WUI PJ Trt	13	0275_KNF	Moderate	Slight	0-15%	Sat	134
		23	0290_KNF	Moderate	Slight	0-15%	Sat	1
		46	0260_KNF	NA	Mod	0-15%	Sat	8
Curley Wallace Tank	Higher Intensity Mechanical	13	0275_KNF	Moderate	Slight	0-15%	Sat	76
		23	0290_KNF	Moderate	Slight	0-15%	Sat	0

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
	Lower Intensity Mechanical	13	0275_KNF	Moderate	Slight	0-15%	Sat	1
		23	0290_KNF	Moderate	Slight	0-15%	Sat	0
Dent and Sayer Tank	Aspen Treatment	11	0519_KNF	Moderate	Slight	0-15%	Sat	1
		29	0325_KNF	Moderate	Slight	0-15%	Sat	1
		36	0300a_KNF	Moderate	Mod	15-40%	Sat	11
			0310a_KNF	Moderate	Mod	15-40%	Sat	0
		48	0302_KNF	Moderate	Severe	0-80%	Sat	2
			0312_KNF	Severe	Severe	0-80%	Unsat	4
	Burn Only	1	0006_KNF	NA	Slight	0-5%	Sat	0
		2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	6
		6	0507_KNF	NA	Slight	0-15%	Sat	455
		10	0037_KNF	NA	Slight	0-5%	Sat	9
		11	0519_KNF	Moderate	Slight	0-15%	Sat	60
		19	0406_KNF	Severe	Severe	15-40%	Unsat	8
			0515_CNF	NA	Mod	15-40%	Unsat	0
		27	0304_KNF	Moderate	Slight	0-15%	Sat	319
			0324_KNF	Moderate	Slight	0-15%	Sat	336
			0401a_KNF	Moderate	Slight	0-15%	Sat	36
			0537a_KNF	Moderate	Slight	0-15%	Sat	182
			0551_CNF	Moderate	Slight	0-15%	Sat	216
			0557a_CNF	Severe	Slight	0-15%	Sat	21
			0582a_CNF	Moderate	Slight	0-15%	Sat	406
		29	0325_KNF	Moderate	Slight	0-15%	Sat	387
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	1
			0525_KNF	Moderate	Severe	15-40%	Unsat	11

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		35	0584a_CNF	Severe	Severe	15-40%	Sat	0
		36	0300a_KNF	Moderate	Mod	15-40%	Sat	231
			0310a_KNF	Moderate	Mod	15-40%	Sat	785
		39	0305_KNF	Moderate	Slight	0-15%	Sat	58
			0405_KNF	Moderate	Slight	0-15%	Sat	49
			0523_CNF	Severe	Slight	0-15%	Sat	1
			0563_KNF	Moderate	Slight	0-15%	Sat	413
		41	0564_KNF	Severe	Severe	15-40%	Unsat	92
		42	0562_CNF	Severe	Severe	40-120%	Sat	23
		46	0599_KNF	NA	Slight	0-15%	Sat	149
		48	0302_KNF	Moderate	Severe	0-80%	Sat	155
			0312_KNF	Severe	Severe	0-80%	Unsat	543
			0322_KNF	Severe	Severe	0-80%	Sat	1
			0614_CNF	Severe	Severe	0-80%	Sat	88
		49	0612_CNF	Severe	Severe	40-120%	Sat	0
			0613_CNF	Severe	Severe	40-120%	Sat	23
								0
	Grassland Restoration	19	0515_CNF	NA	Mod	15-40%	Unsat	20
		39	0523_CNF	Severe	Slight	0-15%	Sat	2
								0
	Higher Intensity Mechanical	6	0507_KNF	NA	Slight	0-15%	Sat	37
		11	0519_KNF	Moderate	Slight	0-15%	Sat	184
		19	0515_CNF	NA	Mod	15-40%	Unsat	30
		27	0324_KNF	Moderate	Slight	0-15%	Sat	10

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
			0401a_KNF	Moderate	Slight	0-15%	Sat	21
			0537a_KNF	Moderate	Slight	0-15%	Sat	139
			0551_CNF	Moderate	Slight	0-15%	Sat	29
			0557a_CNF	Severe	Slight	0-15%	Sat	2
			0582a_CNF	Moderate	Slight	0-15%	Sat	1294
		29	0325_KNF	Moderate	Slight	0-15%	Sat	2
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	62
		35	0584a_CNF	Severe	Severe	15-40%	Sat	58
		36	0300a_KNF	Moderate	Mod	15-40%	Sat	1
			0310a_KNF	Moderate	Mod	15-40%	Sat	20
		39	0305_KNF	Moderate	Slight	0-15%	Sat	23
			0523_CNF	Severe	Slight	0-15%	Sat	531
			0563_KNF	Moderate	Slight	0-15%	Sat	297
		41	0524_CNF	Severe	Severe	15-40%	Sat	23
			0564_KNF	Severe	Severe	15-40%	Unsat	2
		46	0599_KNF	NA	Slight	0-15%	Sat	0
		48	0312_KNF	Severe	Severe	0-80%	Unsat	1
		49	0613_CNF	Severe	Severe	40-120%	Sat	26
								0
	Lower Intensity Mechanical	11	0519_KNF	Moderate	Slight	0-15%	Sat	87
		27	0324_KNF	Moderate	Slight	0-15%	Sat	300
			0537a_KNF	Moderate	Slight	0-15%	Sat	149
			0551_CNF	Moderate	Slight	0-15%	Sat	240
			0557a_CNF	Severe	Slight	0-15%	Sat	0
			0582a_CNF	Moderate	Slight	0-15%	Sat	205

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		29	0325_KNF	Moderate	Slight	0-15%	Sat	8
		36	0300a_KNF	Moderate	Mod	15-40%	Sat	23
			0310a_KNF	Moderate	Mod	15-40%	Sat	155
		39	0305_KNF	Moderate	Slight	0-15%	Sat	97
			0523_CNF	Severe	Slight	0-15%	Sat	16
			0563_KNF	Moderate	Slight	0-15%	Sat	8
		48	0302_KNF	Moderate	Severe	0-80%	Sat	0
			0312_KNF	Severe	Severe	0-80%	Unsat	1
			0614_CNF	Severe	Severe	0-80%	Sat	21
								0
	No Treatment Proposed	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	7
		10	0037_KNF	NA	Slight	0-5%	Sat	99
		11	0519_KNF	Moderate	Slight	0-15%	Sat	0
		27	0324_KNF	Moderate	Slight	0-15%	Sat	6
			0401a_KNF	Moderate	Slight	0-15%	Sat	17
			0551_CNF	Moderate	Slight	0-15%	Sat	86
			0557a_CNF	Severe	Slight	0-15%	Sat	10
		29	0325_KNF	Moderate	Slight	0-15%	Sat	46
		36	0300a_KNF	Moderate	Mod	15-40%	Sat	6
			0310a_KNF	Moderate	Mod	15-40%	Sat	5
		42	0562_CNF	Severe	Severe	40-120%	Sat	19
		48	0302_KNF	Moderate	Severe	0-80%	Sat	595
			0312_KNF	Severe	Severe	0-80%	Unsat	31
			0322_KNF	Severe	Severe	0-80%	Sat	576
			0614_CNF	Severe	Severe	0-80%	Sat	108

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		49	0612_CNF	Severe	Severe	40-120%	Sat	638
			0613_CNF	Severe	Severe	40-120%	Sat	432
								365
	Operational Burn	1	0006_KNF	NA	Slight	0-5%	Sat	23
		2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	6
		6	0036_KNF	NA	Slight	0-15%	Sat	0
			0507_KNF	NA	Slight	0-15%	Sat	69
		10	0037_KNF	NA	Slight	0-5%	Sat	26
		19	0406_KNF	Severe	Severe	15-40%	Unsat	15
			0515_CNF	NA	Mod	15-40%	Unsat	345
		27	0324_KNF	Moderate	Slight	0-15%	Sat	11
			0557a_CNF	Severe	Slight	0-15%	Sat	3
		29	0325_KNF	Moderate	Slight	0-15%	Sat	4
		36	0310a_KNF	Moderate	Mod	15-40%	Sat	27
		39	0305_KNF	Moderate	Slight	0-15%	Sat	11
			0405_KNF	Moderate	Slight	0-15%	Sat	18
			0523_CNF	Severe	Slight	0-15%	Sat	13
			0563_KNF	Moderate	Slight	0-15%	Sat	203
		41	0524_CNF	Severe	Severe	15-40%	Sat	0
			0564_KNF	Severe	Severe	15-40%	Unsat	17
		46	0599_KNF	NA	Slight	0-15%	Sat	101
		48	0312_KNF	Severe	Severe	0-80%	Unsat	2
								0
	Savanna	6	0507_KNF	NA	Slight	0-15%	Sat	6
		10	0037_KNF	NA	Slight	0-5%	Sat	2

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		11	0519_KNF	Moderate	Slight	0-15%	Sat	190
		19	0515_CNF	NA	Mod	15-40%	Unsat	32
		27	0324_KNF	Moderate	Slight	0-15%	Sat	23
			0401a_KNF	Moderate	Slight	0-15%	Sat	98
			0537a_KNF	Moderate	Slight	0-15%	Sat	130
			0582a_CNF	Moderate	Slight	0-15%	Sat	94
		29	0325_KNF	Moderate	Slight	0-15%	Sat	7
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	22
		35	0584a_CNF	Severe	Severe	15-40%	Sat	5
		36	0300a_KNF	Moderate	Mod	15-40%	Sat	1
			0310a_KNF	Moderate	Mod	15-40%	Sat	7
		39	0523_CNF	Severe	Slight	0-15%	Sat	219
			0563_KNF	Moderate	Slight	0-15%	Sat	10
		48	0302_KNF	Moderate	Severe	0-80%	Sat	14
								0
Devil Dog Canyon	Burn Only	11	0519_KNF	Moderate	Slight	0-15%	Sat	14
		23	0537_KNF	Moderate	Slight	0-15%	Sat	0
		39	0563_KNF	Moderate	Slight	0-15%	Sat	0
		41	0564_KNF	Severe	Severe	15-40%	Unsat	0
	Grassland Restoration	1	0006_KNF	NA	Slight	0-5%	Sat	6
		6	0507_KNF	NA	Slight	0-15%	Sat	32
		8	0518_KNF	NA	Slight	0-15%	Sat	1
		23	0401_KNF	Moderate	Slight	0-15%	Sat	0
		39	0563_KNF	Moderate	Slight	0-15%	Sat	0
	Higher Intensity	1	0006_KNF	NA	Slight	0-5%	Sat	0

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
	Mechanical							
		6	0507_KNF	NA	Slight	0-15%	Sat	0
		8	0518_KNF	NA	Slight	0-15%	Sat	2
		11	0519_KNF	Moderate	Slight	0-15%	Sat	0
		23	0401_KNF	Moderate	Slight	0-15%	Sat	128
			0537_KNF	Moderate	Slight	0-15%	Sat	106
		26	0010_KNF	Moderate	Slight	0-5%	Sat	0
		32	0525_KNF	Moderate	Severe	15-40%	Unsat	26
		39	0563_KNF	Moderate	Slight	0-15%	Sat	16
		41	0564_KNF	Severe	Severe	15-40%	Unsat	188
		42	0539_KNF	Severe	Severe	40-120%	Unsuit	0
		47	0523_KNF	NA	Severe	15-120%	Unsat	0
	No Treatment Proposed	1	0006_KNF	NA	Slight	0-5%	Sat	45
		6	0507_KNF	NA	Slight	0-15%	Sat	155
		8	0518_KNF	NA	Slight	0-15%	Sat	615
		11	0519_KNF	Moderate	Slight	0-15%	Sat	148
		23	0401_KNF	Moderate	Slight	0-15%	Sat	63
			0537_KNF	Moderate	Slight	0-15%	Sat	114
		26	0010_KNF	Moderate	Slight	0-5%	Sat	129
		27	0324_KNF	Moderate	Slight	0-15%	Sat	346
		32	0525_KNF	Moderate	Severe	15-40%	Unsat	8
		33	0310_KNF	Moderate	Mod	15-40%	Sat	112
		39	0405_KNF	Moderate	Slight	0-15%	Sat	24
		41	0564_KNF	Severe	Severe	15-40%	Unsat	236
		45	0660_KNF	Severe	Severe	40-120%	Sat/Unsuit	51

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
								2
	Operational Burn	6	0507_KNF	NA	Slight	0-15%	Sat	10
		8	0518_KNF	NA	Slight	0-15%	Sat	32
		11	0519_KNF	Moderate	Slight	0-15%	Sat	27
		23	0537_KNF	Moderate	Slight	0-15%	Sat	0
		39	0563_KNF	Moderate	Slight	0-15%	Sat	162
		41	0564_KNF	Severe	Severe	15-40%	Unsat	0
		42	0539_KNF	Severe	Severe	40-120%	Unsuit	0
		46	0514_KNF	NA	Slight	0-15%	Sat	0
	Savanna	6	0507_KNF	NA	Slight	0-15%	Sat	0
		23	0537_KNF	Moderate	Slight	0-15%	Sat	26
		26	0010_KNF	Moderate	Slight	0-5%	Sat	22
Dogtown Wash	Burn Only	6	0507_KNF	NA	Slight	0-15%	Sat	2
		11	0519_KNF	Moderate	Slight	0-15%	Sat	62
		19	0406_KNF	Severe	Severe	15-40%	Unsat	14
		23	0537_KNF	Moderate	Slight	0-15%	Sat	110
		32	0525_KNF	Moderate	Severe	15-40%	Unsat	16
		39	0405_KNF	Moderate	Slight	0-15%	Sat	11
			0563_KNF	Moderate	Slight	0-15%	Sat	59
		41	0564_KNF	Severe	Severe	15-40%	Unsat	7
		47	0496_KNF	NA	Mod	15-120%	Unsat	14
								1
	Grassland Restoration	1	0006_KNF	NA	Slight	0-5%	Sat	14
		3	0513_KNF	NA	Slight	0-15%	Sat	27
		6	0507_KNF	NA	Slight	0-15%	Sat	517

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		11	0519_KNF	Moderate	Slight	0-15%	Sat	5
		23	0401_KNF	Moderate	Slight	0-15%	Sat	14
			0537_KNF	Moderate	Slight	0-15%	Sat	48
		32	0525_KNF	Moderate	Severe	15-40%	Unsat	1
		39	0405_KNF	Moderate	Slight	0-15%	Sat	13
			0563_KNF	Moderate	Slight	0-15%	Sat	15
		41	0564_KNF	Severe	Severe	15-40%	Unsat	4
	Higher Intensity Mechanical	1	0006_KNF	NA	Slight	0-5%	Sat	2
		3	0513_KNF	NA	Slight	0-15%	Sat	8
		6	0507_KNF	NA	Slight	0-15%	Sat	32
		11	0519_KNF	Moderate	Slight	0-15%	Sat	87
		19	0406_KNF	Severe	Severe	15-40%	Unsat	51
		23	0401_KNF	Moderate	Slight	0-15%	Sat	311
			0537_KNF	Moderate	Slight	0-15%	Sat	650
		27	0324_KNF	Moderate	Slight	0-15%	Sat	1
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	120
			0525_KNF	Moderate	Severe	15-40%	Unsat	50
		39	0405_KNF	Moderate	Slight	0-15%	Sat	118
			0563_KNF	Moderate	Slight	0-15%	Sat	186
		41	0564_KNF	Severe	Severe	15-40%	Unsat	77
		47	0496_KNF	NA	Mod	15-120%	Unsat	16
								2
	Lower Intensity Mechanical	6	0507_KNF	NA	Slight	0-15%	Sat	27
		11	0519_KNF	Moderate	Slight	0-15%	Sat	1

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		23	0401_KNF	Moderate	Slight	0-15%	Sat	102
			0537_KNF	Moderate	Slight	0-15%	Sat	133
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	24
			0525_KNF	Moderate	Severe	15-40%	Unsat	19
		39	0405_KNF	Moderate	Slight	0-15%	Sat	0
			0563_KNF	Moderate	Slight	0-15%	Sat	149
		41	0564_KNF	Severe	Severe	15-40%	Unsat	16
		47	0496_KNF	NA	Mod	15-120%	Unsat	20
								0
	No Treatment Proposed	1	0006_KNF	NA	Slight	0-5%	Sat	971
		3	0513_KNF	NA	Slight	0-15%	Sat	286
		6	0507_KNF	NA	Slight	0-15%	Sat	95
		11	0519_KNF	Moderate	Slight	0-15%	Sat	1153
		20	0407_KNF	Severe	Severe	15-40%	Unsat	146
		23	0401_KNF	Moderate	Slight	0-15%	Sat	1197
			0537_KNF	Moderate	Slight	0-15%	Sat	1154
		26	0010_KNF	Moderate	Slight	0-5%	Sat	404
		27	0324_KNF	Moderate	Slight	0-15%	Sat	556
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	379
			0525_KNF	Moderate	Severe	15-40%	Unsat	159
		33	0310_KNF	Moderate	Mod	15-40%	Sat	299
		39	0405_KNF	Moderate	Slight	0-15%	Sat	4
			0563_KNF	Moderate	Slight	0-15%	Sat	0
		41	0311_KNF	Severe	Severe	15-40%	Unsat	3
			0564_KNF	Severe	Severe	15-40%	Unsat	0

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		42	0320_KNF	Severe	Severe	40-120%	Unsuit	100
		45	0660_KNF	Severe	Severe	40-120%	Sat/Unsuit	65
		47	0496_KNF	NA	Mod	15-120%	Unsat	1
		48	0322_KNF	Severe	Severe	0-80%	Sat	68
								130
	Operational Burn	1	0006_KNF	NA	Slight	0-5%	Sat	14
		3	0513_KNF	NA	Slight	0-15%	Sat	8
		6	0507_KNF	NA	Slight	0-15%	Sat	223
		19	0406_KNF	Severe	Severe	15-40%	Unsat	63
		23	0401_KNF	Moderate	Slight	0-15%	Sat	3
			0537_KNF	Moderate	Slight	0-15%	Sat	30
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	26
		39	0405_KNF	Moderate	Slight	0-15%	Sat	44
			0563_KNF	Moderate	Slight	0-15%	Sat	16
		41	0564_KNF	Severe	Severe	15-40%	Unsat	0
		47	0496_KNF	NA	Mod	15-120%	Unsat	142
								0
	Savanna	3	0513_KNF	NA	Slight	0-15%	Sat	13
		6	0507_KNF	NA	Slight	0-15%	Sat	65
		19	0406_KNF	Severe	Severe	15-40%	Unsat	0
		23	0401_KNF	Moderate	Slight	0-15%	Sat	73
			0537_KNF	Moderate	Slight	0-15%	Sat	192
		39	0405_KNF	Moderate	Slight	0-15%	Sat	105
			0563_KNF	Moderate	Slight	0-15%	Sat	70
		41	0564_KNF	Severe	Severe	15-40%	Unsat	89

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		47	0496_KNF	NA	Mod	15-120%	Unsat	45
								0
Doney Park	Burn Only	6	0566_CNF	NA	Slight	0-15%	Sat	123
		21	0011_CNF	Slight	Slight	15-40%	NA/Sat	16
			0014_CNF	Slight	Slight	15-40%	NA/Sat	187
			0015_CNF	Slight	Slight	15-40%	NA/Sat	87
			0511_CNF	Moderate	Mod	15-40%	Sat	237
			0513_CNF	Moderate	Mod	15-40%	Unsat	648
		27	0551_CNF	Moderate	Slight	0-15%	Sat	749
		28	0560_CNF	Slight	Slight	0-15%	Sat	232
		30	0558_CNF	Slight	Slight	0-15%	Sat	2213
			0559_CNF	Slight	Slight	0-15%	Sat	3437
		31	0561_CNF	Moderate	Mod	15-40%	Sat	747
		35	0553_CNF	Moderate	Slight	15-40%	Sat	121
		40	0512_CNF	Slight	Slight	0-15%	Sat	425
		42	0562_CNF	Severe	Severe	40-120%	Sat	549
			0596_CNF	Severe	Severe	40-120%	Sat	279
		47	0441_CNF	NA	Mod	15-120%	Sat	302
		48	0654_CNF	Moderate	Mod	0-80%	Sat	34
		49	0613_CNF	Severe	Severe	40-120%	Sat	152
	Higher Intensity Mechanical	27	0551_CNF	Moderate	Slight	0-15%	Sat	31
	Lower Intensity Mechanical	27	0551_CNF	Moderate	Slight	0-15%	Sat	503
		35	0553_CNF	Moderate	Slight	15-40%	Sat	67
		42	0596_CNF	Severe	Severe	40-120%	Sat	2

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		48	0654_CNF	Moderate	Mod	0-80%	Sat	232
		49	0613_CNF	Severe	Severe	40-120%	Sat	21
	No Treatment Proposed	5	0640_CNF	NA	Slight	0-15%	Sat	193
		6	0566_CNF	NA	Slight	0-15%	Sat	5098
		21	0011_CNF	Slight	Slight	15-40%	NA/Sat	1035
			0014_CNF	Slight	Slight	15-40%	NA/Sat	291
			0015_CNF	Slight	Slight	15-40%	NA/Sat	353
			0511_CNF	Moderate	Mod	15-40%	Sat	64
			0513_CNF	Moderate	Mod	15-40%	Unsat	286
		27	0551_CNF	Moderate	Slight	0-15%	Sat	11246
		28	0560_CNF	Slight	Slight	0-15%	Sat	197
		30	0558_CNF	Slight	Slight	0-15%	Sat	427
			0559_CNF	Slight	Slight	0-15%	Sat	313
		31	0561_CNF	Moderate	Mod	15-40%	Sat	255
		35	0553_CNF	Moderate	Slight	15-40%	Sat	940
		40	0512_CNF	Slight	Slight	0-15%	Sat	4
		42	0562_CNF	Severe	Severe	40-120%	Sat	1
			0575_CNF	Severe	Severe	40-120%	Unsuit	201
			0596_CNF	Severe	Severe	40-120%	Sat	44
		47	0441_CNF	NA	Mod	15-120%	Sat	125
			0450_CNF	NA	Mod	15-120%	Sat	13
		48	0653_CNF	Moderate	Mod	0-80%	Sat	543
			0654_CNF	Moderate	Mod	0-80%	Sat	1949
		49	0613_CNF	Severe	Severe	40-120%	Sat	2291
								2308

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
	Operational Burn	6	0566_CNF	NA	Slight	0-15%	Sat	312
		21	0011_CNF	Slight	Slight	15-40%	NA/Sat	9
			0014_CNF	Slight	Slight	15-40%	NA/Sat	669
			0015_CNF	Slight	Slight	15-40%	NA/Sat	228
			0511_CNF	Moderate	Mod	15-40%	Sat	93
			0513_CNF	Moderate	Mod	15-40%	Unsat	89
		27	0551_CNF	Moderate	Slight	0-15%	Sat	231
		28	0560_CNF	Slight	Slight	0-15%	Sat	2
		30	0558_CNF	Slight	Slight	0-15%	Sat	38
			0559_CNF	Slight	Slight	0-15%	Sat	218
		31	0561_CNF	Moderate	Mod	15-40%	Sat	68
		35	0553_CNF	Moderate	Slight	15-40%	Sat	20
		40	0512_CNF	Slight	Slight	0-15%	Sat	34
		42	0596_CNF	Severe	Severe	40-120%	Sat	40
		47	0441_CNF	NA	Mod	15-120%	Sat	489
		49	0613_CNF	Severe	Severe	40-120%	Sat	17
Double Cabin Park-Jacks Canyon	Aspen Treatment	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	1
		23	0582_CNF	Moderate	Slight	0-15%	Sat	16
		32	0565_CNF	Severe	Severe	15-40%	Sat	2
		48	0654_CNF	Moderate	Mod	0-80%	Sat	0
	Burn Only	11	0585_CNF	Moderate	Slight	0-15%	Sat	10
		23	0582_CNF	Moderate	Slight	0-15%	Sat	59
		32	0565_CNF	Severe	Severe	15-40%	Sat	127
			0584_CNF	Severe	Severe	15-40%	Sat	6
		48	0654_CNF	Moderate	Mod	0-80%	Sat	29

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
	Higher Intensity Mechanical	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	26
		9	0050_CNF	NA	Slight	0-5%	Sat	7
		11	0585_CNF	Moderate	Slight	0-15%	Sat	202
		23	0582_CNF	Moderate	Slight	0-15%	Sat	308
		32	0565_CNF	Severe	Severe	15-40%	Sat	42
			0584_CNF	Severe	Severe	15-40%	Sat	24
	Lower Intensity Mechanical	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	2
		9	0050_CNF	NA	Slight	0-5%	Sat	1
		11	0585_CNF	Moderate	Slight	0-15%	Sat	156
		23	0582_CNF	Moderate	Slight	0-15%	Sat	222
		32	0565_CNF	Severe	Severe	15-40%	Sat	351
		48	0653_CNF	Moderate	Mod	0-80%	Sat	14
			0654_CNF	Moderate	Mod	0-80%	Sat	3
	No Treatment Proposed	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	1
		11	0585_CNF	Moderate	Slight	0-15%	Sat	0
		23	0582_CNF	Moderate	Slight	0-15%	Sat	3
		32	0565_CNF	Severe	Severe	15-40%	Sat	9
		48	0653_CNF	Moderate	Mod	0-80%	Sat	8
			0654_CNF	Moderate	Mod	0-80%	Sat	123
	Operational Burn	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	39
		11	0585_CNF	Moderate	Slight	0-15%	Sat	6
		23	0582_CNF	Moderate	Slight	0-15%	Sat	11
		48	0653_CNF	Moderate	Mod	0-80%	Sat	4
			0654_CNF	Moderate	Mod	0-80%	Sat	0

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
	Savanna	11	0585_CNF	Moderate	Slight	0-15%	Sat	57
		23	0582_CNF	Moderate	Slight	0-15%	Sat	5
		32	0565_CNF	Severe	Severe	15-40%	Sat	2
			0584_CNF	Severe	Severe	15-40%	Sat	22
Dry Creek	No Treatment Proposed	11	0585_CNF	Moderate	Slight	0-15%	Sat	4
		24	0546_CNF	Severe	Slight	0-15%	Sat	679
		32	0549_CNF	Moderate	Mod	15-40%	Sat	186
			0584_CNF	Severe	Severe	15-40%	Sat	1
		44	0555_CNF	Severe	Severe	40-120%	Sat	167
		47	0471_CNF	NA	Severe	15-120%	Unsuit	78
		48	0651_CNF	Severe	Severe	0-80%	Sat	30
			0654_CNF	Moderate	Mod	0-80%	Sat	11
Fry Canyon	Aspen Treatment	11	0585_CNF	Moderate	Slight	0-15%	Sat	2
		23	0582_CNF	Moderate	Slight	0-15%	Sat	0
	Burn Only	10	0060_CNF	NA	Slight	0-5%	Sat	35
		23	0582_CNF	Moderate	Slight	0-15%	Sat	103
			0586_CNF	Moderate	Slight	0-15%	Sat	2
		24	0546_CNF	Severe	Slight	0-15%	Sat	2
		27	0536_CNF	Severe	Slight	0-15%	Sat	10
		32	0584_CNF	Severe	Severe	15-40%	Sat	20
		44	0555_CNF	Severe	Severe	40-120%	Sat	35
		47	0471_CNF	NA	Severe	15-120%	Unsuit	10
	Grassland Restoration	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	37
		23	0582_CNF	Moderate	Slight	0-15%	Sat	14

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		27	0536_CNF	Severe	Slight	0-15%	Sat	9
	Higher Intensity Mechanical	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	121
		10	0060_CNF	NA	Slight	0-5%	Sat	0
		11	0585_CNF	Moderate	Slight	0-15%	Sat	507
		23	0582_CNF	Moderate	Slight	0-15%	Sat	2082
			0586_CNF	Moderate	Slight	0-15%	Sat	404
		27	0536_CNF	Severe	Slight	0-15%	Sat	468
		32	0584_CNF	Severe	Severe	15-40%	Sat	192
		44	0555_CNF	Severe	Severe	40-120%	Sat	16
	Lower Intensity Mechanical	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	3
		11	0585_CNF	Moderate	Slight	0-15%	Sat	48
		23	0582_CNF	Moderate	Slight	0-15%	Sat	317
			0586_CNF	Moderate	Slight	0-15%	Sat	17
		32	0565_CNF	Severe	Severe	15-40%	Sat	12
			0584_CNF	Severe	Severe	15-40%	Sat	138
		42	0575_CNF	Severe	Severe	40-120%	Unsuit	7
		44	0555_CNF	Severe	Severe	40-120%	Sat	8
		47	0471_CNF	NA	Severe	15-120%	Unsuit	2
	No Treatment Proposed	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	1946
		11	0585_CNF	Moderate	Slight	0-15%	Sat	1181
		23	0582_CNF	Moderate	Slight	0-15%	Sat	7725
			0586_CNF	Moderate	Slight	0-15%	Sat	627
		27	0536_CNF	Severe	Slight	0-15%	Sat	660
		32	0565_CNF	Severe	Severe	15-40%	Sat	131

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
			0584_CNF	Severe	Severe	15-40%	Sat	237
		42	0575_CNF	Severe	Severe	40-120%	Unsuit	176
		44	0555_CNF	Severe	Severe	40-120%	Sat	167
		47	0471_CNF	NA	Severe	15-120%	Unsuit	181
		50	0611_CNF	Moderate	Mod	0-15%	Sat	72
	Operational Burn	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	500
		11	0585_CNF	Moderate	Slight	0-15%	Sat	2
		23	0582_CNF	Moderate	Slight	0-15%	Sat	115
			0586_CNF	Moderate	Slight	0-15%	Sat	4
		27	0536_CNF	Severe	Slight	0-15%	Sat	22
		32	0584_CNF	Severe	Severe	15-40%	Sat	0
	Savanna	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	38
		11	0585_CNF	Moderate	Slight	0-15%	Sat	29
		23	0582_CNF	Moderate	Slight	0-15%	Sat	447
			0586_CNF	Moderate	Slight	0-15%	Sat	50
		27	0536_CNF	Severe	Slight	0-15%	Sat	172
		32	0565_CNF	Severe	Severe	15-40%	Sat	8
			0584_CNF	Severe	Severe	15-40%	Sat	68
Garland Prairie	Aspen Treatment	4	0440_KNF	NA	Slight	15-40%	Unsat	0
		20	0407_KNF	Severe	Severe	15-40%	Unsat	0
		27	0401a_KNF	Moderate	Slight	0-15%	Sat	2
			0537a_KNF	Moderate	Slight	0-15%	Sat	3
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	2
		36	0300a_KNF	Moderate	Mod	15-40%	Sat	0
		42	0320_KNF	Severe	Severe	40-120%	Unsuit	1

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
	Burn Only	1	0006_KNF	NA	Slight	0-5%	Sat	3
		3	0513_KNF	NA	Slight	0-15%	Sat	1
		8	0518_KNF	NA	Slight	0-15%	Sat	2
			0630_KNF	NA	Slight	0-15%	Sat	12
		11	0631_KNF	Moderate	Slight	0-15%	Sat	64
		20	0407_KNF	Severe	Severe	15-40%	Unsat	7
		23	0401_KNF	Moderate	Slight	0-15%	Sat	163
			0537_KNF	Moderate	Slight	0-15%	Sat	16
		27	0401a_KNF	Moderate	Slight	0-15%	Sat	0
		29	0325_KNF	Moderate	Slight	0-15%	Sat	8
		36	0300a_KNF	Moderate	Mod	15-40%	Sat	9
		42	0320_KNF	Severe	Severe	40-120%	Unsuit	2
		48	0322_KNF	Severe	Severe	0-80%	Sat	10
	Grassland Restoration	1	0006_KNF	NA	Slight	0-5%	Sat	11
		3	0513_KNF	NA	Slight	0-15%	Sat	270
		4	0440_KNF	NA	Slight	15-40%	Unsat	1
		8	0518_KNF	NA	Slight	0-15%	Sat	40
			0630_KNF	NA	Slight	0-15%	Sat	51
		11	0519_KNF	Moderate	Slight	0-15%	Sat	22
			0631_KNF	Moderate	Slight	0-15%	Sat	43
		23	0401_KNF	Moderate	Slight	0-15%	Sat	23
			0537_KNF	Moderate	Slight	0-15%	Sat	20
		27	0401a_KNF	Moderate	Slight	0-15%	Sat	6
	Higher Intensity Mechanical	1	0006_KNF	NA	Slight	0-5%	Sat	7

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		3	0513_KNF	NA	Slight	0-15%	Sat	32
		4	0440_KNF	NA	Slight	15-40%	Unsat	0
		8	0518_KNF	NA	Slight	0-15%	Sat	22
			0630_KNF	NA	Slight	0-15%	Sat	2
		11	0519_KNF	Moderate	Slight	0-15%	Sat	537
			0631_KNF	Moderate	Slight	0-15%	Sat	114
		20	0407_KNF	Severe	Severe	15-40%	Unsat	0
		23	0401_KNF	Moderate	Slight	0-15%	Sat	541
			0537_KNF	Moderate	Slight	0-15%	Sat	211
		27	0401a_KNF	Moderate	Slight	0-15%	Sat	424
			0537a_KNF	Moderate	Slight	0-15%	Sat	311
		29	0325_KNF	Moderate	Slight	0-15%	Sat	10
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	222
			0525_KNF	Moderate	Severe	15-40%	Unsat	23
		36	0300a_KNF	Moderate	Mod	15-40%	Sat	34
		42	0320_KNF	Severe	Severe	40-120%	Unsuit	15
		48	0302_KNF	Moderate	Severe	0-80%	Sat	2
			0322_KNF	Severe	Severe	0-80%	Sat	3
	Lower Intensity Mechanical	1	0006_KNF	NA	Slight	0-5%	Sat	1
		3	0513_KNF	NA	Slight	0-15%	Sat	19
		11	0519_KNF	Moderate	Slight	0-15%	Sat	121
			0631_KNF	Moderate	Slight	0-15%	Sat	304
		23	0401_KNF	Moderate	Slight	0-15%	Sat	1068
			0537_KNF	Moderate	Slight	0-15%	Sat	34
		27	0401a_KNF	Moderate	Slight	0-15%	Sat	332

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
			0537a_KNF	Moderate	Slight	0-15%	Sat	3
		29	0325_KNF	Moderate	Slight	0-15%	Sat	65
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	767
			0525_KNF	Moderate	Severe	15-40%	Unsat	13
		36	0300a_KNF	Moderate	Mod	15-40%	Sat	46
	No Treatment Proposed	1	0006_KNF	NA	Slight	0-5%	Sat	512
		3	0513_KNF	NA	Slight	0-15%	Sat	2830
		8	0518_KNF	NA	Slight	0-15%	Sat	946
			0630_KNF	NA	Slight	0-15%	Sat	56
		10	0037_KNF	NA	Slight	0-5%	Sat	30
		11	0519_KNF	Moderate	Slight	0-15%	Sat	459
			0631_KNF	Moderate	Slight	0-15%	Sat	2
		23	0401_KNF	Moderate	Slight	0-15%	Sat	141
			0537_KNF	Moderate	Slight	0-15%	Sat	47
		27	0401a_KNF	Moderate	Slight	0-15%	Sat	115
			0537a_KNF	Moderate	Slight	0-15%	Sat	276
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	10
								3464
	Operational Burn	1	0006_KNF	NA	Slight	0-5%	Sat	521
		3	0513_KNF	NA	Slight	0-15%	Sat	4655
		4	0440_KNF	NA	Slight	15-40%	Unsat	91
		8	0518_KNF	NA	Slight	0-15%	Sat	1750
			0630_KNF	NA	Slight	0-15%	Sat	977
		11	0519_KNF	Moderate	Slight	0-15%	Sat	88
			0631_KNF	Moderate	Slight	0-15%	Sat	24

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		23	0401_KNF	Moderate	Slight	0-15%	Sat	2
			0537_KNF	Moderate	Slight	0-15%	Sat	35
		27	0401a_KNF	Moderate	Slight	0-15%	Sat	45
			0537a_KNF	Moderate	Slight	0-15%	Sat	10
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	0
			0525_KNF	Moderate	Severe	15-40%	Unsat	1
		36	0300a_KNF	Moderate	Mod	15-40%	Sat	2
								0
	Savanna	1	0006_KNF	NA	Slight	0-5%	Sat	19
		3	0513_KNF	NA	Slight	0-15%	Sat	71
		4	0440_KNF	NA	Slight	15-40%	Unsat	1
		8	0518_KNF	NA	Slight	0-15%	Sat	50
			0630_KNF	NA	Slight	0-15%	Sat	13
		11	0519_KNF	Moderate	Slight	0-15%	Sat	362
			0631_KNF	Moderate	Slight	0-15%	Sat	109
		20	0407_KNF	Severe	Severe	15-40%	Unsat	10
		23	0401_KNF	Moderate	Slight	0-15%	Sat	247
			0537_KNF	Moderate	Slight	0-15%	Sat	118
		27	0401a_KNF	Moderate	Slight	0-15%	Sat	321
			0537a_KNF	Moderate	Slight	0-15%	Sat	479
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	92
Government Canyon	Grassland Restoration	39	0563_KNF	Moderate	Slight	0-15%	Sat	2
			0649_KNF	Moderate	Mod	0-15%	Sat	44
		41	0564_KNF	Severe	Severe	15-40%	Unsat	2
		47	0541_KNF	NA	Severe	15-120%	Unsuit	8

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
	Higher Intensity Mechanical	11	0519_KNF	Moderate	Slight	0-15%	Sat	29
		14	0565_KNF	Severe	Slight	0-15%	Sat	119
		23	0537_KNF	Moderate	Slight	0-15%	Sat	272
		26	0010_KNF	Moderate	Slight	0-5%	Sat	56
		32	0525_KNF	Moderate	Severe	15-40%	Unsat	0
		39	0563_KNF	Moderate	Slight	0-15%	Sat	250
			0649_KNF	Moderate	Mod	0-15%	Sat	2
		41	0564_KNF	Severe	Severe	15-40%	Unsat	65
		47	0523_KNF	NA	Severe	15-120%	Unsat	0
			0541_KNF	NA	Severe	15-120%	Unsuit	17
			0589_KNF	NA	Mod	15-120%	Unsat	1
	Lower Intensity Mechanical	11	0519_KNF	Moderate	Slight	0-15%	Sat	8
		14	0565_KNF	Severe	Slight	0-15%	Sat	6
		23	0537_KNF	Moderate	Slight	0-15%	Sat	0
		32	0525_KNF	Moderate	Severe	15-40%	Unsat	1
		39	0563_KNF	Moderate	Slight	0-15%	Sat	66
	Operational Burn	14	0565_KNF	Severe	Slight	0-15%	Sat	20
		23	0537_KNF	Moderate	Slight	0-15%	Sat	3
		39	0563_KNF	Moderate	Slight	0-15%	Sat	20
		47	0541_KNF	NA	Severe	15-120%	Unsuit	3
	Savanna	11	0519_KNF	Moderate	Slight	0-15%	Sat	13
		14	0565_KNF	Severe	Slight	0-15%	Sat	55
		19	0406_KNF	Severe	Severe	15-40%	Unsat	15
		23	0537_KNF	Moderate	Slight	0-15%	Sat	38

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		26	0010_KNF	Moderate	Slight	0-5%	Sat	1
		39	0563_KNF	Moderate	Slight	0-15%	Sat	14
			0649_KNF	Moderate	Mod	0-15%	Sat	11
		41	0564_KNF	Severe	Severe	15-40%	Unsat	22
		47	0541_KNF	NA	Severe	15-120%	Unsuit	4
Government Prairie	Aspen Treatment	3	0595_CNF	NA	Slight	0-15%	Sat	0
		4	0440_KNF	NA	Slight	15-40%	Unsat	0
		20	0407_KNF	Severe	Severe	15-40%	Unsat	3
		27	0401a_KNF	Moderate	Slight	0-15%	Sat	7
			0557a_CNF	Severe	Slight	0-15%	Sat	18
			0582a_CNF	Moderate	Slight	0-15%	Sat	10
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	0
		42	0562_CNF	Severe	Severe	40-120%	Sat	9
		48	0302_KNF	Moderate	Severe	0-80%	Sat	1
	Burn Only	3	0513_KNF	NA	Slight	0-15%	Sat	1
		4	0440_KNF	NA	Slight	15-40%	Unsat	2
		11	0519_KNF	Moderate	Slight	0-15%	Sat	6
			0585_CNF	Moderate	Slight	0-15%	Sat	0
		20	0407_KNF	Severe	Severe	15-40%	Unsat	58
		27	0401a_KNF	Moderate	Slight	0-15%	Sat	10
			0537a_KNF	Moderate	Slight	0-15%	Sat	23
			0557a_CNF	Severe	Slight	0-15%	Sat	0
			0582a_CNF	Moderate	Slight	0-15%	Sat	3
		29	0325_KNF	Moderate	Slight	0-15%	Sat	65
		36	0300a_KNF	Moderate	Mod	15-40%	Sat	24

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		42	0562_CNF	Severe	Severe	40-120%	Sat	132
		48	0302_KNF	Moderate	Severe	0-80%	Sat	5
			0322_KNF	Severe	Severe	0-80%	Sat	14
								0
	Grassland Restoration	1	0006_KNF	NA	Slight	0-5%	Sat	12
		3	0513_KNF	NA	Slight	0-15%	Sat	110
			0595_CNF	NA	Slight	0-15%	Sat	33
		4	0440_KNF	NA	Slight	15-40%	Unsat	27
		20	0407_KNF	Severe	Severe	15-40%	Unsat	1
		27	0401a_KNF	Moderate	Slight	0-15%	Sat	0
			0537a_KNF	Moderate	Slight	0-15%	Sat	19
			0582a_CNF	Moderate	Slight	0-15%	Sat	6
		29	0325_KNF	Moderate	Slight	0-15%	Sat	10
	Higher Intensity Mechanical	1	0006_KNF	NA	Slight	0-5%	Sat	4
		3	0513_KNF	NA	Slight	0-15%	Sat	13
			0595_CNF	NA	Slight	0-15%	Sat	17
		4	0440_KNF	NA	Slight	15-40%	Unsat	3
		11	0519_KNF	Moderate	Slight	0-15%	Sat	53
			0585_CNF	Moderate	Slight	0-15%	Sat	13
		20	0407_KNF	Severe	Severe	15-40%	Unsat	25
		27	0401a_KNF	Moderate	Slight	0-15%	Sat	197
			0537a_KNF	Moderate	Slight	0-15%	Sat	1588
			0557a_CNF	Severe	Slight	0-15%	Sat	54
			0582a_CNF	Moderate	Slight	0-15%	Sat	1945

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		29	0325_KNF	Moderate	Slight	0-15%	Sat	83
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	60
		36	0300a_KNF	Moderate	Mod	15-40%	Sat	28
		42	0562_CNF	Severe	Severe	40-120%	Sat	44
		48	0302_KNF	Moderate	Severe	0-80%	Sat	51
			0322_KNF	Severe	Severe	0-80%	Sat	12
								2
	Lower Intensity Mechanical	3	0513_KNF	NA	Slight	0-15%	Sat	0
			0595_CNF	NA	Slight	0-15%	Sat	6
		7	0594_CNF	NA	Slight	0-15%	Sat	0
		11	0519_KNF	Moderate	Slight	0-15%	Sat	27
		20	0407_KNF	Severe	Severe	15-40%	Unsat	9
		27	0401a_KNF	Moderate	Slight	0-15%	Sat	35
			0537a_KNF	Moderate	Slight	0-15%	Sat	246
			0557a_CNF	Severe	Slight	0-15%	Sat	16
			0582a_CNF	Moderate	Slight	0-15%	Sat	577
		29	0325_KNF	Moderate	Slight	0-15%	Sat	98
		36	0300a_KNF	Moderate	Mod	15-40%	Sat	110
		42	0562_CNF	Severe	Severe	40-120%	Sat	99
								0
	No Treatment Proposed	1	0006_KNF	NA	Slight	0-5%	Sat	125
		3	0513_KNF	NA	Slight	0-15%	Sat	429
			0595_CNF	NA	Slight	0-15%	Sat	68
		4	0440_KNF	NA	Slight	15-40%	Unsat	45

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		20	0407_KNF	Severe	Severe	15-40%	Unsat	36
		27	0401a_KNF	Moderate	Slight	0-15%	Sat	107
			0537a_KNF	Moderate	Slight	0-15%	Sat	291
			0557a_CNF	Severe	Slight	0-15%	Sat	0
			0582a_CNF	Moderate	Slight	0-15%	Sat	131
		29	0325_KNF	Moderate	Slight	0-15%	Sat	4
		36	0300a_KNF	Moderate	Mod	15-40%	Sat	1
		42	0562_CNF	Severe	Severe	40-120%	Sat	130
		48	0302_KNF	Moderate	Severe	0-80%	Sat	54
			0322_KNF	Severe	Severe	0-80%	Sat	1
		49	0612_CNF	Severe	Severe	40-120%	Sat	53
		50	0611_CNF	Moderate	Mod	0-15%	Sat	253
								7234
	Operational Burn	1	0006_KNF	NA	Slight	0-5%	Sat	12
		3	0513_KNF	NA	Slight	0-15%	Sat	2628
			0595_CNF	NA	Slight	0-15%	Sat	501
		4	0440_KNF	NA	Slight	15-40%	Unsat	257
		7	0594_CNF	NA	Slight	0-15%	Sat	126
		20	0407_KNF	Severe	Severe	15-40%	Unsat	25
		27	0401a_KNF	Moderate	Slight	0-15%	Sat	8
			0537a_KNF	Moderate	Slight	0-15%	Sat	110
			0557a_CNF	Severe	Slight	0-15%	Sat	1
			0582a_CNF	Moderate	Slight	0-15%	Sat	80
		29	0325_KNF	Moderate	Slight	0-15%	Sat	2
		36	0300a_KNF	Moderate	Mod	15-40%	Sat	5

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		42	0562_CNF	Severe	Severe	40-120%	Sat	80
								4
	Savanna	3	0513_KNF	NA	Slight	0-15%	Sat	10
			0595_CNF	NA	Slight	0-15%	Sat	45
		4	0440_KNF	NA	Slight	15-40%	Unsat	2
		7	0594_CNF	NA	Slight	0-15%	Sat	0
		20	0407_KNF	Severe	Severe	15-40%	Unsat	50
		27	0401a_KNF	Moderate	Slight	0-15%	Sat	172
			0537a_KNF	Moderate	Slight	0-15%	Sat	258
			0557a_CNF	Severe	Slight	0-15%	Sat	29
			0582a_CNF	Moderate	Slight	0-15%	Sat	926
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	47
		42	0562_CNF	Severe	Severe	40-120%	Sat	34
								0
Grapevine Canyon	Burn Only	11	0585_CNF	Moderate	Slight	0-15%	Sat	85
		23	0582_CNF	Moderate	Slight	0-15%	Sat	12
			0586_CNF	Moderate	Slight	0-15%	Sat	0
		25	0578_CNF	Severe	Slight	0-15%	Sat	81
		32	0565_CNF	Severe	Severe	15-40%	Sat	184
			0584_CNF	Severe	Severe	15-40%	Sat	50
		39	0523_CNF	Severe	Slight	0-15%	Sat	1
	Grassland Restoration	11	0585_CNF	Moderate	Slight	0-15%	Sat	0
		19	0515_CNF	NA	Mod	15-40%	Unsat	30
		41	0524_CNF	Severe	Severe	15-40%	Sat	10
	Higher Intensity	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	5

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
	Mechanical							
		9	0050_CNF	NA	Slight	0-5%	Sat	1
		11	0585_CNF	Moderate	Slight	0-15%	Sat	476
		12	0579_CNF	Moderate	Slight	0-15%	Sat	40
		19	0515_CNF	NA	Mod	15-40%	Unsat	12
		23	0582_CNF	Moderate	Slight	0-15%	Sat	162
			0586_CNF	Moderate	Slight	0-15%	Sat	403
		25	0578_CNF	Severe	Slight	0-15%	Sat	59
		32	0565_CNF	Severe	Severe	15-40%	Sat	1
			0584_CNF	Severe	Severe	15-40%	Sat	64
		39	0523_CNF	Severe	Slight	0-15%	Sat	37
		41	0524_CNF	Severe	Severe	15-40%	Sat	87
	Lower Intensity Mechanical	11	0585_CNF	Moderate	Slight	0-15%	Sat	2
		12	0579_CNF	Moderate	Slight	0-15%	Sat	124
		23	0582_CNF	Moderate	Slight	0-15%	Sat	0
			0586_CNF	Moderate	Slight	0-15%	Sat	1
		25	0578_CNF	Severe	Slight	0-15%	Sat	10
		32	0565_CNF	Severe	Severe	15-40%	Sat	12
		41	0524_CNF	Severe	Severe	15-40%	Sat	11
	Operational Burn	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	25
		9	0050_CNF	NA	Slight	0-5%	Sat	22
		11	0585_CNF	Moderate	Slight	0-15%	Sat	8
		12	0579_CNF	Moderate	Slight	0-15%	Sat	39
		19	0515_CNF	NA	Mod	15-40%	Unsat	282
		23	0582_CNF	Moderate	Slight	0-15%	Sat	12

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
			0586_CNF	Moderate	Slight	0-15%	Sat	14
		25	0578_CNF	Severe	Slight	0-15%	Sat	18
		39	0523_CNF	Severe	Slight	0-15%	Sat	16
		41	0524_CNF	Severe	Severe	15-40%	Sat	0
	Savanna	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	4
		9	0050_CNF	NA	Slight	0-5%	Sat	1
		11	0585_CNF	Moderate	Slight	0-15%	Sat	53
		12	0579_CNF	Moderate	Slight	0-15%	Sat	11
		19	0515_CNF	NA	Mod	15-40%	Unsat	2
		23	0582_CNF	Moderate	Slight	0-15%	Sat	63
			0586_CNF	Moderate	Slight	0-15%	Sat	117
		25	0578_CNF	Severe	Slight	0-15%	Sat	23
		32	0565_CNF	Severe	Severe	15-40%	Sat	36
		39	0523_CNF	Severe	Slight	0-15%	Sat	93
		41	0524_CNF	Severe	Severe	15-40%	Sat	0
Grindstone Wash	Burn Only	11	0519_KNF	Moderate	Slight	0-15%	Sat	4
		14	0565_KNF	Severe	Slight	0-15%	Sat	139
		19	0406_KNF	Severe	Severe	15-40%	Unsat	0
		23	0537_KNF	Moderate	Slight	0-15%	Sat	10
		39	0405_KNF	Moderate	Slight	0-15%	Sat	63
			0563_KNF	Moderate	Slight	0-15%	Sat	0
		41	0564_KNF	Severe	Severe	15-40%	Unsat	1
		46	0587_KNF	NA	Slight	0-15%	Sat	1
		47	0523_KNF	NA	Severe	15-120%	Unsat	0
	Higher Intensity Mechanical	11	0519_KNF	Moderate	Slight	0-15%	Sat	16

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		14	0565_KNF	Severe	Slight	0-15%	Sat	141
		19	0406_KNF	Severe	Severe	15-40%	Unsat	14
		23	0537_KNF	Moderate	Slight	0-15%	Sat	237
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	3
		39	0405_KNF	Moderate	Slight	0-15%	Sat	51
			0563_KNF	Moderate	Slight	0-15%	Sat	24
		41	0564_KNF	Severe	Severe	15-40%	Unsat	123
		46	0587_KNF	NA	Slight	0-15%	Sat	0
		47	0523_KNF	NA	Severe	15-120%	Unsat	0
	Lower Intensity Mechanical	11	0519_KNF	Moderate	Slight	0-15%	Sat	0
		14	0565_KNF	Severe	Slight	0-15%	Sat	99
		23	0537_KNF	Moderate	Slight	0-15%	Sat	62
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	25
		39	0405_KNF	Moderate	Slight	0-15%	Sat	18
			0563_KNF	Moderate	Slight	0-15%	Sat	0
		41	0564_KNF	Severe	Severe	15-40%	Unsat	54
	Operational Burn	11	0519_KNF	Moderate	Slight	0-15%	Sat	1
		14	0565_KNF	Severe	Slight	0-15%	Sat	189
		19	0406_KNF	Severe	Severe	15-40%	Unsat	35
		23	0537_KNF	Moderate	Slight	0-15%	Sat	26
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	9
		39	0405_KNF	Moderate	Slight	0-15%	Sat	101
			0563_KNF	Moderate	Slight	0-15%	Sat	24
		41	0564_KNF	Severe	Severe	15-40%	Unsat	116
	Savanna	19	0406_KNF	Severe	Severe	15-40%	Unsat	1

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		23	0537_KNF	Moderate	Slight	0-15%	Sat	6
		39	0405_KNF	Moderate	Slight	0-15%	Sat	15
			0563_KNF	Moderate	Slight	0-15%	Sat	8
Hance Creek-Colorado River	Lower Intensity Mechanical	11	0265_KNF	Moderate	Mod	0-15%	Sat	1
		23	0290_KNF	Moderate	Slight	0-15%	Sat	35
Jacks Canyon	Burn Only	46	0495_CNF	NA	Slight	0-15%	Sat	1
Johnson Creek	Burn Only	1	0006_KNF	NA	Slight	0-5%	Sat	4
		14	0565_KNF	Severe	Slight	0-15%	Sat	73
		23	0401_KNF	Moderate	Slight	0-15%	Sat	1
			0537_KNF	Moderate	Slight	0-15%	Sat	146
		26	0010_KNF	Moderate	Slight	0-5%	Sat	18
		32	0525_KNF	Moderate	Severe	15-40%	Unsat	1
		39	0563_KNF	Moderate	Slight	0-15%	Sat	41
		41	0564_KNF	Severe	Severe	15-40%	Unsat	4
		49	0625_KNF	Severe	Severe	40-120%	Sat	0
	Grassland Restoration	1	0006_KNF	NA	Slight	0-5%	Sat	22
		6	0507_KNF	NA	Slight	0-15%	Sat	35
		14	0565_KNF	Severe	Slight	0-15%	Sat	13
		23	0401_KNF	Moderate	Slight	0-15%	Sat	15
			0537_KNF	Moderate	Slight	0-15%	Sat	1
		26	0010_KNF	Moderate	Slight	0-5%	Sat	3
		39	0563_KNF	Moderate	Slight	0-15%	Sat	3
	Higher Intensity Mechanical	1	0006_KNF	NA	Slight	0-5%	Sat	10
		6	0507_KNF	NA	Slight	0-15%	Sat	19

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		8	0518_KNF	NA	Slight	0-15%	Sat	4
		11	0519_KNF	Moderate	Slight	0-15%	Sat	55
		14	0565_KNF	Severe	Slight	0-15%	Sat	100
		19	0406_KNF	Severe	Severe	15-40%	Unsat	11
		23	0401_KNF	Moderate	Slight	0-15%	Sat	382
			0537_KNF	Moderate	Slight	0-15%	Sat	324
		26	0010_KNF	Moderate	Slight	0-5%	Sat	7
		32	0525_KNF	Moderate	Severe	15-40%	Unsat	85
		39	0405_KNF	Moderate	Slight	0-15%	Sat	82
			0563_KNF	Moderate	Slight	0-15%	Sat	333
		41	0564_KNF	Severe	Severe	15-40%	Unsat	33
		46	0495_KNF	NA	Slight	0-15%	Sat	0
		47	0496_KNF	NA	Mod	15-120%	Unsat	0
			0523_KNF	NA	Severe	15-120%	Unsat	0
		49	0625_KNF	Severe	Severe	40-120%	Sat	1
	Lower Intensity Mechanical	1	0006_KNF	NA	Slight	0-5%	Sat	0
		6	0507_KNF	NA	Slight	0-15%	Sat	0
		14	0565_KNF	Severe	Slight	0-15%	Sat	0
		23	0401_KNF	Moderate	Slight	0-15%	Sat	15
			0537_KNF	Moderate	Slight	0-15%	Sat	79
		26	0010_KNF	Moderate	Slight	0-5%	Sat	9
		32	0525_KNF	Moderate	Severe	15-40%	Unsat	33
		39	0405_KNF	Moderate	Slight	0-15%	Sat	0
			0563_KNF	Moderate	Slight	0-15%	Sat	0
		49	0625_KNF	Severe	Severe	40-120%	Sat	37

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
	No Treatment Proposed	1	0006_KNF	NA	Slight	0-5%	Sat	68
		6	0507_KNF	NA	Slight	0-15%	Sat	316
		8	0518_KNF	NA	Slight	0-15%	Sat	8
		9	0020_KNF	NA	Slight	0-5%	Sat	0
		14	0565_KNF	Severe	Slight	0-15%	Sat	123
		19	0406_KNF	Severe	Severe	15-40%	Unsat	134
		23	0401_KNF	Moderate	Slight	0-15%	Sat	216
			0537_KNF	Moderate	Slight	0-15%	Sat	445
		26	0010_KNF	Moderate	Slight	0-5%	Sat	43
		27	0324_KNF	Moderate	Slight	0-15%	Sat	1178
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	352
			0525_KNF	Moderate	Severe	15-40%	Unsat	18
		33	0310_KNF	Moderate	Mod	15-40%	Sat	202
		39	0405_KNF	Moderate	Slight	0-15%	Sat	59
			0563_KNF	Moderate	Slight	0-15%	Sat	347
		41	0564_KNF	Severe	Severe	15-40%	Unsat	21
		45	0660_KNF	Severe	Severe	40-120%	Sat/Unsuit	240
		46	0495_KNF	NA	Slight	0-15%	Sat	0
		47	0523_KNF	NA	Severe	15-120%	Unsat	28
		48	0302_KNF	Moderate	Severe	0-80%	Sat	3
			0322_KNF	Severe	Severe	0-80%	Sat	456
								155
	Operational Burn	1	0006_KNF	NA	Slight	0-5%	Sat	24
		6	0507_KNF	NA	Slight	0-15%	Sat	10
		8	0518_KNF	NA	Slight	0-15%	Sat	353

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		11	0519_KNF	Moderate	Slight	0-15%	Sat	6
		14	0565_KNF	Severe	Slight	0-15%	Sat	104
		23	0401_KNF	Moderate	Slight	0-15%	Sat	14
			0537_KNF	Moderate	Slight	0-15%	Sat	26
		26	0010_KNF	Moderate	Slight	0-5%	Sat	6
		32	0525_KNF	Moderate	Severe	15-40%	Unsat	2
		39	0563_KNF	Moderate	Slight	0-15%	Sat	159
		41	0564_KNF	Severe	Severe	15-40%	Unsat	30
	Savanna	1	0006_KNF	NA	Slight	0-5%	Sat	3
		14	0565_KNF	Severe	Slight	0-15%	Sat	25
		23	0401_KNF	Moderate	Slight	0-15%	Sat	23
		26	0010_KNF	Moderate	Slight	0-5%	Sat	15
		32	0525_KNF	Moderate	Severe	15-40%	Unsat	10
		39	0563_KNF	Moderate	Slight	0-15%	Sat	43
		46	0495_KNF	NA	Slight	0-15%	Sat	0
			0514_KNF	NA	Slight	0-15%	Sat	0
		49	0625_KNF	Severe	Severe	40-120%	Sat	0
Juan Tank Canyon	Higher Intensity Mechanical	6	0507_KNF	NA	Slight	0-15%	Sat	0
		19	0406_KNF	Severe	Severe	15-40%	Unsat	0
		23	0401_KNF	Moderate	Slight	0-15%	Sat	31
			0537_KNF	Moderate	Slight	0-15%	Sat	9
		26	0010_KNF	Moderate	Slight	0-5%	Sat	54
		32	0525_KNF	Moderate	Severe	15-40%	Unsat	1
		39	0405_KNF	Moderate	Slight	0-15%	Sat	20
			0563_KNF	Moderate	Slight	0-15%	Sat	64

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		41	0564_KNF	Severe	Severe	15-40%	Unsat	89
		46	0495_KNF	NA	Slight	0-15%	Sat	0
			0514_KNF	NA	Slight	0-15%	Sat	0
			0587_KNF	NA	Slight	0-15%	Sat	0
		47	0496_KNF	NA	Mod	15-120%	Unsat	0
	Lower Intensity Mechanical	23	0537_KNF	Moderate	Slight	0-15%	Sat	0
Kinnikinick Canyon	Burn Only	11	0585_CNF	Moderate	Slight	0-15%	Sat	172
		23	0582_CNF	Moderate	Slight	0-15%	Sat	76
			0586_CNF	Moderate	Slight	0-15%	Sat	47
		32	0565_CNF	Severe	Severe	15-40%	Sat	110
			0584_CNF	Severe	Severe	15-40%	Sat	76
		42	0575_CNF	Severe	Severe	40-120%	Unsuit	11
		48	0653_CNF	Moderate	Mod	0-80%	Sat	77
			0654_CNF	Moderate	Mod	0-80%	Sat	115
	Grassland Restoration	19	0515_CNF	NA	Mod	15-40%	Unsat	7
		39	0523_CNF	Severe	Slight	0-15%	Sat	3
	Higher Intensity Mechanical	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	22
		11	0585_CNF	Moderate	Slight	0-15%	Sat	1628
		12	0579_CNF	Moderate	Slight	0-15%	Sat	31
		19	0515_CNF	NA	Mod	15-40%	Unsat	46
		23	0582_CNF	Moderate	Slight	0-15%	Sat	442
			0586_CNF	Moderate	Slight	0-15%	Sat	1375
		32	0565_CNF	Severe	Severe	15-40%	Sat	38
			0584_CNF	Severe	Severe	15-40%	Sat	199

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		39	0523_CNF	Severe	Slight	0-15%	Sat	450
		42	0575_CNF	Severe	Severe	40-120%	Unsuit	0
		46	0453_CNF	NA	Mod	0-15%	Unsat	10
			0465_CNF	NA	Slight	0-15%	Sat/Unsat	58
		48	0653_CNF	Moderate	Mod	0-80%	Sat	16
	Lower Intensity Mechanical	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	3
		11	0585_CNF	Moderate	Slight	0-15%	Sat	442
		12	0579_CNF	Moderate	Slight	0-15%	Sat	27
		23	0582_CNF	Moderate	Slight	0-15%	Sat	67
			0586_CNF	Moderate	Slight	0-15%	Sat	526
		32	0565_CNF	Severe	Severe	15-40%	Sat	36
			0584_CNF	Severe	Severe	15-40%	Sat	17
		39	0523_CNF	Severe	Slight	0-15%	Sat	0
	No Treatment Proposed	11	0585_CNF	Moderate	Slight	0-15%	Sat	1
		23	0582_CNF	Moderate	Slight	0-15%	Sat	3
		48	0653_CNF	Moderate	Mod	0-80%	Sat	6
			0654_CNF	Moderate	Mod	0-80%	Sat	53
	Operational Burn	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	124
		9	0050_CNF	NA	Slight	0-5%	Sat	13
		11	0585_CNF	Moderate	Slight	0-15%	Sat	22
		19	0515_CNF	NA	Mod	15-40%	Unsat	90
		23	0582_CNF	Moderate	Slight	0-15%	Sat	43
			0586_CNF	Moderate	Slight	0-15%	Sat	24
		32	0565_CNF	Severe	Severe	15-40%	Sat	50

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		39	0523_CNF	Severe	Slight	0-15%	Sat	39
		46	0465_CNF	NA	Slight	0-15%	Sat/Unsat	23
		48	0653_CNF	Moderate	Mod	0-80%	Sat	11
			0654_CNF	Moderate	Mod	0-80%	Sat	3
	Savanna	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	17
		9	0050_CNF	NA	Slight	0-5%	Sat	3
		11	0585_CNF	Moderate	Slight	0-15%	Sat	561
		19	0515_CNF	NA	Mod	15-40%	Unsat	0
		23	0582_CNF	Moderate	Slight	0-15%	Sat	254
			0586_CNF	Moderate	Slight	0-15%	Sat	647
		32	0565_CNF	Severe	Severe	15-40%	Sat	4
			0584_CNF	Severe	Severe	15-40%	Sat	27
		39	0523_CNF	Severe	Slight	0-15%	Sat	1
Klostermeyer Lake	Burn Only	28	0560_CNF	Slight	Slight	0-15%	Sat	164
		42	0562_CNF	Severe	Severe	40-120%	Sat	481
	Higher Intensity Mechanical	27	0582a_CNF	Moderate	Slight	0-15%	Sat	11
		28	0560_CNF	Slight	Slight	0-15%	Sat	185
		42	0562_CNF	Severe	Severe	40-120%	Sat	1
	Lower Intensity Mechanical	28	0560_CNF	Slight	Slight	0-15%	Sat	243
		42	0562_CNF	Severe	Severe	40-120%	Sat	12
	Operational Burn	28	0560_CNF	Slight	Slight	0-15%	Sat	3
		42	0562_CNF	Severe	Severe	40-120%	Sat	4
	Savanna	27	0582a_CNF	Moderate	Slight	0-15%	Sat	76
		28	0560_CNF	Slight	Slight	0-15%	Sat	7

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		35	0584a_CNF	Severe	Severe	15-40%	Sat	1
		39	0505_CNF	Moderate	Slight	0-15%	Sat	4
			0523_CNF	Severe	Slight	0-15%	Sat	66
		42	0562_CNF	Severe	Severe	40-120%	Sat	5
Little LO Spring Canyon	Burn Only	11	0585_CNF	Moderate	Slight	0-15%	Sat	91
		12	0579_CNF	Moderate	Slight	0-15%	Sat	518
		15	0520_CNF	Severe	Slight	0-15%	Sat	176
		18	0530_CNF	Moderate	Mod	15-40%	Sat/Unsat	139
		23	0582_CNF	Moderate	Slight	0-15%	Sat	36
			0586_CNF	Moderate	Slight	0-15%	Sat	13
		25	0578_CNF	Severe	Slight	0-15%	Sat	241
		32	0584_CNF	Severe	Severe	15-40%	Sat	20
		44	0555_CNF	Severe	Severe	40-120%	Sat	103
		47	0430_CNF	NA	Mod	15-120%	Unsuit	34
			0470_CNF	NA	Severe	15-120%	Sat	6
	Higher Intensity Mechanical	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	22
		11	0585_CNF	Moderate	Slight	0-15%	Sat	714
		12	0579_CNF	Moderate	Slight	0-15%	Sat	108
		23	0582_CNF	Moderate	Slight	0-15%	Sat	946
			0586_CNF	Moderate	Slight	0-15%	Sat	430
		25	0578_CNF	Severe	Slight	0-15%	Sat	35
		27	0536_CNF	Severe	Slight	0-15%	Sat	22
		32	0550_CNF	Moderate	Mod	15-40%	Sat	94
			0584_CNF	Severe	Severe	15-40%	Sat	419
	Lower Intensity	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	0

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
	Mechanical							
		11	0585_CNF	Moderate	Slight	0-15%	Sat	302
		12	0579_CNF	Moderate	Slight	0-15%	Sat	358
		15	0520_CNF	Severe	Slight	0-15%	Sat	182
		18	0530_CNF	Moderate	Mod	15-40%	Sat/Unsat	237
		23	0582_CNF	Moderate	Slight	0-15%	Sat	384
			0586_CNF	Moderate	Slight	0-15%	Sat	199
		25	0578_CNF	Severe	Slight	0-15%	Sat	503
		32	0584_CNF	Severe	Severe	15-40%	Sat	604
		44	0555_CNF	Severe	Severe	40-120%	Sat	85
		47	0430_CNF	NA	Mod	15-120%	Unsuit	40
			0470_CNF	NA	Severe	15-120%	Sat	9
			0493_CNF	NA	Mod	15-120%	Sat	3
	No Treatment Proposed	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	57
		11	0585_CNF	Moderate	Slight	0-15%	Sat	601
		12	0579_CNF	Moderate	Slight	0-15%	Sat	400
		18	0530_CNF	Moderate	Mod	15-40%	Sat/Unsat	101
		23	0582_CNF	Moderate	Slight	0-15%	Sat	601
			0586_CNF	Moderate	Slight	0-15%	Sat	273
		25	0578_CNF	Severe	Slight	0-15%	Sat	554
		27	0536_CNF	Severe	Slight	0-15%	Sat	94
		32	0550_CNF	Moderate	Mod	15-40%	Sat	46
			0584_CNF	Severe	Severe	15-40%	Sat	565
		44	0555_CNF	Severe	Severe	40-120%	Sat	22
	Operational Burn	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	59

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		11	0585_CNF	Moderate	Slight	0-15%	Sat	12
		12	0579_CNF	Moderate	Slight	0-15%	Sat	3
		23	0582_CNF	Moderate	Slight	0-15%	Sat	8
			0586_CNF	Moderate	Slight	0-15%	Sat	1
		25	0578_CNF	Severe	Slight	0-15%	Sat	10
		32	0584_CNF	Severe	Severe	15-40%	Sat	3
		44	0555_CNF	Severe	Severe	40-120%	Sat	10
		46	0495_CNF	NA	Slight	0-15%	Sat	5
		47	0493_CNF	NA	Mod	15-120%	Sat	5
	Savanna	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	3
		11	0585_CNF	Moderate	Slight	0-15%	Sat	76
		12	0579_CNF	Moderate	Slight	0-15%	Sat	15
		23	0582_CNF	Moderate	Slight	0-15%	Sat	96
			0586_CNF	Moderate	Slight	0-15%	Sat	27
		25	0578_CNF	Severe	Slight	0-15%	Sat	6
		32	0584_CNF	Severe	Severe	15-40%	Sat	147
		44	0555_CNF	Severe	Severe	40-120%	Sat	5
Little Red Horse Wash	Burn Only	11	0265_KNF	Moderate	Mod	0-15%	Sat	9
		13	0275_KNF	Moderate	Slight	0-15%	Sat	376
		16	0276_KNF	Severe	Severe	15-40%	Unsat	14
		46	0260_KNF	NA	Mod	0-15%	Sat	1
	Higher Intensity Mechanical	13	0275_KNF	Moderate	Slight	0-15%	Sat	3
		23	0290_KNF	Moderate	Slight	0-15%	Sat	4
	Lower Intensity Mechanical	11	0265_KNF	Moderate	Mod	0-15%	Sat	9

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		13	0275_KNF	Moderate	Slight	0-15%	Sat	47
		23	0290_KNF	Moderate	Slight	0-15%	Sat	3
	Operational Burn	13	0275_KNF	Moderate	Slight	0-15%	Sat	19
	Pine Sage	11	0265_KNF	Moderate	Mod	0-15%	Sat	4
		13	0275_KNF	Moderate	Slight	0-15%	Sat	340
		16	0276_KNF	Severe	Severe	15-40%	Unsat	7
Long Lake-Chavel Pass Ditch	Burn Only	11	0585_CNF	Moderate	Slight	0-15%	Sat	211
		23	0582_CNF	Moderate	Slight	0-15%	Sat	3
		32	0565_CNF	Severe	Severe	15-40%	Sat	45
			0584_CNF	Severe	Severe	15-40%	Sat	0
		48	0653_CNF	Moderate	Mod	0-80%	Sat	21
			0654_CNF	Moderate	Mod	0-80%	Sat	220
	Grassland Restoration	19	0515_CNF	NA	Mod	15-40%	Unsat	0
		39	0523_CNF	Severe	Slight	0-15%	Sat	0
	Higher Intensity Mechanical	11	0585_CNF	Moderate	Slight	0-15%	Sat	119
		12	0579_CNF	Moderate	Slight	0-15%	Sat	15
		19	0515_CNF	NA	Mod	15-40%	Unsat	3
		23	0582_CNF	Moderate	Slight	0-15%	Sat	16
		32	0565_CNF	Severe	Severe	15-40%	Sat	7
			0584_CNF	Severe	Severe	15-40%	Sat	0
		39	0523_CNF	Severe	Slight	0-15%	Sat	43
		48	0654_CNF	Moderate	Mod	0-80%	Sat	4
	Lower Intensity Mechanical	11	0585_CNF	Moderate	Slight	0-15%	Sat	92
		12	0579_CNF	Moderate	Slight	0-15%	Sat	87

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		23	0582_CNF	Moderate	Slight	0-15%	Sat	7
		32	0565_CNF	Severe	Severe	15-40%	Sat	12
			0584_CNF	Severe	Severe	15-40%	Sat	39
	No Treatment Proposed	11	0585_CNF	Moderate	Slight	0-15%	Sat	1
		32	0565_CNF	Severe	Severe	15-40%	Sat	3
		48	0653_CNF	Moderate	Mod	0-80%	Sat	0
			0654_CNF	Moderate	Mod	0-80%	Sat	142
		49	0613_CNF	Severe	Severe	40-120%	Sat	40
	Operational Burn	19	0515_CNF	NA	Mod	15-40%	Unsat	10
		32	0565_CNF	Severe	Severe	15-40%	Sat	1
		39	0523_CNF	Severe	Slight	0-15%	Sat	1
		48	0653_CNF	Moderate	Mod	0-80%	Sat	6
			0654_CNF	Moderate	Mod	0-80%	Sat	7
	Savanna	11	0585_CNF	Moderate	Slight	0-15%	Sat	19
Lower Deadman Wash	Burn Only	21	0513_CNF	Moderate	Mod	15-40%	Unsat	30
		30	0559_CNF	Slight	Slight	0-15%	Sat	9
		31	0561_CNF	Moderate	Mod	15-40%	Sat	37
		40	0512_CNF	Slight	Slight	0-15%	Sat	406
		42	0562_CNF	Severe	Severe	40-120%	Sat	309
		46	0443_CNF	NA	Slight	0-15%	Sat	9
			0445_CNF	NA	Slight	0-15%	Sat	7
		47	0439_CNF	NA	Mod	15-120%	Sat	3
	No Treatment Proposed	42	0562_CNF	Severe	Severe	40-120%	Sat	108
	Operational Burn	30	0559_CNF	Slight	Slight	0-15%	Sat	0

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		40	0512_CNF	Slight	Slight	0-15%	Sat	60
		42	0562_CNF	Severe	Severe	40-120%	Sat	43
		46	0445_CNF	NA	Slight	0-15%	Sat	75
		47	0439_CNF	NA	Mod	15-120%	Sat	18
Lower Rio de Flag	Burn Only	1	0053_CNF	NA	Slight	0-5%	Sat	0
		3	0595_CNF	NA	Slight	0-15%	Sat	12
		5	0640_CNF	NA	Slight	0-15%	Sat	6
		6	0566_CNF	NA	Slight	0-15%	Sat	22
		21	0014_CNF	Slight	Slight	15-40%	NA/Sat	3
			0513_CNF	Moderate	Mod	15-40%	Unsat	66
		23	0586_CNF	Moderate	Slight	0-15%	Sat	1
		25	0567_CNF	Severe	Slight	0-15%	Sat	13
		27	0551_CNF	Moderate	Slight	0-15%	Sat	152
		28	0560_CNF	Slight	Slight	0-15%	Sat	210
		30	0558_CNF	Slight	Slight	0-15%	Sat	234
			0559_CNF	Slight	Slight	0-15%	Sat	469
		32	0550_CNF	Moderate	Mod	15-40%	Sat	18
		35	0553_CNF	Moderate	Slight	15-40%	Sat	170
			0584a_CNF	Severe	Severe	15-40%	Sat	21
		39	0506_CNF	Moderate	Slight	0-15%	Sat	9
		42	0596_CNF	Severe	Severe	40-120%	Sat	988
		46	0443_CNF	NA	Slight	0-15%	Sat	3
			0444_CNF	NA	Slight	0-15%	Sat	12
			0473_CNF	NA	Slight	0-15%	Sat	45
		47	0441_CNF	NA	Mod	15-120%	Sat	0

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
			0450_CNF	NA	Mod	15-120%	Sat	100
		48	0654_CNF	Moderate	Mod	0-80%	Sat	102
		49	0613_CNF	Severe	Severe	40-120%	Sat	738
								4
	Higher Intensity Mechanical	1	0053_CNF	NA	Slight	0-5%	Sat	8
		25	0567_CNF	Severe	Slight	0-15%	Sat	210
		27	0536_CNF	Severe	Slight	0-15%	Sat	653
			0551_CNF	Moderate	Slight	0-15%	Sat	28
		32	0550_CNF	Moderate	Mod	15-40%	Sat	49
		35	0584a_CNF	Severe	Severe	15-40%	Sat	2
		36	0537_CNF	Severe	Mod	15-40%	Sat	130
		42	0596_CNF	Severe	Severe	40-120%	Sat	222
		48	0654_CNF	Moderate	Mod	0-80%	Sat	23
		49	0613_CNF	Severe	Severe	40-120%	Sat	21
								42
	Lower Intensity Mechanical	1	0053_CNF	NA	Slight	0-5%	Sat	28
		25	0567_CNF	Severe	Slight	0-15%	Sat	587
		27	0536_CNF	Severe	Slight	0-15%	Sat	35
			0551_CNF	Moderate	Slight	0-15%	Sat	204
		32	0550_CNF	Moderate	Mod	15-40%	Sat	236
		35	0553_CNF	Moderate	Slight	15-40%	Sat	25
		36	0537_CNF	Severe	Mod	15-40%	Sat	1
		42	0596_CNF	Severe	Severe	40-120%	Sat	6
		48	0654_CNF	Moderate	Mod	0-80%	Sat	20

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		49	0613_CNF	Severe	Severe	40-120%	Sat	2
	No Treatment Proposed	1	0053_CNF	NA	Slight	0-5%	Sat	238
		3	0595_CNF	NA	Slight	0-15%	Sat	252
		5	0640_CNF	NA	Slight	0-15%	Sat	2
		6	0566_CNF	NA	Slight	0-15%	Sat	2726
		21	0513_CNF	Moderate	Mod	15-40%	Unsat	175
		22	0527_CNF	Moderate	Mod	15-40%	Sat	135
		23	0582_CNF	Moderate	Slight	0-15%	Sat	344
			0586_CNF	Moderate	Slight	0-15%	Sat	582
		25	0567_CNF	Severe	Slight	0-15%	Sat	831
		27	0536_CNF	Severe	Slight	0-15%	Sat	1091
			0551_CNF	Moderate	Slight	0-15%	Sat	2166
		28	0560_CNF	Slight	Slight	0-15%	Sat	184
		30	0559_CNF	Slight	Slight	0-15%	Sat	1
		32	0550_CNF	Moderate	Mod	15-40%	Sat	318
		35	0553_CNF	Moderate	Slight	15-40%	Sat	3
			0584a_CNF	Severe	Severe	15-40%	Sat	121
		36	0537_CNF	Severe	Mod	15-40%	Sat	190
		39	0500_CNF	Severe	Slight	0-15%	Sat	1678
			0505_CNF	Moderate	Slight	0-15%	Sat	1667
			0506_CNF	Moderate	Slight	0-15%	Sat	13
			0523_CNF	Severe	Slight	0-15%	Sat	252
		40	0510_CNF	Slight	Slight	0-15%	Sat	6
		41	0524_CNF	Severe	Severe	15-40%	Sat	200
		42	0596_CNF	Severe	Severe	40-120%	Sat	492

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		46	0473_CNF	NA	Slight	0-15%	Sat	219
		47	0441_CNF	NA	Mod	15-120%	Sat	142
			0450_CNF	NA	Mod	15-120%	Sat	437
		48	0654_CNF	Moderate	Mod	0-80%	Sat	352
		49	0613_CNF	Severe	Severe	40-120%	Sat	872
								11209
	Operational Burn	1	0053_CNF	NA	Slight	0-5%	Sat	22
		5	0640_CNF	NA	Slight	0-15%	Sat	10
		6	0566_CNF	NA	Slight	0-15%	Sat	183
		21	0014_CNF	Slight	Slight	15-40%	NA/Sat	1
			0015_CNF	Slight	Slight	15-40%	NA/Sat	37
			0513_CNF	Moderate	Mod	15-40%	Unsat	46
		27	0536_CNF	Severe	Slight	0-15%	Sat	102
			0551_CNF	Moderate	Slight	0-15%	Sat	95
		28	0560_CNF	Slight	Slight	0-15%	Sat	58
		30	0559_CNF	Slight	Slight	0-15%	Sat	15
		35	0553_CNF	Moderate	Slight	15-40%	Sat	15
		36	0537_CNF	Severe	Mod	15-40%	Sat	27
		39	0500_CNF	Severe	Slight	0-15%	Sat	12
			0505_CNF	Moderate	Slight	0-15%	Sat	31
			0506_CNF	Moderate	Slight	0-15%	Sat	105
		40	0512_CNF	Slight	Slight	0-15%	Sat	3
		42	0596_CNF	Severe	Severe	40-120%	Sat	135
		46	0443_CNF	NA	Slight	0-15%	Sat	302
			0444_CNF	NA	Slight	0-15%	Sat	48

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
			0473_CNF	NA	Slight	0-15%	Sat	50
		47	0441_CNF	NA	Mod	15-120%	Sat	41
			0450_CNF	NA	Mod	15-120%	Sat	381
		48	0654_CNF	Moderate	Mod	0-80%	Sat	14
		49	0613_CNF	Severe	Severe	40-120%	Sat	0
								1
	Savanna	1	0053_CNF	NA	Slight	0-5%	Sat	4
		25	0567_CNF	Severe	Slight	0-15%	Sat	95
		27	0536_CNF	Severe	Slight	0-15%	Sat	11
		32	0550_CNF	Moderate	Mod	15-40%	Sat	41
		36	0537_CNF	Severe	Mod	15-40%	Sat	25
								1
Lower Sycamore Creek	Burn Only	11	0519_KNF	Moderate	Slight	0-15%	Sat	13
		41	0564_KNF	Severe	Severe	15-40%	Unsat	0
	Grassland Restoration	39	0563_KNF	Moderate	Slight	0-15%	Sat	1
			0649_KNF	Moderate	Mod	0-15%	Sat	14
		41	0564_KNF	Severe	Severe	15-40%	Unsat	1
	Higher Intensity Mechanical	11	0519_KNF	Moderate	Slight	0-15%	Sat	15
		39	0563_KNF	Moderate	Slight	0-15%	Sat	6
			0649_KNF	Moderate	Mod	0-15%	Sat	2
		41	0564_KNF	Severe	Severe	15-40%	Unsat	12
	Lower Intensity Mechanical	11	0519_KNF	Moderate	Slight	0-15%	Sat	30
		39	0563_KNF	Moderate	Slight	0-15%	Sat	8
			0649_KNF	Moderate	Mod	0-15%	Sat	3

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		41	0564_KNF	Severe	Severe	15-40%	Unsat	25
	No Treatment Proposed	15	0572_CNF	Severe	Slight	0-15%	Sat	24
		24	0546_CNF	Severe	Slight	0-15%	Sat	15
		32	0549_CNF	Moderate	Mod	15-40%	Sat	124
			0550_CNF	Moderate	Mod	15-40%	Sat	5
		44	0555_CNF	Severe	Severe	40-120%	Sat	9
		47	0471_CNF	NA	Severe	15-120%	Unsuit	2
	Savanna	11	0519_KNF	Moderate	Slight	0-15%	Sat	8
		41	0564_KNF	Severe	Severe	15-40%	Unsat	8
Lower Woods Canyon	Burn Only	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	17
		11	0585_CNF	Moderate	Slight	0-15%	Sat	190
		12	0579_CNF	Moderate	Slight	0-15%	Sat	757
		15	0520_CNF	Severe	Slight	0-15%	Sat	1950
		18	0530_CNF	Moderate	Mod	15-40%	Sat/Unsat	81
		23	0582_CNF	Moderate	Slight	0-15%	Sat	78
			0586_CNF	Moderate	Slight	0-15%	Sat	32
		25	0578_CNF	Severe	Slight	0-15%	Sat	761
		32	0584_CNF	Severe	Severe	15-40%	Sat	304
		42	0575_CNF	Severe	Severe	40-120%	Unsuit	64
		46	0495_CNF	NA	Slight	0-15%	Sat	150
		47	0471_CNF	NA	Severe	15-120%	Unsuit	0
			0493_CNF	NA	Mod	15-120%	Sat	6
	Higher Intensity Mechanical	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	43
		12	0579_CNF	Moderate	Slight	0-15%	Sat	114

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		15	0520_CNF	Severe	Slight	0-15%	Sat	25
		18	0530_CNF	Moderate	Mod	15-40%	Sat/Unsat	13
		23	0582_CNF	Moderate	Slight	0-15%	Sat	59
			0586_CNF	Moderate	Slight	0-15%	Sat	403
		25	0578_CNF	Severe	Slight	0-15%	Sat	20
		32	0584_CNF	Severe	Severe	15-40%	Sat	204
		46	0495_CNF	NA	Slight	0-15%	Sat	13
		47	0493_CNF	NA	Mod	15-120%	Sat	5
	Lower Intensity Mechanical	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	9
		11	0585_CNF	Moderate	Slight	0-15%	Sat	296
		12	0579_CNF	Moderate	Slight	0-15%	Sat	646
		15	0520_CNF	Severe	Slight	0-15%	Sat	105
		18	0530_CNF	Moderate	Mod	15-40%	Sat/Unsat	3
		23	0582_CNF	Moderate	Slight	0-15%	Sat	618
			0586_CNF	Moderate	Slight	0-15%	Sat	606
		25	0578_CNF	Severe	Slight	0-15%	Sat	688
		32	0565_CNF	Severe	Severe	15-40%	Sat	14
			0584_CNF	Severe	Severe	15-40%	Sat	585
		46	0495_CNF	NA	Slight	0-15%	Sat	43
		47	0493_CNF	NA	Mod	15-120%	Sat	5
	No Treatment Proposed	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	123
		15	0520_CNF	Severe	Slight	0-15%	Sat	1
		23	0582_CNF	Moderate	Slight	0-15%	Sat	9
			0586_CNF	Moderate	Slight	0-15%	Sat	43

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		32	0584_CNF	Severe	Severe	15-40%	Sat	43
	Operational Burn	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	48
		11	0585_CNF	Moderate	Slight	0-15%	Sat	12
		12	0579_CNF	Moderate	Slight	0-15%	Sat	181
		15	0520_CNF	Severe	Slight	0-15%	Sat	435
		23	0582_CNF	Moderate	Slight	0-15%	Sat	2
			0586_CNF	Moderate	Slight	0-15%	Sat	4
		25	0578_CNF	Severe	Slight	0-15%	Sat	20
		32	0584_CNF	Severe	Severe	15-40%	Sat	0
		46	0495_CNF	NA	Slight	0-15%	Sat	87
		47	0493_CNF	NA	Mod	15-120%	Sat	0
	Savanna	12	0579_CNF	Moderate	Slight	0-15%	Sat	1
		23	0582_CNF	Moderate	Slight	0-15%	Sat	9
			0586_CNF	Moderate	Slight	0-15%	Sat	27
		32	0584_CNF	Severe	Severe	15-40%	Sat	16
MC Canyon	Aspen Treatment	26	0010_KNF	Moderate	Slight	0-5%	Sat	0
		42	0539_KNF	Severe	Severe	40-120%	Unsuit	3
	Burn Only	11	0519_KNF	Moderate	Slight	0-15%	Sat	29
		23	0401_KNF	Moderate	Slight	0-15%	Sat	1
		32	0525_KNF	Moderate	Severe	15-40%	Unsat	7
	Higher Intensity Mechanical	1	0006_KNF	NA	Slight	0-5%	Sat	4
		11	0519_KNF	Moderate	Slight	0-15%	Sat	94
		14	0565_KNF	Severe	Slight	0-15%	Sat	21
		19	0406_KNF	Severe	Severe	15-40%	Unsat	19
		23	0401_KNF	Moderate	Slight	0-15%	Sat	152

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
			0537_KNF	Moderate	Slight	0-15%	Sat	218
		26	0010_KNF	Moderate	Slight	0-5%	Sat	91
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	17
			0525_KNF	Moderate	Severe	15-40%	Unsat	15
		39	0563_KNF	Moderate	Slight	0-15%	Sat	110
		41	0564_KNF	Severe	Severe	15-40%	Unsat	32
		42	0539_KNF	Severe	Severe	40-120%	Unsuit	128
		43	0648_KNF	Severe	Severe	40-120%	Unsuit	3
		46	0587_KNF	NA	Slight	0-15%	Sat	2
		47	0523_KNF	NA	Severe	15-120%	Unsat	1
	Lower Intensity Mechanical	1	0006_KNF	NA	Slight	0-5%	Sat	1
		11	0519_KNF	Moderate	Slight	0-15%	Sat	24
		14	0565_KNF	Severe	Slight	0-15%	Sat	11
		20	0407_KNF	Severe	Severe	15-40%	Unsat	1
		23	0401_KNF	Moderate	Slight	0-15%	Sat	260
			0537_KNF	Moderate	Slight	0-15%	Sat	14
		26	0010_KNF	Moderate	Slight	0-5%	Sat	2
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	22
			0525_KNF	Moderate	Severe	15-40%	Unsat	93
		39	0563_KNF	Moderate	Slight	0-15%	Sat	9
		41	0564_KNF	Severe	Severe	15-40%	Unsat	13
		42	0539_KNF	Severe	Severe	40-120%	Unsuit	6
	No Treatment Proposed	1	0006_KNF	NA	Slight	0-5%	Sat	95
		11	0519_KNF	Moderate	Slight	0-15%	Sat	884

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		14	0565_KNF	Severe	Slight	0-15%	Sat	645
		20	0407_KNF	Severe	Severe	15-40%	Unsat	504
		23	0401_KNF	Moderate	Slight	0-15%	Sat	1676
			0537_KNF	Moderate	Slight	0-15%	Sat	1054
		26	0010_KNF	Moderate	Slight	0-5%	Sat	294
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	190
			0525_KNF	Moderate	Severe	15-40%	Unsat	1282
		39	0405_KNF	Moderate	Slight	0-15%	Sat	3
			0563_KNF	Moderate	Slight	0-15%	Sat	307
		41	0564_KNF	Severe	Severe	15-40%	Unsat	112
		42	0539_KNF	Severe	Severe	40-120%	Unsuit	58
		43	0648_KNF	Severe	Severe	40-120%	Unsuit	85
		46	0495_KNF	NA	Slight	0-15%	Sat	0
			0586_KNF	NA	Slight	0-15%	Sat	0
			0587_KNF	NA	Slight	0-15%	Sat	16
		47	0496_KNF	NA	Mod	15-120%	Unsat	42
			0523_KNF	NA	Severe	15-120%	Unsat	152
	Operational Burn	1	0006_KNF	NA	Slight	0-5%	Sat	14
		11	0519_KNF	Moderate	Slight	0-15%	Sat	135
		14	0565_KNF	Severe	Slight	0-15%	Sat	57
		19	0406_KNF	Severe	Severe	15-40%	Unsat	80
		20	0407_KNF	Severe	Severe	15-40%	Unsat	40
		23	0401_KNF	Moderate	Slight	0-15%	Sat	136
			0537_KNF	Moderate	Slight	0-15%	Sat	38
		26	0010_KNF	Moderate	Slight	0-5%	Sat	7

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	168
			0525_KNF	Moderate	Severe	15-40%	Unsat	37
		39	0563_KNF	Moderate	Slight	0-15%	Sat	119
		41	0564_KNF	Severe	Severe	15-40%	Unsat	14
		42	0539_KNF	Severe	Severe	40-120%	Unsuit	11
		46	0587_KNF	NA	Slight	0-15%	Sat	85
		47	0523_KNF	NA	Severe	15-120%	Unsat	23
	Savanna	1	0006_KNF	NA	Slight	0-5%	Sat	2
		11	0519_KNF	Moderate	Slight	0-15%	Sat	2
		14	0565_KNF	Severe	Slight	0-15%	Sat	21
		23	0401_KNF	Moderate	Slight	0-15%	Sat	48
			0537_KNF	Moderate	Slight	0-15%	Sat	48
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	27
			0525_KNF	Moderate	Severe	15-40%	Unsat	3
		39	0563_KNF	Moderate	Slight	0-15%	Sat	44
		41	0564_KNF	Severe	Severe	15-40%	Unsat	5
		42	0539_KNF	Severe	Severe	40-120%	Unsuit	8
		46	0587_KNF	NA	Slight	0-15%	Sat	11
Meath Wash	Grassland Restoration	6	0507_KNF	NA	Slight	0-15%	Sat	3
		8	0518_KNF	NA	Slight	0-15%	Sat	1
		39	0563_KNF	Moderate	Slight	0-15%	Sat	0
	Higher Intensity Mechanical	1	0006_KNF	NA	Slight	0-5%	Sat	1
		6	0507_KNF	NA	Slight	0-15%	Sat	0
		8	0518_KNF	NA	Slight	0-15%	Sat	4

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		11	0519_KNF	Moderate	Slight	0-15%	Sat	6
		23	0401_KNF	Moderate	Slight	0-15%	Sat	3
			0537_KNF	Moderate	Slight	0-15%	Sat	56
		39	0405_KNF	Moderate	Slight	0-15%	Sat	28
			0563_KNF	Moderate	Slight	0-15%	Sat	5
		47	0523_KNF	NA	Severe	15-120%	Unsat	2
	No Treatment Proposed	1	0006_KNF	NA	Slight	0-5%	Sat	224
		6	0507_KNF	NA	Slight	0-15%	Sat	77
		8	0518_KNF	NA	Slight	0-15%	Sat	295
		11	0519_KNF	Moderate	Slight	0-15%	Sat	368
		23	0537_KNF	Moderate	Slight	0-15%	Sat	340
		27	0324_KNF	Moderate	Slight	0-15%	Sat	444
		32	0525_KNF	Moderate	Severe	15-40%	Unsat	46
		33	0310_KNF	Moderate	Mod	15-40%	Sat	165
		39	0563_KNF	Moderate	Slight	0-15%	Sat	38
		41	0564_KNF	Severe	Severe	15-40%	Unsat	157
		45	0660_KNF	Severe	Severe	40-120%	Sat/Unsuit	99
		48	0322_KNF	Severe	Severe	0-80%	Sat	5
								8
	Operational Burn	1	0006_KNF	NA	Slight	0-5%	Sat	52
		6	0507_KNF	NA	Slight	0-15%	Sat	0
		8	0518_KNF	NA	Slight	0-15%	Sat	273
		23	0537_KNF	Moderate	Slight	0-15%	Sat	14
		27	0324_KNF	Moderate	Slight	0-15%	Sat	0
		39	0563_KNF	Moderate	Slight	0-15%	Sat	5

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
Middle Deadman Wash	Burn Only	6	0566_CNF	NA	Slight	0-15%	Sat	7
		21	0513_CNF	Moderate	Mod	15-40%	Unsat	520
		23	0586_CNF	Moderate	Slight	0-15%	Sat	2
		27	0551_CNF	Moderate	Slight	0-15%	Sat	730
		35	0553_CNF	Moderate	Slight	15-40%	Sat	111
		39	0506_CNF	Moderate	Slight	0-15%	Sat	137
		40	0512_CNF	Slight	Slight	0-15%	Sat	518
		41	0524_CNF	Severe	Severe	15-40%	Sat	31
		42	0562_CNF	Severe	Severe	40-120%	Sat	422
		46	0445_CNF	NA	Slight	0-15%	Sat	2
			0473_CNF	NA	Slight	0-15%	Sat	257
		47	0439_CNF	NA	Mod	15-120%	Sat	1
			0441_CNF	NA	Mod	15-120%	Sat	232
		48	0654_CNF	Moderate	Mod	0-80%	Sat	37
		49	0613_CNF	Severe	Severe	40-120%	Sat	93
	Higher Intensity Mechanical	23	0586_CNF	Moderate	Slight	0-15%	Sat	204
		27	0551_CNF	Moderate	Slight	0-15%	Sat	141
		35	0553_CNF	Moderate	Slight	15-40%	Sat	6
		39	0506_CNF	Moderate	Slight	0-15%	Sat	2
		41	0524_CNF	Severe	Severe	15-40%	Sat	7
		46	0445_CNF	NA	Slight	0-15%	Sat	36
		49	0613_CNF	Severe	Severe	40-120%	Sat	9
	Lower Intensity Mechanical	23	0586_CNF	Moderate	Slight	0-15%	Sat	6
		27	0551_CNF	Moderate	Slight	0-15%	Sat	209

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		35	0553_CNF	Moderate	Slight	15-40%	Sat	67
		39	0506_CNF	Moderate	Slight	0-15%	Sat	6
		41	0524_CNF	Severe	Severe	15-40%	Sat	15
		46	0445_CNF	NA	Slight	0-15%	Sat	10
		49	0613_CNF	Severe	Severe	40-120%	Sat	6
	No Treatment Proposed	21	0513_CNF	Moderate	Mod	15-40%	Unsat	7
		27	0551_CNF	Moderate	Slight	0-15%	Sat	233
		40	0512_CNF	Slight	Slight	0-15%	Sat	6
		42	0562_CNF	Severe	Severe	40-120%	Sat	235
		47	0441_CNF	NA	Mod	15-120%	Sat	45
		48	0653_CNF	Moderate	Mod	0-80%	Sat	4
			0654_CNF	Moderate	Mod	0-80%	Sat	82
		49	0613_CNF	Severe	Severe	40-120%	Sat	294
	Operational Burn	6	0566_CNF	NA	Slight	0-15%	Sat	18
		21	0513_CNF	Moderate	Mod	15-40%	Unsat	90
		23	0586_CNF	Moderate	Slight	0-15%	Sat	9
		27	0551_CNF	Moderate	Slight	0-15%	Sat	82
		35	0553_CNF	Moderate	Slight	15-40%	Sat	2
		39	0506_CNF	Moderate	Slight	0-15%	Sat	107
			0523_CNF	Severe	Slight	0-15%	Sat	97
		40	0512_CNF	Slight	Slight	0-15%	Sat	136
		41	0524_CNF	Severe	Severe	15-40%	Sat	113
		42	0562_CNF	Severe	Severe	40-120%	Sat	50
		46	0438_CNF	NA	Slight	0-15%	Sat	4
			0445_CNF	NA	Slight	0-15%	Sat	118

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
			0473_CNF	NA	Slight	0-15%	Sat	57
		47	0439_CNF	NA	Mod	15-120%	Sat	19
			0441_CNF	NA	Mod	15-120%	Sat	143
	Savanna	39	0506_CNF	Moderate	Slight	0-15%	Sat	8
			0523_CNF	Severe	Slight	0-15%	Sat	9
Middle Oak Creek	Burn Only	15	0520_CNF	Severe	Slight	0-15%	Sat	636
		18	0530_CNF	Moderate	Mod	15-40%	Sat/Unsat	63
		25	0578_CNF	Severe	Slight	0-15%	Sat	42
		46	0495_CNF	NA	Slight	0-15%	Sat	112
		47	0470_CNF	NA	Severe	15-120%	Sat	0
	Higher Intensity Mechanical	15	0520_CNF	Severe	Slight	0-15%	Sat	29
		25	0578_CNF	Severe	Slight	0-15%	Sat	21
	Lower Intensity Mechanical	15	0520_CNF	Severe	Slight	0-15%	Sat	100
		25	0578_CNF	Severe	Slight	0-15%	Sat	32
	Operational Burn	15	0520_CNF	Severe	Slight	0-15%	Sat	15
		18	0530_CNF	Moderate	Mod	15-40%	Sat/Unsat	1
		46	0495_CNF	NA	Slight	0-15%	Sat	29
Middle Spring Valley Wash	Burn Only	1	0006_KNF	NA	Slight	0-5%	Sat	0
		6	0507_KNF	NA	Slight	0-15%	Sat	2
		19	0406_KNF	Severe	Severe	15-40%	Unsat	109
		23	0401_KNF	Moderate	Slight	0-15%	Sat	23
			0537_KNF	Moderate	Slight	0-15%	Sat	197
		27	0324_KNF	Moderate	Slight	0-15%	Sat	78
		33	0310_KNF	Moderate	Mod	15-40%	Sat	34

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		39	0305_KNF	Moderate	Slight	0-15%	Sat	5
			0405_KNF	Moderate	Slight	0-15%	Sat	213
			0563_KNF	Moderate	Slight	0-15%	Sat	22
		41	0311_KNF	Severe	Severe	15-40%	Unsat	2
			0564_KNF	Severe	Severe	15-40%	Unsat	0
		43	0431_KNF	Severe	Severe	40-120%	Unsuit	3
		47	0496_KNF	NA	Mod	15-120%	Unsat	4
		48	0312_KNF	Severe	Severe	0-80%	Unsat	55
	Grassland Restoration	6	0507_KNF	NA	Slight	0-15%	Sat	295
		23	0537_KNF	Moderate	Slight	0-15%	Sat	5
		39	0405_KNF	Moderate	Slight	0-15%	Sat	34
			0563_KNF	Moderate	Slight	0-15%	Sat	93
		46	0495_KNF	NA	Slight	0-15%	Sat	5
	Higher Intensity Mechanical	1	0006_KNF	NA	Slight	0-5%	Sat	1
		6	0036_KNF	NA	Slight	0-15%	Sat	0
			0507_KNF	NA	Slight	0-15%	Sat	12
		19	0406_KNF	Severe	Severe	15-40%	Unsat	316
		23	0401_KNF	Moderate	Slight	0-15%	Sat	80
			0537_KNF	Moderate	Slight	0-15%	Sat	170
		27	0324_KNF	Moderate	Slight	0-15%	Sat	14
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	6
		39	0405_KNF	Moderate	Slight	0-15%	Sat	581
			0563_KNF	Moderate	Slight	0-15%	Sat	313
		41	0311_KNF	Severe	Severe	15-40%	Unsat	0

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
			0564_KNF	Severe	Severe	15-40%	Unsat	116
		43	0431_KNF	Severe	Severe	40-120%	Unsuit	56
		46	0495_KNF	NA	Slight	0-15%	Sat	8
			0514_KNF	NA	Slight	0-15%	Sat	0
			0586_KNF	NA	Slight	0-15%	Sat	9
		47	0476_KNF	NA	Severe	15-120%	Unsat	0
			0496_KNF	NA	Mod	15-120%	Unsat	61
		48	0312_KNF	Severe	Severe	0-80%	Unsat	3
	Lower Intensity Mechanical	19	0406_KNF	Severe	Severe	15-40%	Unsat	22
		23	0401_KNF	Moderate	Slight	0-15%	Sat	13
			0537_KNF	Moderate	Slight	0-15%	Sat	2
		27	0324_KNF	Moderate	Slight	0-15%	Sat	57
		33	0310_KNF	Moderate	Mod	15-40%	Sat	75
		39	0405_KNF	Moderate	Slight	0-15%	Sat	112
			0563_KNF	Moderate	Slight	0-15%	Sat	5
		41	0311_KNF	Severe	Severe	15-40%	Unsat	25
			0564_KNF	Severe	Severe	15-40%	Unsat	2
		43	0431_KNF	Severe	Severe	40-120%	Unsuit	11
		46	0514_KNF	NA	Slight	0-15%	Sat	2
		47	0496_KNF	NA	Mod	15-120%	Unsat	3
		48	0312_KNF	Severe	Severe	0-80%	Unsat	9
	No Treatment Proposed	27	0324_KNF	Moderate	Slight	0-15%	Sat	0
		39	0563_KNF	Moderate	Slight	0-15%	Sat	0
	Operational Burn	1	0006_KNF	NA	Slight	0-5%	Sat	11

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		6	0507_KNF	NA	Slight	0-15%	Sat	160
		19	0406_KNF	Severe	Severe	15-40%	Unsat	175
		23	0401_KNF	Moderate	Slight	0-15%	Sat	11
			0537_KNF	Moderate	Slight	0-15%	Sat	12
		27	0324_KNF	Moderate	Slight	0-15%	Sat	54
		33	0310_KNF	Moderate	Mod	15-40%	Sat	24
		39	0305_KNF	Moderate	Slight	0-15%	Sat	27
			0405_KNF	Moderate	Slight	0-15%	Sat	180
			0563_KNF	Moderate	Slight	0-15%	Sat	105
		41	0311_KNF	Severe	Severe	15-40%	Unsat	36
			0564_KNF	Severe	Severe	15-40%	Unsat	0
		43	0431_KNF	Severe	Severe	40-120%	Unsuit	30
		46	0495_KNF	NA	Slight	0-15%	Sat	126
		47	0476_KNF	NA	Severe	15-120%	Unsat	25
			0496_KNF	NA	Mod	15-120%	Unsat	172
		48	0312_KNF	Severe	Severe	0-80%	Unsat	39
	Savanna	6	0507_KNF	NA	Slight	0-15%	Sat	5
		19	0406_KNF	Severe	Severe	15-40%	Unsat	30
		27	0324_KNF	Moderate	Slight	0-15%	Sat	11
		39	0405_KNF	Moderate	Slight	0-15%	Sat	69
			0563_KNF	Moderate	Slight	0-15%	Sat	63
		41	0564_KNF	Severe	Severe	15-40%	Unsat	22
		47	0496_KNF	NA	Mod	15-120%	Unsat	30
Middle Sycamore Creek	Burn Only	11	0519_KNF	Moderate	Slight	0-15%	Sat	0
		14	0565_KNF	Severe	Slight	0-15%	Sat	43

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		15	0520_CNF	Severe	Slight	0-15%	Sat	98
		18	0530_CNF	Moderate	Mod	15-40%	Sat/Unsat	11
		23	0537_KNF	Moderate	Slight	0-15%	Sat	42
		26	0010_KNF	Moderate	Slight	0-5%	Sat	31
		32	0525_KNF	Moderate	Severe	15-40%	Unsat	4
		39	0649_KNF	Moderate	Mod	0-15%	Sat	0
		47	0541_KNF	NA	Severe	15-120%	Unsuit	0
	Grassland Restoration	1	0006_KNF	NA	Slight	0-5%	Sat	41
		6	0507_KNF	NA	Slight	0-15%	Sat	459
		14	0565_KNF	Severe	Slight	0-15%	Sat	66
		23	0537_KNF	Moderate	Slight	0-15%	Sat	13
		26	0010_KNF	Moderate	Slight	0-5%	Sat	1
		39	0563_KNF	Moderate	Slight	0-15%	Sat	63
			0649_KNF	Moderate	Mod	0-15%	Sat	35
		46	0514_KNF	NA	Slight	0-15%	Sat	41
			0587_KNF	NA	Slight	0-15%	Sat	21
		47	0523_KNF	NA	Severe	15-120%	Unsat	27
			0541_KNF	NA	Severe	15-120%	Unsuit	19
		49	0540_KNF	Severe	Severe	40-120%	Unsat	2
	Higher Intensity Mechanical	1	0006_KNF	NA	Slight	0-5%	Sat	1
		6	0507_KNF	NA	Slight	0-15%	Sat	0
		11	0519_KNF	Moderate	Slight	0-15%	Sat	75
		14	0565_KNF	Severe	Slight	0-15%	Sat	76
		23	0401_KNF	Moderate	Slight	0-15%	Sat	335

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
			0537_KNF	Moderate	Slight	0-15%	Sat	958
		26	0010_KNF	Moderate	Slight	0-5%	Sat	106
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	1
			0525_KNF	Moderate	Severe	15-40%	Unsat	55
		39	0563_KNF	Moderate	Slight	0-15%	Sat	2
			0649_KNF	Moderate	Mod	0-15%	Sat	7
	Lower Intensity Mechanical	1	0006_KNF	NA	Slight	0-5%	Sat	24
		6	0507_KNF	NA	Slight	0-15%	Sat	13
		11	0519_KNF	Moderate	Slight	0-15%	Sat	611
		14	0565_KNF	Severe	Slight	0-15%	Sat	185
		15	0520_CNF	Severe	Slight	0-15%	Sat	207
		18	0530_CNF	Moderate	Mod	15-40%	Sat/Unsat	60
		23	0401_KNF	Moderate	Slight	0-15%	Sat	442
			0537_KNF	Moderate	Slight	0-15%	Sat	1081
		26	0010_KNF	Moderate	Slight	0-5%	Sat	353
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	153
			0525_KNF	Moderate	Severe	15-40%	Unsat	360
		39	0563_KNF	Moderate	Slight	0-15%	Sat	257
			0649_KNF	Moderate	Mod	0-15%	Sat	54
		41	0564_KNF	Severe	Severe	15-40%	Unsat	94
		44	0555_CNF	Severe	Severe	40-120%	Sat	0
		46	0514_KNF	NA	Slight	0-15%	Sat	0
			0587_KNF	NA	Slight	0-15%	Sat	33
		47	0470_CNF	NA	Severe	15-120%	Sat	4
			0523_KNF	NA	Severe	15-120%	Unsat	18

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
			0541_KNF	NA	Severe	15-120%	Unsuit	27
		49	0540_KNF	Severe	Severe	40-120%	Unsat	13
	No Treatment Proposed	1	0006_KNF	NA	Slight	0-5%	Sat	25
		11	0585_CNF	Moderate	Slight	0-15%	Sat	74
		12	0579_CNF	Moderate	Slight	0-15%	Sat	225
		18	0530_CNF	Moderate	Mod	15-40%	Sat/Unsat	198
		23	0401_KNF	Moderate	Slight	0-15%	Sat	1
			0537_KNF	Moderate	Slight	0-15%	Sat	24
			0586_CNF	Moderate	Slight	0-15%	Sat	221
		24	0546_CNF	Severe	Slight	0-15%	Sat	22
		25	0578_CNF	Severe	Slight	0-15%	Sat	93
		26	0010_KNF	Moderate	Slight	0-5%	Sat	14
		32	0525_KNF	Moderate	Severe	15-40%	Unsat	1
			0549_CNF	Moderate	Mod	15-40%	Sat	38
			0565_CNF	Severe	Severe	15-40%	Sat	45
			0584_CNF	Severe	Severe	15-40%	Sat	21
		41	0564_KNF	Severe	Severe	15-40%	Unsat	18
		44	0555_CNF	Severe	Severe	40-120%	Sat	53
		48	0651_CNF	Severe	Severe	0-80%	Sat	0
	Operational Burn	1	0006_KNF	NA	Slight	0-5%	Sat	20
		6	0507_KNF	NA	Slight	0-15%	Sat	173
		11	0519_KNF	Moderate	Slight	0-15%	Sat	52
		14	0565_KNF	Severe	Slight	0-15%	Sat	108
		23	0401_KNF	Moderate	Slight	0-15%	Sat	7
			0537_KNF	Moderate	Slight	0-15%	Sat	18

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		26	0010_KNF	Moderate	Slight	0-5%	Sat	3
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	25
			0525_KNF	Moderate	Severe	15-40%	Unsat	1
		39	0563_KNF	Moderate	Slight	0-15%	Sat	19
		41	0564_KNF	Severe	Severe	15-40%	Unsat	2
		46	0587_KNF	NA	Slight	0-15%	Sat	30
		47	0523_KNF	NA	Severe	15-120%	Unsat	7
			0541_KNF	NA	Severe	15-120%	Unsuit	73
		49	0540_KNF	Severe	Severe	40-120%	Unsat	4
	Savanna	11	0519_KNF	Moderate	Slight	0-15%	Sat	209
		14	0565_KNF	Severe	Slight	0-15%	Sat	32
		23	0401_KNF	Moderate	Slight	0-15%	Sat	13
			0537_KNF	Moderate	Slight	0-15%	Sat	171
		26	0010_KNF	Moderate	Slight	0-5%	Sat	46
		32	0525_KNF	Moderate	Severe	15-40%	Unsat	26
		39	0563_KNF	Moderate	Slight	0-15%	Sat	1
Miller Wash Headwaters	Aspen Treatment	27	0304_KNF	Moderate	Slight	0-15%	Sat	0
			0401a_KNF	Moderate	Slight	0-15%	Sat	0
		29	0325_KNF	Moderate	Slight	0-15%	Sat	2
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	0
		36	0300a_KNF	Moderate	Mod	15-40%	Sat	3
			0310a_KNF	Moderate	Mod	15-40%	Sat	15
		42	0320_KNF	Severe	Severe	40-120%	Unsuit	3
		48	0302_KNF	Moderate	Severe	0-80%	Sat	5
			0312_KNF	Severe	Severe	0-80%	Unsat	6

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
	Burn Only	19	0406_KNF	Severe	Severe	15-40%	Unsat	17
		27	0304_KNF	Moderate	Slight	0-15%	Sat	333
			0324_KNF	Moderate	Slight	0-15%	Sat	808
			0401a_KNF	Moderate	Slight	0-15%	Sat	14
			0537a_KNF	Moderate	Slight	0-15%	Sat	14
		29	0325_KNF	Moderate	Slight	0-15%	Sat	345
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	26
		36	0300a_KNF	Moderate	Mod	15-40%	Sat	170
			0310a_KNF	Moderate	Mod	15-40%	Sat	969
		39	0305_KNF	Moderate	Slight	0-15%	Sat	654
			0563_KNF	Moderate	Slight	0-15%	Sat	0
		41	0311_KNF	Severe	Severe	15-40%	Unsat	616
		42	0320_KNF	Severe	Severe	40-120%	Unsuit	58
		46	0599_KNF	NA	Slight	0-15%	Sat	26
		48	0302_KNF	Moderate	Severe	0-80%	Sat	43
			0312_KNF	Severe	Severe	0-80%	Unsat	133
			0322_KNF	Severe	Severe	0-80%	Sat	1
	Grassland Restoration	10	0037_KNF	NA	Slight	0-5%	Sat	11
		27	0401a_KNF	Moderate	Slight	0-15%	Sat	2
		29	0325_KNF	Moderate	Slight	0-15%	Sat	1
	Higher Intensity Mechanical	6	0507_KNF	NA	Slight	0-15%	Sat	0
		10	0037_KNF	NA	Slight	0-5%	Sat	2
		27	0324_KNF	Moderate	Slight	0-15%	Sat	52
			0401a_KNF	Moderate	Slight	0-15%	Sat	129

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
			0537a_KNF	Moderate	Slight	0-15%	Sat	147
		29	0325_KNF	Moderate	Slight	0-15%	Sat	0
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	27
		36	0310a_KNF	Moderate	Mod	15-40%	Sat	4
		39	0305_KNF	Moderate	Slight	0-15%	Sat	2
			0405_KNF	Moderate	Slight	0-15%	Sat	2
			0563_KNF	Moderate	Slight	0-15%	Sat	43
		41	0311_KNF	Severe	Severe	15-40%	Unsat	2
		48	0312_KNF	Severe	Severe	0-80%	Unsat	0
	Lower Intensity Mechanical	1	0006_KNF	NA	Slight	0-5%	Sat	1
		10	0037_KNF	NA	Slight	0-5%	Sat	0
		27	0304_KNF	Moderate	Slight	0-15%	Sat	313
			0324_KNF	Moderate	Slight	0-15%	Sat	367
			0401a_KNF	Moderate	Slight	0-15%	Sat	41
			0537a_KNF	Moderate	Slight	0-15%	Sat	36
		29	0325_KNF	Moderate	Slight	0-15%	Sat	724
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	8
		36	0300a_KNF	Moderate	Mod	15-40%	Sat	110
			0310a_KNF	Moderate	Mod	15-40%	Sat	165
		39	0305_KNF	Moderate	Slight	0-15%	Sat	128
			0563_KNF	Moderate	Slight	0-15%	Sat	12
		41	0311_KNF	Severe	Severe	15-40%	Unsat	182
		42	0320_KNF	Severe	Severe	40-120%	Unsuit	4
		48	0302_KNF	Moderate	Severe	0-80%	Sat	9
			0312_KNF	Severe	Severe	0-80%	Unsat	6

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
	No Treatment Proposed	10	0037_KNF	NA	Slight	0-5%	Sat	285
		27	0304_KNF	Moderate	Slight	0-15%	Sat	6
			0324_KNF	Moderate	Slight	0-15%	Sat	64
			0401a_KNF	Moderate	Slight	0-15%	Sat	16
		29	0325_KNF	Moderate	Slight	0-15%	Sat	75
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	85
		36	0300a_KNF	Moderate	Mod	15-40%	Sat	602
			0310a_KNF	Moderate	Mod	15-40%	Sat	187
		42	0320_KNF	Severe	Severe	40-120%	Unsuit	292
		48	0302_KNF	Moderate	Severe	0-80%	Sat	236
			0312_KNF	Severe	Severe	0-80%	Unsat	186
			0322_KNF	Severe	Severe	0-80%	Sat	105
								0
	Operational Burn	1	0006_KNF	NA	Slight	0-5%	Sat	47
		10	0037_KNF	NA	Slight	0-5%	Sat	14
		27	0304_KNF	Moderate	Slight	0-15%	Sat	3
			0324_KNF	Moderate	Slight	0-15%	Sat	192
			0401a_KNF	Moderate	Slight	0-15%	Sat	13
			0537a_KNF	Moderate	Slight	0-15%	Sat	10
		29	0325_KNF	Moderate	Slight	0-15%	Sat	59
		36	0300a_KNF	Moderate	Mod	15-40%	Sat	0
			0310a_KNF	Moderate	Mod	15-40%	Sat	47
		39	0305_KNF	Moderate	Slight	0-15%	Sat	20
			0563_KNF	Moderate	Slight	0-15%	Sat	20
		41	0311_KNF	Severe	Severe	15-40%	Unsat	81

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		42	0320_KNF	Severe	Severe	40-120%	Unsuit	1
		46	0599_KNF	NA	Slight	0-15%	Sat	353
	Savanna	10	0037_KNF	NA	Slight	0-5%	Sat	0
		27	0324_KNF	Moderate	Slight	0-15%	Sat	1
			0401a_KNF	Moderate	Slight	0-15%	Sat	64
		29	0325_KNF	Moderate	Slight	0-15%	Sat	2
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	63
		36	0310a_KNF	Moderate	Mod	15-40%	Sat	2
		39	0305_KNF	Moderate	Slight	0-15%	Sat	0
			0405_KNF	Moderate	Slight	0-15%	Sat	2
		48	0312_KNF	Severe	Severe	0-80%	Unsat	0
Mormon Canyon	Burn Only	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	35
		19	0515_CNF	NA	Mod	15-40%	Unsat	38
		23	0582_CNF	Moderate	Slight	0-15%	Sat	14
			0586_CNF	Moderate	Slight	0-15%	Sat	93
		39	0523_CNF	Severe	Slight	0-15%	Sat	105
	Grassland Restoration	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	1
		19	0515_CNF	NA	Mod	15-40%	Unsat	39
		23	0586_CNF	Moderate	Slight	0-15%	Sat	7
		39	0523_CNF	Severe	Slight	0-15%	Sat	22
	Higher Intensity Mechanical	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	0
		19	0515_CNF	NA	Mod	15-40%	Unsat	4
		23	0586_CNF	Moderate	Slight	0-15%	Sat	131
		39	0523_CNF	Severe	Slight	0-15%	Sat	11

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
	Operational Burn	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	58
		9	0050_CNF	NA	Slight	0-5%	Sat	20
		19	0515_CNF	NA	Mod	15-40%	Unsat	39
		23	0582_CNF	Moderate	Slight	0-15%	Sat	0
			0586_CNF	Moderate	Slight	0-15%	Sat	12
		39	0523_CNF	Severe	Slight	0-15%	Sat	2
	Savanna	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	3
		9	0050_CNF	NA	Slight	0-5%	Sat	0
		19	0515_CNF	NA	Mod	15-40%	Unsat	31
		23	0582_CNF	Moderate	Slight	0-15%	Sat	25
			0586_CNF	Moderate	Slight	0-15%	Sat	257
		39	0523_CNF	Severe	Slight	0-15%	Sat	114
Mormon Lake	Aspen Treatment	11	0585_CNF	Moderate	Slight	0-15%	Sat	14
		23	0582_CNF	Moderate	Slight	0-15%	Sat	11
			0586_CNF	Moderate	Slight	0-15%	Sat	2
		32	0565_CNF	Severe	Severe	15-40%	Sat	1
			0584_CNF	Severe	Severe	15-40%	Sat	19
		48	0653_CNF	Moderate	Mod	0-80%	Sat	11
	Burn Only	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	14
		11	0585_CNF	Moderate	Slight	0-15%	Sat	209
		23	0557_CNF	Severe	Slight	0-15%	Sat	87
			0582_CNF	Moderate	Slight	0-15%	Sat	307
			0586_CNF	Moderate	Slight	0-15%	Sat	230
		32	0565_CNF	Severe	Severe	15-40%	Sat	523
			0584_CNF	Severe	Severe	15-40%	Sat	559

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		42	0575_CNF	Severe	Severe	40-120%	Unsuit	167
		48	0653_CNF	Moderate	Mod	0-80%	Sat	219
			0654_CNF	Moderate	Mod	0-80%	Sat	336
		49	0613_CNF	Severe	Severe	40-120%	Sat	178
	Grassland Restoration	11	0585_CNF	Moderate	Slight	0-15%	Sat	1
		19	0515_CNF	NA	Mod	15-40%	Unsat	2
		32	0584_CNF	Severe	Severe	15-40%	Sat	3
		39	0523_CNF	Severe	Slight	0-15%	Sat	1
	Higher Intensity Mechanical	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	51
		11	0585_CNF	Moderate	Slight	0-15%	Sat	886
		19	0515_CNF	NA	Mod	15-40%	Unsat	0
		23	0582_CNF	Moderate	Slight	0-15%	Sat	677
			0586_CNF	Moderate	Slight	0-15%	Sat	466
		32	0565_CNF	Severe	Severe	15-40%	Sat	87
			0584_CNF	Severe	Severe	15-40%	Sat	225
		42	0575_CNF	Severe	Severe	40-120%	Unsuit	63
		48	0653_CNF	Moderate	Mod	0-80%	Sat	1
			0654_CNF	Moderate	Mod	0-80%	Sat	1
		49	0613_CNF	Severe	Severe	40-120%	Sat	7
	Lower Intensity Mechanical	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	112
		9	0050_CNF	NA	Slight	0-5%	Sat	4
		11	0585_CNF	Moderate	Slight	0-15%	Sat	2107
		19	0515_CNF	NA	Mod	15-40%	Unsat	56
		23	0557_CNF	Severe	Slight	0-15%	Sat	359

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
			0582_CNF	Moderate	Slight	0-15%	Sat	383
			0586_CNF	Moderate	Slight	0-15%	Sat	1442
		32	0565_CNF	Severe	Severe	15-40%	Sat	370
			0584_CNF	Severe	Severe	15-40%	Sat	1023
		42	0575_CNF	Severe	Severe	40-120%	Unsuit	117
		48	0653_CNF	Moderate	Mod	0-80%	Sat	33
			0654_CNF	Moderate	Mod	0-80%	Sat	90
		49	0613_CNF	Severe	Severe	40-120%	Sat	26
								1
	No Treatment Proposed	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	305
		11	0585_CNF	Moderate	Slight	0-15%	Sat	736
		23	0557_CNF	Severe	Slight	0-15%	Sat	29
			0582_CNF	Moderate	Slight	0-15%	Sat	64
			0586_CNF	Moderate	Slight	0-15%	Sat	1188
		32	0565_CNF	Severe	Severe	15-40%	Sat	25
			0584_CNF	Severe	Severe	15-40%	Sat	436
		42	0575_CNF	Severe	Severe	40-120%	Unsuit	21
		48	0653_CNF	Moderate	Mod	0-80%	Sat	298
			0654_CNF	Moderate	Mod	0-80%	Sat	587
		49	0613_CNF	Severe	Severe	40-120%	Sat	354
	Operational Burn	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	272
		9	0050_CNF	NA	Slight	0-5%	Sat	2
		11	0585_CNF	Moderate	Slight	0-15%	Sat	60
		19	0515_CNF	NA	Mod	15-40%	Unsat	62
		23	0582_CNF	Moderate	Slight	0-15%	Sat	83

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
			0586_CNF	Moderate	Slight	0-15%	Sat	14
		32	0565_CNF	Severe	Severe	15-40%	Sat	2
			0584_CNF	Severe	Severe	15-40%	Sat	19
		42	0575_CNF	Severe	Severe	40-120%	Unsuit	1
		48	0653_CNF	Moderate	Mod	0-80%	Sat	0
	Savanna	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	20
		11	0585_CNF	Moderate	Slight	0-15%	Sat	553
		19	0515_CNF	NA	Mod	15-40%	Unsat	8
		23	0557_CNF	Severe	Slight	0-15%	Sat	6
			0582_CNF	Moderate	Slight	0-15%	Sat	135
			0586_CNF	Moderate	Slight	0-15%	Sat	278
		32	0565_CNF	Severe	Severe	15-40%	Sat	48
			0584_CNF	Severe	Severe	15-40%	Sat	402
		42	0575_CNF	Severe	Severe	40-120%	Unsuit	4
		48	0654_CNF	Moderate	Mod	0-80%	Sat	1
								3
Munds Canyon	Aspen Treatment	11	0585_CNF	Moderate	Slight	0-15%	Sat	10
		23	0582_CNF	Moderate	Slight	0-15%	Sat	23
			0586_CNF	Moderate	Slight	0-15%	Sat	12
		32	0565_CNF	Severe	Severe	15-40%	Sat	6
			0584_CNF	Severe	Severe	15-40%	Sat	78
	Burn Only	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	8
		11	0585_CNF	Moderate	Slight	0-15%	Sat	342
		12	0579_CNF	Moderate	Slight	0-15%	Sat	1215
		15	0520_CNF	Severe	Slight	0-15%	Sat	117

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		18	0530_CNF	Moderate	Mod	15-40%	Sat/Unsat	43
		23	0557_CNF	Severe	Slight	0-15%	Sat	76
			0582_CNF	Moderate	Slight	0-15%	Sat	601
			0586_CNF	Moderate	Slight	0-15%	Sat	167
		25	0578_CNF	Severe	Slight	0-15%	Sat	18
		32	0584_CNF	Severe	Severe	15-40%	Sat	1843
		42	0575_CNF	Severe	Severe	40-120%	Unsuit	74
		46	0495_CNF	NA	Slight	0-15%	Sat	3
		48	0653_CNF	Moderate	Mod	0-80%	Sat	122
			0654_CNF	Moderate	Mod	0-80%	Sat	238
		49	0613_CNF	Severe	Severe	40-120%	Sat	94
	Grassland Restoration	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	13
		11	0585_CNF	Moderate	Slight	0-15%	Sat	11
	Higher Intensity Mechanical	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	106
		11	0585_CNF	Moderate	Slight	0-15%	Sat	1796
		12	0579_CNF	Moderate	Slight	0-15%	Sat	547
		15	0520_CNF	Severe	Slight	0-15%	Sat	127
		18	0530_CNF	Moderate	Mod	15-40%	Sat/Unsat	29
		23	0557_CNF	Severe	Slight	0-15%	Sat	1
			0582_CNF	Moderate	Slight	0-15%	Sat	1842
			0586_CNF	Moderate	Slight	0-15%	Sat	869
		25	0578_CNF	Severe	Slight	0-15%	Sat	145
		32	0565_CNF	Severe	Severe	15-40%	Sat	1
			0584_CNF	Severe	Severe	15-40%	Sat	1318

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		42	0575_CNF	Severe	Severe	40-120%	Unsuit	17
		49	0613_CNF	Severe	Severe	40-120%	Sat	0
								1
	Lower Intensity Mechanical	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	91
		11	0585_CNF	Moderate	Slight	0-15%	Sat	3338
		12	0579_CNF	Moderate	Slight	0-15%	Sat	4592
		15	0520_CNF	Severe	Slight	0-15%	Sat	1255
		18	0530_CNF	Moderate	Mod	15-40%	Sat/Unsat	120
		23	0557_CNF	Severe	Slight	0-15%	Sat	77
			0582_CNF	Moderate	Slight	0-15%	Sat	2018
			0586_CNF	Moderate	Slight	0-15%	Sat	2020
		25	0578_CNF	Severe	Slight	0-15%	Sat	528
		32	0565_CNF	Severe	Severe	15-40%	Sat	293
			0584_CNF	Severe	Severe	15-40%	Sat	3639
		42	0575_CNF	Severe	Severe	40-120%	Unsuit	154
		46	0492_CNF	NA	Mod	0-15%	Sat	6
			0495_CNF	NA	Slight	0-15%	Sat	2
		48	0653_CNF	Moderate	Mod	0-80%	Sat	10
			0654_CNF	Moderate	Mod	0-80%	Sat	90
		49	0613_CNF	Severe	Severe	40-120%	Sat	13
								0
	No Treatment Proposed	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	1022
		11	0585_CNF	Moderate	Slight	0-15%	Sat	273
		12	0579_CNF	Moderate	Slight	0-15%	Sat	1726

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		15	0520_CNF	Severe	Slight	0-15%	Sat	316
		18	0530_CNF	Moderate	Mod	15-40%	Sat/Unsat	194
		23	0582_CNF	Moderate	Slight	0-15%	Sat	646
			0586_CNF	Moderate	Slight	0-15%	Sat	10
		25	0578_CNF	Severe	Slight	0-15%	Sat	49
		32	0584_CNF	Severe	Severe	15-40%	Sat	689
		42	0575_CNF	Severe	Severe	40-120%	Unsuit	2
		46	0492_CNF	NA	Mod	0-15%	Sat	12
		48	0653_CNF	Moderate	Mod	0-80%	Sat	73
			0654_CNF	Moderate	Mod	0-80%	Sat	26
		49	0613_CNF	Severe	Severe	40-120%	Sat	12
								45
	Operational Burn	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	655
		11	0585_CNF	Moderate	Slight	0-15%	Sat	63
		12	0579_CNF	Moderate	Slight	0-15%	Sat	51
		15	0520_CNF	Severe	Slight	0-15%	Sat	20
		18	0530_CNF	Moderate	Mod	15-40%	Sat/Unsat	4
		23	0557_CNF	Severe	Slight	0-15%	Sat	6
			0582_CNF	Moderate	Slight	0-15%	Sat	99
			0586_CNF	Moderate	Slight	0-15%	Sat	9
		25	0578_CNF	Severe	Slight	0-15%	Sat	8
		32	0565_CNF	Severe	Severe	15-40%	Sat	14
			0584_CNF	Severe	Severe	15-40%	Sat	22
		42	0575_CNF	Severe	Severe	40-120%	Unsuit	14
		48	0654_CNF	Moderate	Mod	0-80%	Sat	2

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
								6
	Savanna	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	24
		11	0585_CNF	Moderate	Slight	0-15%	Sat	299
		12	0579_CNF	Moderate	Slight	0-15%	Sat	96
		18	0530_CNF	Moderate	Mod	15-40%	Sat/Unsat	0
		23	0582_CNF	Moderate	Slight	0-15%	Sat	447
			0586_CNF	Moderate	Slight	0-15%	Sat	187
		25	0578_CNF	Severe	Slight	0-15%	Sat	19
		32	0565_CNF	Severe	Severe	15-40%	Sat	4
			0584_CNF	Severe	Severe	15-40%	Sat	166
		42	0575_CNF	Severe	Severe	40-120%	Unsuit	0
Pitman Valley-Scholz Lake	Aspen Treatment	32	0525_KNF	Moderate	Severe	15-40%	Unsat	2
		34	0300_KNF	Moderate	Mod	15-40%	Sat	1
		39	0563_KNF	Moderate	Slight	0-15%	Sat	0
		42	0320_KNF	Severe	Severe	40-120%	Unsuit	2
		48	0322_KNF	Severe	Severe	0-80%	Sat	1
	Burn Only	1	0006_KNF	NA	Slight	0-5%	Sat	12
		3	0513_KNF	NA	Slight	0-15%	Sat	2
		4	0440_KNF	NA	Slight	15-40%	Unsat	23
		6	0507_KNF	NA	Slight	0-15%	Sat	0
		10	0037_KNF	NA	Slight	0-5%	Sat	3
		19	0406_KNF	Severe	Severe	15-40%	Unsat	28
		20	0407_KNF	Severe	Severe	15-40%	Unsat	7
		23	0401_KNF	Moderate	Slight	0-15%	Sat	2
			0537_KNF	Moderate	Slight	0-15%	Sat	68

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		27	0324_KNF	Moderate	Slight	0-15%	Sat	350
			0401a_KNF	Moderate	Slight	0-15%	Sat	3
		29	0325_KNF	Moderate	Slight	0-15%	Sat	136
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	102
		34	0300_KNF	Moderate	Mod	15-40%	Sat	161
		39	0405_KNF	Moderate	Slight	0-15%	Sat	0
		42	0320_KNF	Severe	Severe	40-120%	Unsuit	217
		48	0302_KNF	Moderate	Severe	0-80%	Sat	98
			0322_KNF	Severe	Severe	0-80%	Sat	128
	Grassland Restoration	1	0006_KNF	NA	Slight	0-5%	Sat	22
		3	0513_KNF	NA	Slight	0-15%	Sat	978
		6	0507_KNF	NA	Slight	0-15%	Sat	149
		8	0518_KNF	NA	Slight	0-15%	Sat	29
		9	0020_KNF	NA	Slight	0-5%	Sat	1
		10	0037_KNF	NA	Slight	0-5%	Sat	55
		11	0519_KNF	Moderate	Slight	0-15%	Sat	18
		19	0406_KNF	Severe	Severe	15-40%	Unsat	19
		20	0407_KNF	Severe	Severe	15-40%	Unsat	10
		23	0401_KNF	Moderate	Slight	0-15%	Sat	13
			0537_KNF	Moderate	Slight	0-15%	Sat	164
		27	0324_KNF	Moderate	Slight	0-15%	Sat	2
			0401a_KNF	Moderate	Slight	0-15%	Sat	1
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	4
			0525_KNF	Moderate	Severe	15-40%	Unsat	2
		39	0405_KNF	Moderate	Slight	0-15%	Sat	11

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
			0563_KNF	Moderate	Slight	0-15%	Sat	26
	Higher Intensity Mechanical	1	0006_KNF	NA	Slight	0-5%	Sat	21
		3	0513_KNF	NA	Slight	0-15%	Sat	55
		6	0507_KNF	NA	Slight	0-15%	Sat	13
		8	0518_KNF	NA	Slight	0-15%	Sat	0
		9	0020_KNF	NA	Slight	0-5%	Sat	4
		10	0037_KNF	NA	Slight	0-5%	Sat	0
		11	0519_KNF	Moderate	Slight	0-15%	Sat	372
		19	0406_KNF	Severe	Severe	15-40%	Unsat	152
		20	0407_KNF	Severe	Severe	15-40%	Unsat	14
		23	0401_KNF	Moderate	Slight	0-15%	Sat	263
			0537_KNF	Moderate	Slight	0-15%	Sat	2581
		27	0324_KNF	Moderate	Slight	0-15%	Sat	58
			0401a_KNF	Moderate	Slight	0-15%	Sat	249
		29	0325_KNF	Moderate	Slight	0-15%	Sat	38
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	328
			0525_KNF	Moderate	Severe	15-40%	Unsat	42
		34	0300_KNF	Moderate	Mod	15-40%	Sat	235
		39	0405_KNF	Moderate	Slight	0-15%	Sat	93
			0563_KNF	Moderate	Slight	0-15%	Sat	341
		42	0320_KNF	Severe	Severe	40-120%	Unsuit	32
		48	0302_KNF	Moderate	Severe	0-80%	Sat	26
			0322_KNF	Severe	Severe	0-80%	Sat	22
	Lower Intensity Mechanical	1	0006_KNF	NA	Slight	0-5%	Sat	30

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		3	0513_KNF	NA	Slight	0-15%	Sat	14
		4	0440_KNF	NA	Slight	15-40%	Unsat	1
		10	0037_KNF	NA	Slight	0-5%	Sat	6
		11	0519_KNF	Moderate	Slight	0-15%	Sat	34
		19	0406_KNF	Severe	Severe	15-40%	Unsat	106
		20	0407_KNF	Severe	Severe	15-40%	Unsat	43
		23	0401_KNF	Moderate	Slight	0-15%	Sat	75
			0537_KNF	Moderate	Slight	0-15%	Sat	185
		27	0324_KNF	Moderate	Slight	0-15%	Sat	1275
			0401a_KNF	Moderate	Slight	0-15%	Sat	10
		29	0325_KNF	Moderate	Slight	0-15%	Sat	1271
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	303
			0525_KNF	Moderate	Severe	15-40%	Unsat	23
		34	0300_KNF	Moderate	Mod	15-40%	Sat	345
		39	0563_KNF	Moderate	Slight	0-15%	Sat	11
		42	0320_KNF	Severe	Severe	40-120%	Unsuit	10
		43	0431_KNF	Severe	Severe	40-120%	Unsuit	5
		48	0302_KNF	Moderate	Severe	0-80%	Sat	7
			0322_KNF	Severe	Severe	0-80%	Sat	6
	No Treatment Proposed	1	0006_KNF	NA	Slight	0-5%	Sat	610
		3	0513_KNF	NA	Slight	0-15%	Sat	1744
		8	0518_KNF	NA	Slight	0-15%	Sat	158
		9	0020_KNF	NA	Slight	0-5%	Sat	411
		10	0037_KNF	NA	Slight	0-5%	Sat	669
		11	0519_KNF	Moderate	Slight	0-15%	Sat	3399

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		19	0406_KNF	Severe	Severe	15-40%	Unsat	39
		23	0401_KNF	Moderate	Slight	0-15%	Sat	797
			0537_KNF	Moderate	Slight	0-15%	Sat	2161
		27	0324_KNF	Moderate	Slight	0-15%	Sat	356
			0401a_KNF	Moderate	Slight	0-15%	Sat	32
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	180
			0525_KNF	Moderate	Severe	15-40%	Unsat	171
		33	0310_KNF	Moderate	Mod	15-40%	Sat	113
		34	0300_KNF	Moderate	Mod	15-40%	Sat	2
		39	0563_KNF	Moderate	Slight	0-15%	Sat	18
		41	0311_KNF	Severe	Severe	15-40%	Unsat	51
		42	0320_KNF	Severe	Severe	40-120%	Unsuit	59
		48	0302_KNF	Moderate	Severe	0-80%	Sat	208
			0322_KNF	Severe	Severe	0-80%	Sat	39
								45
	Operational Burn	1	0006_KNF	NA	Slight	0-5%	Sat	704
		3	0513_KNF	NA	Slight	0-15%	Sat	1986
		4	0440_KNF	NA	Slight	15-40%	Unsat	54
		6	0507_KNF	NA	Slight	0-15%	Sat	282
		8	0518_KNF	NA	Slight	0-15%	Sat	119
		9	0020_KNF	NA	Slight	0-5%	Sat	105
		10	0037_KNF	NA	Slight	0-5%	Sat	291
		11	0519_KNF	Moderate	Slight	0-15%	Sat	13
		19	0406_KNF	Severe	Severe	15-40%	Unsat	84
		20	0407_KNF	Severe	Severe	15-40%	Unsat	9

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		23	0401_KNF	Moderate	Slight	0-15%	Sat	9
			0537_KNF	Moderate	Slight	0-15%	Sat	189
		27	0324_KNF	Moderate	Slight	0-15%	Sat	13
			0401a_KNF	Moderate	Slight	0-15%	Sat	16
		29	0325_KNF	Moderate	Slight	0-15%	Sat	50
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	20
		39	0405_KNF	Moderate	Slight	0-15%	Sat	57
			0563_KNF	Moderate	Slight	0-15%	Sat	28
		43	0431_KNF	Severe	Severe	40-120%	Unsuit	55
	Savanna	1	0006_KNF	NA	Slight	0-5%	Sat	7
		3	0513_KNF	NA	Slight	0-15%	Sat	63
		6	0507_KNF	NA	Slight	0-15%	Sat	8
		8	0518_KNF	NA	Slight	0-15%	Sat	2
		9	0020_KNF	NA	Slight	0-5%	Sat	1
		10	0037_KNF	NA	Slight	0-5%	Sat	3
		11	0519_KNF	Moderate	Slight	0-15%	Sat	186
		19	0406_KNF	Severe	Severe	15-40%	Unsat	47
		23	0401_KNF	Moderate	Slight	0-15%	Sat	96
			0537_KNF	Moderate	Slight	0-15%	Sat	759
		27	0324_KNF	Moderate	Slight	0-15%	Sat	28
			0401a_KNF	Moderate	Slight	0-15%	Sat	42
		29	0325_KNF	Moderate	Slight	0-15%	Sat	6
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	83
			0525_KNF	Moderate	Severe	15-40%	Unsat	26
		39	0405_KNF	Moderate	Slight	0-15%	Sat	58

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
			0563_KNF	Moderate	Slight	0-15%	Sat	123
		43	0431_KNF	Severe	Severe	40-120%	Unsuit	27
Porcupine Canyon-Walnut Creek	No Treatment Proposed							71
Pumphouse Wash	Burn Only	1	0053_CNF	NA	Slight	0-5%	Sat	9
		2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	14
		10	0060_CNF	NA	Slight	0-5%	Sat	18
		11	0585_CNF	Moderate	Slight	0-15%	Sat	252
		23	0582_CNF	Moderate	Slight	0-15%	Sat	521
		24	0546_CNF	Severe	Slight	0-15%	Sat	556
		25	0578_CNF	Severe	Slight	0-15%	Sat	66
		27	0536_CNF	Severe	Slight	0-15%	Sat	55
			0570_CNF	Moderate	Slight	0-15%	Sat	60
		32	0550_CNF	Moderate	Mod	15-40%	Sat	89
			0584_CNF	Severe	Severe	15-40%	Sat	414
		44	0555_CNF	Severe	Severe	40-120%	Sat	945
		47	0471_CNF	NA	Severe	15-120%	Unsuit	28
	Grassland Restoration	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	1
		23	0582_CNF	Moderate	Slight	0-15%	Sat	0
	Higher Intensity Mechanical	1	0053_CNF	NA	Slight	0-5%	Sat	12
		2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	34
		11	0585_CNF	Moderate	Slight	0-15%	Sat	196
		12	0579_CNF	Moderate	Slight	0-15%	Sat	65
		23	0582_CNF	Moderate	Slight	0-15%	Sat	2064
		24	0546_CNF	Severe	Slight	0-15%	Sat	72

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		25	0578_CNF	Severe	Slight	0-15%	Sat	82
		27	0536_CNF	Severe	Slight	0-15%	Sat	328
			0570_CNF	Moderate	Slight	0-15%	Sat	512
		32	0550_CNF	Moderate	Mod	15-40%	Sat	112
			0584_CNF	Severe	Severe	15-40%	Sat	627
		44	0555_CNF	Severe	Severe	40-120%	Sat	56
		47	0471_CNF	NA	Severe	15-120%	Unsuit	9
	Lower Intensity Mechanical	1	0053_CNF	NA	Slight	0-5%	Sat	1
		2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	34
		10	0060_CNF	NA	Slight	0-5%	Sat	6
		11	0585_CNF	Moderate	Slight	0-15%	Sat	1065
		12	0579_CNF	Moderate	Slight	0-15%	Sat	174
		23	0582_CNF	Moderate	Slight	0-15%	Sat	2897
			0586_CNF	Moderate	Slight	0-15%	Sat	1
		24	0546_CNF	Severe	Slight	0-15%	Sat	673
		25	0578_CNF	Severe	Slight	0-15%	Sat	289
		27	0536_CNF	Severe	Slight	0-15%	Sat	52
			0570_CNF	Moderate	Slight	0-15%	Sat	141
		32	0550_CNF	Moderate	Mod	15-40%	Sat	98
			0584_CNF	Severe	Severe	15-40%	Sat	786
		42	0575_CNF	Severe	Severe	40-120%	Unsuit	3
		44	0555_CNF	Severe	Severe	40-120%	Sat	235
		47	0471_CNF	NA	Severe	15-120%	Unsuit	17
	No Treatment Proposed	1	0053_CNF	NA	Slight	0-5%	Sat	806

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	264
		11	0585_CNF	Moderate	Slight	0-15%	Sat	229
		12	0579_CNF	Moderate	Slight	0-15%	Sat	578
		23	0582_CNF	Moderate	Slight	0-15%	Sat	3416
			0586_CNF	Moderate	Slight	0-15%	Sat	10
		24	0546_CNF	Severe	Slight	0-15%	Sat	36
		25	0578_CNF	Severe	Slight	0-15%	Sat	304
		27	0536_CNF	Severe	Slight	0-15%	Sat	2956
			0557a_CNF	Severe	Slight	0-15%	Sat	199
			0570_CNF	Moderate	Slight	0-15%	Sat	4389
		32	0550_CNF	Moderate	Mod	15-40%	Sat	648
			0584_CNF	Severe	Severe	15-40%	Sat	1901
		35	0584a_CNF	Severe	Severe	15-40%	Sat	337
		36	0537_CNF	Severe	Mod	15-40%	Sat	241
		42	0562_CNF	Severe	Severe	40-120%	Sat	75
			0575_CNF	Severe	Severe	40-120%	Unsuit	230
		44	0555_CNF	Severe	Severe	40-120%	Sat	168
		47	0471_CNF	NA	Severe	15-120%	Unsuit	1
	Operational Burn	1	0053_CNF	NA	Slight	0-5%	Sat	34
		2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	76
		11	0585_CNF	Moderate	Slight	0-15%	Sat	0
		12	0579_CNF	Moderate	Slight	0-15%	Sat	1
		23	0582_CNF	Moderate	Slight	0-15%	Sat	52
		24	0546_CNF	Severe	Slight	0-15%	Sat	24
		25	0578_CNF	Severe	Slight	0-15%	Sat	2

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		27	0536_CNF	Severe	Slight	0-15%	Sat	8
		32	0584_CNF	Severe	Severe	15-40%	Sat	2
	Savanna	1	0053_CNF	NA	Slight	0-5%	Sat	2
		2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	1
		11	0585_CNF	Moderate	Slight	0-15%	Sat	48
		23	0582_CNF	Moderate	Slight	0-15%	Sat	467
		27	0536_CNF	Severe	Slight	0-15%	Sat	63
			0570_CNF	Moderate	Slight	0-15%	Sat	25
		32	0550_CNF	Moderate	Mod	15-40%	Sat	1
			0584_CNF	Severe	Severe	15-40%	Sat	108
		44	0555_CNF	Severe	Severe	40-120%	Sat	2
		47	0471_CNF	NA	Severe	15-120%	Unsuit	1
Rabbit Canyon	Burn Only	6	0507_KNF	NA	Slight	0-15%	Sat	2
		19	0515_CNF	NA	Mod	15-40%	Unsat	0
		39	0523_CNF	Severe	Slight	0-15%	Sat	10
	Grassland Restoration	6	0507_KNF	NA	Slight	0-15%	Sat	0
		19	0515_CNF	NA	Mod	15-40%	Unsat	166
		39	0523_CNF	Severe	Slight	0-15%	Sat	33
								0
	Higher Intensity Mechanical	19	0515_CNF	NA	Mod	15-40%	Unsat	1
		39	0523_CNF	Severe	Slight	0-15%	Sat	59
	Operational Burn	6	0507_KNF	NA	Slight	0-15%	Sat	7
		19	0515_CNF	NA	Mod	15-40%	Unsat	0
								0

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
Rain Tank Wash	Burn Only	1	0011_KNF	NA	Slight	0-5%	Sat	0
		11	0265_KNF	Moderate	Mod	0-15%	Sat	44
		13	0275_KNF	Moderate	Slight	0-15%	Sat	527
		16	0276_KNF	Severe	Severe	15-40%	Unsat	6
		23	0290_KNF	Moderate	Slight	0-15%	Sat	102
		37	0283_KNF	Moderate	Slight	0-15%	Sat	679
	Higher Intensity Mechanical	11	0265_KNF	Moderate	Mod	0-15%	Sat	2
		13	0275_KNF	Moderate	Slight	0-15%	Sat	398
		23	0290_KNF	Moderate	Slight	0-15%	Sat	20
		37	0283_KNF	Moderate	Slight	0-15%	Sat	72
		46	0260_KNF	NA	Mod	0-15%	Sat	3
	Lower Intensity Mechanical	11	0265_KNF	Moderate	Mod	0-15%	Sat	10
		13	0275_KNF	Moderate	Slight	0-15%	Sat	234
		23	0290_KNF	Moderate	Slight	0-15%	Sat	176
		37	0283_KNF	Moderate	Slight	0-15%	Sat	347
	Operational Burn	13	0275_KNF	Moderate	Slight	0-15%	Sat	46
		37	0283_KNF	Moderate	Slight	0-15%	Sat	26
	Pine Sage	11	0265_KNF	Moderate	Mod	0-15%	Sat	45
		13	0275_KNF	Moderate	Slight	0-15%	Sat	706
		16	0276_KNF	Severe	Severe	15-40%	Unsat	12
		23	0290_KNF	Moderate	Slight	0-15%	Sat	161
		37	0283_KNF	Moderate	Slight	0-15%	Sat	624
		46	0260_KNF	NA	Mod	0-15%	Sat	7
	WUI PJ Trt	13	0275_KNF	Moderate	Slight	0-15%	Sat	237

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		37	0283_KNF	Moderate	Slight	0-15%	Sat	12
		46	0260_KNF	NA	Mod	0-15%	Sat	143
Rattlesnake Canyon	Burn Only	11	0585_CNF	Moderate	Slight	0-15%	Sat	58
		12	0579_CNF	Moderate	Slight	0-15%	Sat	642
		15	0520_CNF	Severe	Slight	0-15%	Sat	130
		18	0530_CNF	Moderate	Mod	15-40%	Sat/Unsat	218
		23	0582_CNF	Moderate	Slight	0-15%	Sat	96
		25	0578_CNF	Severe	Slight	0-15%	Sat	163
		32	0584_CNF	Severe	Severe	15-40%	Sat	245
		46	0495_CNF	NA	Slight	0-15%	Sat	71
	Higher Intensity Mechanical	12	0579_CNF	Moderate	Slight	0-15%	Sat	65
		18	0530_CNF	Moderate	Mod	15-40%	Sat/Unsat	13
		23	0582_CNF	Moderate	Slight	0-15%	Sat	184
		25	0578_CNF	Severe	Slight	0-15%	Sat	0
		32	0565_CNF	Severe	Severe	15-40%	Sat	1
			0584_CNF	Severe	Severe	15-40%	Sat	58
	Lower Intensity Mechanical	11	0585_CNF	Moderate	Slight	0-15%	Sat	25
		12	0579_CNF	Moderate	Slight	0-15%	Sat	54
		15	0520_CNF	Severe	Slight	0-15%	Sat	130
		18	0530_CNF	Moderate	Mod	15-40%	Sat/Unsat	57
		23	0582_CNF	Moderate	Slight	0-15%	Sat	18
		25	0578_CNF	Severe	Slight	0-15%	Sat	15
		32	0565_CNF	Severe	Severe	15-40%	Sat	175
			0584_CNF	Severe	Severe	15-40%	Sat	201

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		46	0495_CNF	NA	Slight	0-15%	Sat	106
		47	0430_CNF	NA	Mod	15-120%	Unsuit	53
			0493_CNF	NA	Mod	15-120%	Sat	2
	No Treatment Proposed	15	0520_CNF	Severe	Slight	0-15%	Sat	2
	Operational Burn	12	0579_CNF	Moderate	Slight	0-15%	Sat	11
		15	0520_CNF	Severe	Slight	0-15%	Sat	5
		18	0530_CNF	Moderate	Mod	15-40%	Sat/Unsat	0
		23	0582_CNF	Moderate	Slight	0-15%	Sat	1
		25	0578_CNF	Severe	Slight	0-15%	Sat	7
		32	0565_CNF	Severe	Severe	15-40%	Sat	2
			0584_CNF	Severe	Severe	15-40%	Sat	78
		46	0495_CNF	NA	Slight	0-15%	Sat	91
	Savanna	23	0582_CNF	Moderate	Slight	0-15%	Sat	64
		32	0565_CNF	Severe	Severe	15-40%	Sat	30
			0584_CNF	Severe	Severe	15-40%	Sat	5
Rattlesnake Wash	Burn Only	19	0406_KNF	Severe	Severe	15-40%	Unsat	0
		39	0405_KNF	Moderate	Slight	0-15%	Sat	42
			0563_KNF	Moderate	Slight	0-15%	Sat	2
	Higher Intensity Mechanical	14	0565_KNF	Severe	Slight	0-15%	Sat	0
		19	0406_KNF	Severe	Severe	15-40%	Unsat	42
		39	0405_KNF	Moderate	Slight	0-15%	Sat	104
			0563_KNF	Moderate	Slight	0-15%	Sat	56
		41	0564_KNF	Severe	Severe	15-40%	Unsat	27
		46	0587_KNF	NA	Slight	0-15%	Sat	0

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
	Operational Burn	14	0565_KNF	Severe	Slight	0-15%	Sat	23
		19	0406_KNF	Severe	Severe	15-40%	Unsat	129
		39	0405_KNF	Moderate	Slight	0-15%	Sat	122
			0563_KNF	Moderate	Slight	0-15%	Sat	47
		41	0564_KNF	Severe	Severe	15-40%	Unsat	10
	Savanna	6	0507_KNF	NA	Slight	0-15%	Sat	0
		19	0406_KNF	Severe	Severe	15-40%	Unsat	2
		39	0405_KNF	Moderate	Slight	0-15%	Sat	12
			0563_KNF	Moderate	Slight	0-15%	Sat	88
		41	0564_KNF	Severe	Severe	15-40%	Unsat	0
		46	0587_KNF	NA	Slight	0-15%	Sat	0
Red Horse Wash Headwaters	Burn Only	1	0009_KNF	NA	Slight	0-5%	Sat	37
		11	0265_KNF	Moderate	Mod	0-15%	Sat	1
		13	0275_KNF	Moderate	Slight	0-15%	Sat	15
		23	0290_KNF	Moderate	Slight	0-15%	Sat	498
		33	0291_KNF	Moderate	Mod	15-40%	Unsat	160
		37	0283_KNF	Moderate	Slight	0-15%	Sat	4
		42	0681_KNF	Severe	Severe	40-120%	Sat	0
	Higher Intensity Mechanical	1	0009_KNF	NA	Slight	0-5%	Sat	5
		11	0265_KNF	Moderate	Mod	0-15%	Sat	14
		13	0275_KNF	Moderate	Slight	0-15%	Sat	48
		23	0290_KNF	Moderate	Slight	0-15%	Sat	443
		33	0291_KNF	Moderate	Mod	15-40%	Unsat	194
		37	0283_KNF	Moderate	Slight	0-15%	Sat	134
		38	0284_KNF	Moderate	Severe	15-40%	Unsat	34

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		42	0681_KNF	Severe	Severe	40-120%	Sat	2
	Lower Intensity Mechanical	1	0009_KNF	NA	Slight	0-5%	Sat	9
		11	0265_KNF	Moderate	Mod	0-15%	Sat	35
		13	0275_KNF	Moderate	Slight	0-15%	Sat	114
		17	0266_KNF	Moderate	Severe	15-40%	Unsat	27
		23	0290_KNF	Moderate	Slight	0-15%	Sat	3040
		33	0291_KNF	Moderate	Mod	15-40%	Unsat	1191
		37	0283_KNF	Moderate	Slight	0-15%	Sat	89
		38	0284_KNF	Moderate	Severe	15-40%	Unsat	40
		42	0681_KNF	Severe	Severe	40-120%	Sat	0
	No Treatment Proposed	13	0275_KNF	Moderate	Slight	0-15%	Sat	86
		16	0276_KNF	Severe	Severe	15-40%	Unsat	16
		23	0290_KNF	Moderate	Slight	0-15%	Sat	602
		33	0291_KNF	Moderate	Mod	15-40%	Unsat	46
		37	0283_KNF	Moderate	Slight	0-15%	Sat	1110
		38	0284_KNF	Moderate	Severe	15-40%	Unsat	55
		42	0681_KNF	Severe	Severe	40-120%	Sat	0
	Operational Burn	13	0275_KNF	Moderate	Slight	0-15%	Sat	97
		23	0290_KNF	Moderate	Slight	0-15%	Sat	83
		33	0291_KNF	Moderate	Mod	15-40%	Unsat	10
		37	0283_KNF	Moderate	Slight	0-15%	Sat	211
		38	0284_KNF	Moderate	Severe	15-40%	Unsat	32
	Pine Sage	13	0275_KNF	Moderate	Slight	0-15%	Sat	118
		23	0290_KNF	Moderate	Slight	0-15%	Sat	49

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		33	0291_KNF	Moderate	Mod	15-40%	Unsat	14
		37	0283_KNF	Moderate	Slight	0-15%	Sat	172
		38	0284_KNF	Moderate	Severe	15-40%	Unsat	1
Sawmill Tank	Aspen Treatment	27	0401a_KNF	Moderate	Slight	0-15%	Sat	5
			0537a_KNF	Moderate	Slight	0-15%	Sat	0
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	2
	Burn Only	23	0537_KNF	Moderate	Slight	0-15%	Sat	31
		27	0401a_KNF	Moderate	Slight	0-15%	Sat	6
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	1
	Grassland Restoration	1	0006_KNF	NA	Slight	0-5%	Sat	8
		3	0513_KNF	NA	Slight	0-15%	Sat	166
		6	0507_KNF	NA	Slight	0-15%	Sat	18
		23	0537_KNF	Moderate	Slight	0-15%	Sat	0
		27	0401a_KNF	Moderate	Slight	0-15%	Sat	11
			0537a_KNF	Moderate	Slight	0-15%	Sat	11
		29	0325_KNF	Moderate	Slight	0-15%	Sat	3
		39	0563_KNF	Moderate	Slight	0-15%	Sat	0
	Higher Intensity Mechanical	1	0006_KNF	NA	Slight	0-5%	Sat	21
		3	0513_KNF	NA	Slight	0-15%	Sat	25
		6	0507_KNF	NA	Slight	0-15%	Sat	5
		8	0518_KNF	NA	Slight	0-15%	Sat	7
		11	0519_KNF	Moderate	Slight	0-15%	Sat	245
		23	0537_KNF	Moderate	Slight	0-15%	Sat	1084
		27	0401a_KNF	Moderate	Slight	0-15%	Sat	902

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
			0537a_KNF	Moderate	Slight	0-15%	Sat	298
		29	0325_KNF	Moderate	Slight	0-15%	Sat	30
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	540
			0525_KNF	Moderate	Severe	15-40%	Unsat	48
		36	0300a_KNF	Moderate	Mod	15-40%	Sat	0
		39	0563_KNF	Moderate	Slight	0-15%	Sat	227
		41	0564_KNF	Severe	Severe	15-40%	Unsat	14
	Lower Intensity Mechanical	1	0006_KNF	NA	Slight	0-5%	Sat	1
		3	0513_KNF	NA	Slight	0-15%	Sat	6
		4	0440_KNF	NA	Slight	15-40%	Unsat	23
		11	0519_KNF	Moderate	Slight	0-15%	Sat	31
		23	0537_KNF	Moderate	Slight	0-15%	Sat	269
		27	0401a_KNF	Moderate	Slight	0-15%	Sat	164
			0537a_KNF	Moderate	Slight	0-15%	Sat	2
		29	0325_KNF	Moderate	Slight	0-15%	Sat	94
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	141
			0525_KNF	Moderate	Severe	15-40%	Unsat	26
		39	0563_KNF	Moderate	Slight	0-15%	Sat	5
	No Treatment Proposed	1	0006_KNF	NA	Slight	0-5%	Sat	120
		3	0513_KNF	NA	Slight	0-15%	Sat	823
		8	0518_KNF	NA	Slight	0-15%	Sat	192
		10	0037_KNF	NA	Slight	0-5%	Sat	53
		11	0519_KNF	Moderate	Slight	0-15%	Sat	138
		23	0537_KNF	Moderate	Slight	0-15%	Sat	933

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		27	0401a_KNF	Moderate	Slight	0-15%	Sat	130
			0537a_KNF	Moderate	Slight	0-15%	Sat	179
		29	0325_KNF	Moderate	Slight	0-15%	Sat	1066
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	35
		36	0300a_KNF	Moderate	Mod	15-40%	Sat	228
		42	0320_KNF	Severe	Severe	40-120%	Unsuit	215
		48	0302_KNF	Moderate	Severe	0-80%	Sat	107
			0312_KNF	Severe	Severe	0-80%	Unsat	0
			0322_KNF	Severe	Severe	0-80%	Sat	79
	Operational Burn	1	0006_KNF	NA	Slight	0-5%	Sat	103
		3	0513_KNF	NA	Slight	0-15%	Sat	3696
		4	0440_KNF	NA	Slight	15-40%	Unsat	96
		6	0507_KNF	NA	Slight	0-15%	Sat	0
		8	0518_KNF	NA	Slight	0-15%	Sat	17
		10	0037_KNF	NA	Slight	0-5%	Sat	35
		11	0519_KNF	Moderate	Slight	0-15%	Sat	11
		23	0537_KNF	Moderate	Slight	0-15%	Sat	50
		27	0401a_KNF	Moderate	Slight	0-15%	Sat	49
			0537a_KNF	Moderate	Slight	0-15%	Sat	41
		29	0325_KNF	Moderate	Slight	0-15%	Sat	31
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	28
			0525_KNF	Moderate	Severe	15-40%	Unsat	1
		39	0563_KNF	Moderate	Slight	0-15%	Sat	59
	Savanna	1	0006_KNF	NA	Slight	0-5%	Sat	31
		3	0513_KNF	NA	Slight	0-15%	Sat	19

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		8	0518_KNF	NA	Slight	0-15%	Sat	8
		11	0519_KNF	Moderate	Slight	0-15%	Sat	60
		23	0537_KNF	Moderate	Slight	0-15%	Sat	362
		27	0401a_KNF	Moderate	Slight	0-15%	Sat	85
			0537a_KNF	Moderate	Slight	0-15%	Sat	76
		29	0325_KNF	Moderate	Slight	0-15%	Sat	7
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	33
			0525_KNF	Moderate	Severe	15-40%	Unsat	22
		39	0563_KNF	Moderate	Slight	0-15%	Sat	41
		41	0564_KNF	Severe	Severe	15-40%	Unsat	2
Sawmill Wash	Burn Only	11	0585_CNF	Moderate	Slight	0-15%	Sat	270
		12	0579_CNF	Moderate	Slight	0-15%	Sat	84
		23	0582_CNF	Moderate	Slight	0-15%	Sat	112
			0586_CNF	Moderate	Slight	0-15%	Sat	0
		25	0578_CNF	Severe	Slight	0-15%	Sat	2
		32	0565_CNF	Severe	Severe	15-40%	Sat	91
			0584_CNF	Severe	Severe	15-40%	Sat	94
		39	0523_CNF	Severe	Slight	0-15%	Sat	5
		48	0653_CNF	Moderate	Mod	0-80%	Sat	164
			0654_CNF	Moderate	Mod	0-80%	Sat	241
		49	0613_CNF	Severe	Severe	40-120%	Sat	8
	Grassland Restoration	19	0515_CNF	NA	Mod	15-40%	Unsat	21
		25	0578_CNF	Severe	Slight	0-15%	Sat	2
		39	0523_CNF	Severe	Slight	0-15%	Sat	13
	Higher Intensity	9	0050_CNF	NA	Slight	0-5%	Sat	7

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
	Mechanical							
		11	0585_CNF	Moderate	Slight	0-15%	Sat	550
		12	0579_CNF	Moderate	Slight	0-15%	Sat	67
		19	0515_CNF	NA	Mod	15-40%	Unsat	16
		23	0582_CNF	Moderate	Slight	0-15%	Sat	494
			0586_CNF	Moderate	Slight	0-15%	Sat	262
		25	0578_CNF	Severe	Slight	0-15%	Sat	69
		32	0565_CNF	Severe	Severe	15-40%	Sat	146
			0584_CNF	Severe	Severe	15-40%	Sat	208
		39	0523_CNF	Severe	Slight	0-15%	Sat	105
		48	0653_CNF	Moderate	Mod	0-80%	Sat	1
			0654_CNF	Moderate	Mod	0-80%	Sat	18
	Lower Intensity Mechanical	9	0050_CNF	NA	Slight	0-5%	Sat	15
		11	0585_CNF	Moderate	Slight	0-15%	Sat	799
		12	0579_CNF	Moderate	Slight	0-15%	Sat	561
		19	0515_CNF	NA	Mod	15-40%	Unsat	11
		23	0582_CNF	Moderate	Slight	0-15%	Sat	240
			0586_CNF	Moderate	Slight	0-15%	Sat	35
		25	0578_CNF	Severe	Slight	0-15%	Sat	432
		32	0565_CNF	Severe	Severe	15-40%	Sat	166
			0584_CNF	Severe	Severe	15-40%	Sat	200
		39	0523_CNF	Severe	Slight	0-15%	Sat	219
		48	0653_CNF	Moderate	Mod	0-80%	Sat	109
			0654_CNF	Moderate	Mod	0-80%	Sat	32
	No Treatment	11	0585_CNF	Moderate	Slight	0-15%	Sat	31

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
	Proposed							
		23	0582_CNF	Moderate	Slight	0-15%	Sat	40
		32	0565_CNF	Severe	Severe	15-40%	Sat	18
			0584_CNF	Severe	Severe	15-40%	Sat	8
		48	0653_CNF	Moderate	Mod	0-80%	Sat	215
			0654_CNF	Moderate	Mod	0-80%	Sat	316
		49	0613_CNF	Severe	Severe	40-120%	Sat	85
	Operational Burn	9	0050_CNF	NA	Slight	0-5%	Sat	26
		11	0585_CNF	Moderate	Slight	0-15%	Sat	7
		19	0515_CNF	NA	Mod	15-40%	Unsat	20
		23	0582_CNF	Moderate	Slight	0-15%	Sat	36
			0586_CNF	Moderate	Slight	0-15%	Sat	6
		32	0565_CNF	Severe	Severe	15-40%	Sat	15
		39	0523_CNF	Severe	Slight	0-15%	Sat	0
		48	0653_CNF	Moderate	Mod	0-80%	Sat	19
			0654_CNF	Moderate	Mod	0-80%	Sat	8
	Savanna	9	0050_CNF	NA	Slight	0-5%	Sat	1
		11	0585_CNF	Moderate	Slight	0-15%	Sat	110
		12	0579_CNF	Moderate	Slight	0-15%	Sat	4
		23	0582_CNF	Moderate	Slight	0-15%	Sat	88
			0586_CNF	Moderate	Slight	0-15%	Sat	95
		25	0578_CNF	Severe	Slight	0-15%	Sat	4
		32	0584_CNF	Severe	Severe	15-40%	Sat	34
		39	0523_CNF	Severe	Slight	0-15%	Sat	7
		48	0653_CNF	Moderate	Mod	0-80%	Sat	0

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
Secret Canyon	No Treatment Proposed	11	0585_CNF	Moderate	Slight	0-15%	Sat	222
		12	0579_CNF	Moderate	Slight	0-15%	Sat	0
		23	0582_CNF	Moderate	Slight	0-15%	Sat	87
			0586_CNF	Moderate	Slight	0-15%	Sat	488
		24	0546_CNF	Severe	Slight	0-15%	Sat	978
		32	0549_CNF	Moderate	Mod	15-40%	Sat	517
			0584_CNF	Severe	Severe	15-40%	Sat	869
		44	0555_CNF	Severe	Severe	40-120%	Sat	464
		47	0471_CNF	NA	Severe	15-120%	Unsuit	49
		48	0651_CNF	Severe	Severe	0-80%	Sat	52
			0654_CNF	Moderate	Mod	0-80%	Sat	36
								10
Sinclair Wash	Higher Intensity Mechanical	27	0536_CNF	Severe	Slight	0-15%	Sat	96
	No Treatment Proposed	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	144
		3	0595_CNF	NA	Slight	0-15%	Sat	16
		23	0582_CNF	Moderate	Slight	0-15%	Sat	494
			0586_CNF	Moderate	Slight	0-15%	Sat	549
		27	0536_CNF	Severe	Slight	0-15%	Sat	1302
			0557a_CNF	Severe	Slight	0-15%	Sat	238
			0570_CNF	Moderate	Slight	0-15%	Sat	1255
			0582a_CNF	Moderate	Slight	0-15%	Sat	145
		32	0584_CNF	Severe	Severe	15-40%	Sat	95
		35	0565a_CNF	Severe	Severe	15-40%	Sat	172
			0584a_CNF	Severe	Severe	15-40%	Sat	238

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		36	0537_CNF	Severe	Mod	15-40%	Sat	103
		42	0562_CNF	Severe	Severe	40-120%	Sat	108
								1746
	Operational Burn	27	0536_CNF	Severe	Slight	0-15%	Sat	64
Smoot Lake	Burn Only	19	0406_KNF	Severe	Severe	15-40%	Unsat	8
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	24
		39	0405_KNF	Moderate	Slight	0-15%	Sat	58
			0563_KNF	Moderate	Slight	0-15%	Sat	75
	Grassland Restoration	6	0507_KNF	NA	Slight	0-15%	Sat	172
		39	0405_KNF	Moderate	Slight	0-15%	Sat	0
			0563_KNF	Moderate	Slight	0-15%	Sat	31
	Higher Intensity Mechanical	6	0507_KNF	NA	Slight	0-15%	Sat	22
		19	0406_KNF	Severe	Severe	15-40%	Unsat	101
		23	0401_KNF	Moderate	Slight	0-15%	Sat	1
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	37
		39	0405_KNF	Moderate	Slight	0-15%	Sat	197
			0563_KNF	Moderate	Slight	0-15%	Sat	537
		41	0564_KNF	Severe	Severe	15-40%	Unsat	12
		43	0431_KNF	Severe	Severe	40-120%	Unsuit	10
	Lower Intensity Mechanical	19	0406_KNF	Severe	Severe	15-40%	Unsat	28
		39	0405_KNF	Moderate	Slight	0-15%	Sat	0
			0563_KNF	Moderate	Slight	0-15%	Sat	6
		47	0476_KNF	NA	Severe	15-120%	Unsat	1
	No Treatment	6	0507_KNF	NA	Slight	0-15%	Sat	138

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
	Proposed							
		39	0405_KNF	Moderate	Slight	0-15%	Sat	16
			0563_KNF	Moderate	Slight	0-15%	Sat	7
	Operational Burn	6	0507_KNF	NA	Slight	0-15%	Sat	87
		19	0406_KNF	Severe	Severe	15-40%	Unsat	40
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	4
		39	0405_KNF	Moderate	Slight	0-15%	Sat	8
			0563_KNF	Moderate	Slight	0-15%	Sat	65
		43	0431_KNF	Severe	Severe	40-120%	Unsuit	7
		47	0476_KNF	NA	Severe	15-120%	Unsat	0
	Savanna	6	0507_KNF	NA	Slight	0-15%	Sat	11
		19	0406_KNF	Severe	Severe	15-40%	Unsat	5
		23	0401_KNF	Moderate	Slight	0-15%	Sat	1
		39	0405_KNF	Moderate	Slight	0-15%	Sat	2
			0563_KNF	Moderate	Slight	0-15%	Sat	125
		43	0431_KNF	Severe	Severe	40-120%	Unsuit	1
Spring Creek	No Treatment Proposed	11	0585_CNF	Moderate	Slight	0-15%	Sat	73
		15	0572_CNF	Severe	Slight	0-15%	Sat	457
		23	0586_CNF	Moderate	Slight	0-15%	Sat	0
		24	0546_CNF	Severe	Slight	0-15%	Sat	233
		32	0549_CNF	Moderate	Mod	15-40%	Sat	333
			0550_CNF	Moderate	Mod	15-40%	Sat	92
			0584_CNF	Severe	Severe	15-40%	Sat	105
		44	0555_CNF	Severe	Severe	40-120%	Sat	15
		47	0471_CNF	NA	Severe	15-120%	Unsuit	95

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
Telephone Tank	Aspen Treatment	23	0582_CNF	Moderate	Slight	0-15%	Sat	2
		27	0570_CNF	Moderate	Slight	0-15%	Sat	3
		35	0584a_CNF	Severe	Severe	15-40%	Sat	5
	Burn Only	27	0557a_CNF	Severe	Slight	0-15%	Sat	9
			0570_CNF	Moderate	Slight	0-15%	Sat	124
		35	0584a_CNF	Severe	Severe	15-40%	Sat	16
		42	0562_CNF	Severe	Severe	40-120%	Sat	54
	Grassland Restoration	3	0595_CNF	NA	Slight	0-15%	Sat	11
		23	0582_CNF	Moderate	Slight	0-15%	Sat	2
	Higher Intensity Mechanical	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	2
		3	0513_KNF	NA	Slight	0-15%	Sat	0
			0595_CNF	NA	Slight	0-15%	Sat	8
		23	0582_CNF	Moderate	Slight	0-15%	Sat	471
		27	0537a_KNF	Moderate	Slight	0-15%	Sat	0
			0557a_CNF	Severe	Slight	0-15%	Sat	68
			0570_CNF	Moderate	Slight	0-15%	Sat	257
		35	0565a_CNF	Severe	Severe	15-40%	Sat	58
			0584a_CNF	Severe	Severe	15-40%	Sat	375
								0
	Lower Intensity Mechanical	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	7
		3	0595_CNF	NA	Slight	0-15%	Sat	1
		23	0582_CNF	Moderate	Slight	0-15%	Sat	137
		27	0557a_CNF	Severe	Slight	0-15%	Sat	110
			0570_CNF	Moderate	Slight	0-15%	Sat	2100

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		35	0565a_CNF	Severe	Severe	15-40%	Sat	38
			0584a_CNF	Severe	Severe	15-40%	Sat	216
	No Treatment Proposed	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	371
		3	0513_KNF	NA	Slight	0-15%	Sat	273
			0595_CNF	NA	Slight	0-15%	Sat	464
		23	0582_CNF	Moderate	Slight	0-15%	Sat	2831
			0586_CNF	Moderate	Slight	0-15%	Sat	2202
		27	0537a_KNF	Moderate	Slight	0-15%	Sat	3
			0557a_CNF	Severe	Slight	0-15%	Sat	155
			0570_CNF	Moderate	Slight	0-15%	Sat	1035
		32	0565_CNF	Severe	Severe	15-40%	Sat	344
			0584_CNF	Severe	Severe	15-40%	Sat	394
		35	0565a_CNF	Severe	Severe	15-40%	Sat	44
			0584a_CNF	Severe	Severe	15-40%	Sat	13
		42	0562_CNF	Severe	Severe	40-120%	Sat	3
								1929
	Operational Burn	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	100
		3	0513_KNF	NA	Slight	0-15%	Sat	11
			0595_CNF	NA	Slight	0-15%	Sat	126
		23	0582_CNF	Moderate	Slight	0-15%	Sat	21
		27	0557a_CNF	Severe	Slight	0-15%	Sat	43
			0570_CNF	Moderate	Slight	0-15%	Sat	21
		35	0565a_CNF	Severe	Severe	15-40%	Sat	11
								0
	Savanna	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	1

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		3	0595_CNF	NA	Slight	0-15%	Sat	4
		23	0582_CNF	Moderate	Slight	0-15%	Sat	200
		27	0557a_CNF	Severe	Slight	0-15%	Sat	41
			0570_CNF	Moderate	Slight	0-15%	Sat	83
		35	0584a_CNF	Severe	Severe	15-40%	Sat	138
Tule Canyon	Aspen Treatment	23	0401_KNF	Moderate	Slight	0-15%	Sat	11
			0537_KNF	Moderate	Slight	0-15%	Sat	1
		26	0010_KNF	Moderate	Slight	0-5%	Sat	11
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	10
			0525_KNF	Moderate	Severe	15-40%	Unsat	13
		42	0539_KNF	Severe	Severe	40-120%	Unsuit	3
	Burn Only	1	0006_KNF	NA	Slight	0-5%	Sat	3
		6	0507_KNF	NA	Slight	0-15%	Sat	9
		11	0519_KNF	Moderate	Slight	0-15%	Sat	263
		23	0401_KNF	Moderate	Slight	0-15%	Sat	193
			0537_KNF	Moderate	Slight	0-15%	Sat	346
		26	0010_KNF	Moderate	Slight	0-5%	Sat	117
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	202
			0525_KNF	Moderate	Severe	15-40%	Unsat	512
		39	0563_KNF	Moderate	Slight	0-15%	Sat	78
			0649_KNF	Moderate	Mod	0-15%	Sat	38
		41	0564_KNF	Severe	Severe	15-40%	Unsat	17
		42	0539_KNF	Severe	Severe	40-120%	Unsuit	285
		49	0540_KNF	Severe	Severe	40-120%	Unsat	9
	Grassland Restoration	1	0006_KNF	NA	Slight	0-5%	Sat	14

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		6	0507_KNF	NA	Slight	0-15%	Sat	482
		11	0519_KNF	Moderate	Slight	0-15%	Sat	26
		23	0537_KNF	Moderate	Slight	0-15%	Sat	66
		26	0010_KNF	Moderate	Slight	0-5%	Sat	1
		32	0525_KNF	Moderate	Severe	15-40%	Unsat	80
		39	0563_KNF	Moderate	Slight	0-15%	Sat	170
			0649_KNF	Moderate	Mod	0-15%	Sat	240
		42	0539_KNF	Severe	Severe	40-120%	Unsuit	4
		46	0543_KNF	NA	Slight	0-15%	Sat	20
			0587_KNF	NA	Slight	0-15%	Sat	26
		47	0541_KNF	NA	Severe	15-120%	Unsuit	19
	Higher Intensity Mechanical	1	0006_KNF	NA	Slight	0-5%	Sat	15
		6	0507_KNF	NA	Slight	0-15%	Sat	13
		11	0519_KNF	Moderate	Slight	0-15%	Sat	1094
		14	0565_KNF	Severe	Slight	0-15%	Sat	30
		23	0401_KNF	Moderate	Slight	0-15%	Sat	308
			0537_KNF	Moderate	Slight	0-15%	Sat	2630
		26	0010_KNF	Moderate	Slight	0-5%	Sat	419
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	55
			0525_KNF	Moderate	Severe	15-40%	Unsat	329
		39	0563_KNF	Moderate	Slight	0-15%	Sat	268
			0649_KNF	Moderate	Mod	0-15%	Sat	7
		41	0564_KNF	Severe	Severe	15-40%	Unsat	17
		42	0539_KNF	Severe	Severe	40-120%	Unsuit	17
		47	0523_KNF	NA	Severe	15-120%	Unsat	3

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
			0541_KNF	NA	Severe	15-120%	Unsuit	0
		49	0540_KNF	Severe	Severe	40-120%	Unsat	4
								1
	Lower Intensity Mechanical	1	0006_KNF	NA	Slight	0-5%	Sat	17
		6	0507_KNF	NA	Slight	0-15%	Sat	31
		11	0519_KNF	Moderate	Slight	0-15%	Sat	968
		14	0565_KNF	Severe	Slight	0-15%	Sat	87
		19	0406_KNF	Severe	Severe	15-40%	Unsat	65
		23	0401_KNF	Moderate	Slight	0-15%	Sat	153
			0537_KNF	Moderate	Slight	0-15%	Sat	2218
		26	0010_KNF	Moderate	Slight	0-5%	Sat	508
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	434
			0525_KNF	Moderate	Severe	15-40%	Unsat	1462
		39	0563_KNF	Moderate	Slight	0-15%	Sat	406
			0649_KNF	Moderate	Mod	0-15%	Sat	34
		41	0564_KNF	Severe	Severe	15-40%	Unsat	6
		42	0539_KNF	Severe	Severe	40-120%	Unsuit	306
		47	0541_KNF	NA	Severe	15-120%	Unsuit	0
		49	0540_KNF	Severe	Severe	40-120%	Unsat	3
	No Treatment Proposed	1	0006_KNF	NA	Slight	0-5%	Sat	41
		6	0507_KNF	NA	Slight	0-15%	Sat	6
		11	0519_KNF	Moderate	Slight	0-15%	Sat	762
		19	0406_KNF	Severe	Severe	15-40%	Unsat	66
		23	0401_KNF	Moderate	Slight	0-15%	Sat	981

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
			0537_KNF	Moderate	Slight	0-15%	Sat	1574
		26	0010_KNF	Moderate	Slight	0-5%	Sat	517
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	698
			0525_KNF	Moderate	Severe	15-40%	Unsat	991
		39	0649_KNF	Moderate	Mod	0-15%	Sat	0
		42	0539_KNF	Severe	Severe	40-120%	Unsuit	107
								14
	Operational Burn	1	0006_KNF	NA	Slight	0-5%	Sat	146
		6	0507_KNF	NA	Slight	0-15%	Sat	544
		11	0519_KNF	Moderate	Slight	0-15%	Sat	323
		14	0565_KNF	Severe	Slight	0-15%	Sat	85
		23	0401_KNF	Moderate	Slight	0-15%	Sat	1
			0537_KNF	Moderate	Slight	0-15%	Sat	184
		26	0010_KNF	Moderate	Slight	0-5%	Sat	45
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	1
			0525_KNF	Moderate	Severe	15-40%	Unsat	205
		39	0563_KNF	Moderate	Slight	0-15%	Sat	28
			0649_KNF	Moderate	Mod	0-15%	Sat	137
		41	0564_KNF	Severe	Severe	15-40%	Unsat	6
		42	0539_KNF	Severe	Severe	40-120%	Unsuit	84
		46	0543_KNF	NA	Slight	0-15%	Sat	49
		47	0541_KNF	NA	Severe	15-120%	Unsuit	10
		49	0540_KNF	Severe	Severe	40-120%	Unsat	1
	Savanna	1	0006_KNF	NA	Slight	0-5%	Sat	33
		6	0507_KNF	NA	Slight	0-15%	Sat	13

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		11	0519_KNF	Moderate	Slight	0-15%	Sat	685
		14	0565_KNF	Severe	Slight	0-15%	Sat	2
		23	0537_KNF	Moderate	Slight	0-15%	Sat	895
		26	0010_KNF	Moderate	Slight	0-5%	Sat	166
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	22
			0525_KNF	Moderate	Severe	15-40%	Unsat	141
		39	0563_KNF	Moderate	Slight	0-15%	Sat	130
			0649_KNF	Moderate	Mod	0-15%	Sat	18
		41	0564_KNF	Severe	Severe	15-40%	Unsat	35
		42	0539_KNF	Severe	Severe	40-120%	Unsuit	29
		49	0540_KNF	Severe	Severe	40-120%	Unsat	2
Upper Cataract Creek	Burn Only	6	0507_KNF	NA	Slight	0-15%	Sat	53
		19	0406_KNF	Severe	Severe	15-40%	Unsat	28
		23	0401_KNF	Moderate	Slight	0-15%	Sat	71
			0537_KNF	Moderate	Slight	0-15%	Sat	25
		39	0405_KNF	Moderate	Slight	0-15%	Sat	4
			0563_KNF	Moderate	Slight	0-15%	Sat	86
		41	0564_KNF	Severe	Severe	15-40%	Unsat	26
		47	0496_KNF	NA	Mod	15-120%	Unsat	1
	Grassland Restoration	6	0507_KNF	NA	Slight	0-15%	Sat	115
		39	0563_KNF	Moderate	Slight	0-15%	Sat	26
		41	0564_KNF	Severe	Severe	15-40%	Unsat	6
	Higher Intensity Mechanical	6	0507_KNF	NA	Slight	0-15%	Sat	22
		14	0565_KNF	Severe	Slight	0-15%	Sat	53

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		19	0406_KNF	Severe	Severe	15-40%	Unsat	21
		23	0401_KNF	Moderate	Slight	0-15%	Sat	95
			0537_KNF	Moderate	Slight	0-15%	Sat	21
		26	0010_KNF	Moderate	Slight	0-5%	Sat	21
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	16
		39	0405_KNF	Moderate	Slight	0-15%	Sat	101
			0563_KNF	Moderate	Slight	0-15%	Sat	374
		41	0564_KNF	Severe	Severe	15-40%	Unsat	191
	No Treatment Proposed	19	0406_KNF	Severe	Severe	15-40%	Unsat	11
		23	0401_KNF	Moderate	Slight	0-15%	Sat	102
			0537_KNF	Moderate	Slight	0-15%	Sat	9
		39	0563_KNF	Moderate	Slight	0-15%	Sat	2
	Operational Burn	6	0507_KNF	NA	Slight	0-15%	Sat	229
		14	0565_KNF	Severe	Slight	0-15%	Sat	85
		19	0406_KNF	Severe	Severe	15-40%	Unsat	114
		23	0401_KNF	Moderate	Slight	0-15%	Sat	96
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	101
		39	0405_KNF	Moderate	Slight	0-15%	Sat	80
			0563_KNF	Moderate	Slight	0-15%	Sat	253
		41	0564_KNF	Severe	Severe	15-40%	Unsat	138
		47	0496_KNF	NA	Mod	15-120%	Unsat	33
			0523_KNF	NA	Severe	15-120%	Unsat	22
	Savanna	6	0507_KNF	NA	Slight	0-15%	Sat	24
		14	0565_KNF	Severe	Slight	0-15%	Sat	10
		19	0406_KNF	Severe	Severe	15-40%	Unsat	35

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		23	0401_KNF	Moderate	Slight	0-15%	Sat	0
		26	0010_KNF	Moderate	Slight	0-5%	Sat	2
		39	0405_KNF	Moderate	Slight	0-15%	Sat	59
			0563_KNF	Moderate	Slight	0-15%	Sat	62
		41	0564_KNF	Severe	Severe	15-40%	Unsat	73
		47	0496_KNF	NA	Mod	15-120%	Unsat	2
Upper Cedar Wash (Local Drainage)	Aspen Treatment	23	0586_CNF	Moderate	Slight	0-15%	Sat	16
		27	0582a_CNF	Moderate	Slight	0-15%	Sat	11
	Burn Only	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	1
		3	0595_CNF	NA	Slight	0-15%	Sat	2
		7	0594_CNF	NA	Slight	0-15%	Sat	0
		23	0582_CNF	Moderate	Slight	0-15%	Sat	3
			0586_CNF	Moderate	Slight	0-15%	Sat	261
		27	0557a_CNF	Severe	Slight	0-15%	Sat	28
			0582a_CNF	Moderate	Slight	0-15%	Sat	1054
		28	0560_CNF	Slight	Slight	0-15%	Sat	266
		35	0584a_CNF	Severe	Severe	15-40%	Sat	65
		42	0562_CNF	Severe	Severe	40-120%	Sat	522
	Grassland Restoration	3	0595_CNF	NA	Slight	0-15%	Sat	11
		27	0582a_CNF	Moderate	Slight	0-15%	Sat	1
	Higher Intensity Mechanical	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	22
		3	0595_CNF	NA	Slight	0-15%	Sat	21
		7	0594_CNF	NA	Slight	0-15%	Sat	2
		19	0515_CNF	NA	Mod	15-40%	Unsat	42

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		23	0582_CNF	Moderate	Slight	0-15%	Sat	19
			0586_CNF	Moderate	Slight	0-15%	Sat	167
		27	0582a_CNF	Moderate	Slight	0-15%	Sat	1247
		28	0560_CNF	Slight	Slight	0-15%	Sat	181
		35	0584a_CNF	Severe	Severe	15-40%	Sat	89
		39	0523_CNF	Severe	Slight	0-15%	Sat	550
		41	0524_CNF	Severe	Severe	15-40%	Sat	67
		42	0562_CNF	Severe	Severe	40-120%	Sat	28
		46	0440_CNF	NA	Slight	0-15%	Sat	4
	Lower Intensity Mechanical	7	0594_CNF	NA	Slight	0-15%	Sat	7
		19	0515_CNF	NA	Mod	15-40%	Unsat	5
		23	0582_CNF	Moderate	Slight	0-15%	Sat	90
			0586_CNF	Moderate	Slight	0-15%	Sat	2
		27	0582a_CNF	Moderate	Slight	0-15%	Sat	116
		28	0560_CNF	Slight	Slight	0-15%	Sat	456
		39	0523_CNF	Severe	Slight	0-15%	Sat	30
		42	0562_CNF	Severe	Severe	40-120%	Sat	116
		46	0440_CNF	NA	Slight	0-15%	Sat	67
	No Treatment Proposed	3	0595_CNF	NA	Slight	0-15%	Sat	145
		7	0594_CNF	NA	Slight	0-15%	Sat	48
		42	0562_CNF	Severe	Severe	40-120%	Sat	16
	Operational Burn	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	14
		3	0595_CNF	NA	Slight	0-15%	Sat	718
		7	0594_CNF	NA	Slight	0-15%	Sat	310

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		19	0515_CNF	NA	Mod	15-40%	Unsat	425
		23	0586_CNF	Moderate	Slight	0-15%	Sat	1
		27	0582a_CNF	Moderate	Slight	0-15%	Sat	74
		28	0560_CNF	Slight	Slight	0-15%	Sat	60
		39	0523_CNF	Severe	Slight	0-15%	Sat	234
		42	0562_CNF	Severe	Severe	40-120%	Sat	38
	Savanna	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	1
		3	0595_CNF	NA	Slight	0-15%	Sat	9
		7	0594_CNF	NA	Slight	0-15%	Sat	1
		19	0515_CNF	NA	Mod	15-40%	Unsat	47
		23	0582_CNF	Moderate	Slight	0-15%	Sat	8
			0586_CNF	Moderate	Slight	0-15%	Sat	26
		27	0557a_CNF	Severe	Slight	0-15%	Sat	0
			0582a_CNF	Moderate	Slight	0-15%	Sat	926
		28	0560_CNF	Slight	Slight	0-15%	Sat	162
		35	0584a_CNF	Severe	Severe	15-40%	Sat	4
		39	0505_CNF	Moderate	Slight	0-15%	Sat	41
			0523_CNF	Severe	Slight	0-15%	Sat	620
		41	0524_CNF	Severe	Severe	15-40%	Sat	38
		42	0562_CNF	Severe	Severe	40-120%	Sat	55
		47	0450_CNF	NA	Mod	15-120%	Sat	0
Upper Deadman Wash	Aspen Treatment	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	0
		3	0595_CNF	NA	Slight	0-15%	Sat	1
		7	0594_CNF	NA	Slight	0-15%	Sat	0
		23	0582_CNF	Moderate	Slight	0-15%	Sat	0

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
			0586_CNF	Moderate	Slight	0-15%	Sat	10
		27	0551_CNF	Moderate	Slight	0-15%	Sat	7
		28	0560_CNF	Slight	Slight	0-15%	Sat	28
		42	0562_CNF	Severe	Severe	40-120%	Sat	39
		48	0653_CNF	Moderate	Mod	0-80%	Sat	12
			0654_CNF	Moderate	Mod	0-80%	Sat	4
		49	0613_CNF	Severe	Severe	40-120%	Sat	7
		50	0610_CNF	Moderate	Mod	0-15%	Sat	168
			0611_CNF	Moderate	Mod	0-15%	Sat	108
	Burn Only	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	2
		3	0595_CNF	NA	Slight	0-15%	Sat	13
		5	0640_CNF	NA	Slight	0-15%	Sat	3
		7	0594_CNF	NA	Slight	0-15%	Sat	11
		11	0585_CNF	Moderate	Slight	0-15%	Sat	136
		23	0582_CNF	Moderate	Slight	0-15%	Sat	127
			0586_CNF	Moderate	Slight	0-15%	Sat	1647
		27	0551_CNF	Moderate	Slight	0-15%	Sat	1471
			0557a_CNF	Severe	Slight	0-15%	Sat	567
		28	0560_CNF	Slight	Slight	0-15%	Sat	786
		35	0565a_CNF	Severe	Severe	15-40%	Sat	8
			0584a_CNF	Severe	Severe	15-40%	Sat	71
		39	0506_CNF	Moderate	Slight	0-15%	Sat	525
			0523_CNF	Severe	Slight	0-15%	Sat	12
		41	0524_CNF	Severe	Severe	15-40%	Sat	27
		42	0562_CNF	Severe	Severe	40-120%	Sat	745

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		46	0473_CNF	NA	Slight	0-15%	Sat	301
		47	0450_CNF	NA	Mod	15-120%	Sat	309
		48	0653_CNF	Moderate	Mod	0-80%	Sat	110
			0654_CNF	Moderate	Mod	0-80%	Sat	374
		49	0613_CNF	Severe	Severe	40-120%	Sat	440
		50	0610_CNF	Moderate	Mod	0-15%	Sat	13
			0611_CNF	Moderate	Mod	0-15%	Sat	426
	Higher Intensity Mechanical	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	2
		3	0595_CNF	NA	Slight	0-15%	Sat	1
		7	0594_CNF	NA	Slight	0-15%	Sat	0
		23	0586_CNF	Moderate	Slight	0-15%	Sat	145
		27	0551_CNF	Moderate	Slight	0-15%	Sat	1
			0582a_CNF	Moderate	Slight	0-15%	Sat	14
		28	0560_CNF	Slight	Slight	0-15%	Sat	315
		42	0562_CNF	Severe	Severe	40-120%	Sat	97
	Lower Intensity Mechanical	3	0595_CNF	NA	Slight	0-15%	Sat	2
		5	0640_CNF	NA	Slight	0-15%	Sat	2
		7	0594_CNF	NA	Slight	0-15%	Sat	3
		23	0586_CNF	Moderate	Slight	0-15%	Sat	136
		27	0551_CNF	Moderate	Slight	0-15%	Sat	1250
			0557a_CNF	Severe	Slight	0-15%	Sat	6
			0582a_CNF	Moderate	Slight	0-15%	Sat	0
		28	0560_CNF	Slight	Slight	0-15%	Sat	734
		35	0553_CNF	Moderate	Slight	15-40%	Sat	22

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
			0565a_CNF	Severe	Severe	15-40%	Sat	18
			0584a_CNF	Severe	Severe	15-40%	Sat	52
		39	0506_CNF	Moderate	Slight	0-15%	Sat	12
		42	0562_CNF	Severe	Severe	40-120%	Sat	178
		46	0473_CNF	NA	Slight	0-15%	Sat	10
		47	0450_CNF	NA	Mod	15-120%	Sat	11
		48	0653_CNF	Moderate	Mod	0-80%	Sat	147
			0654_CNF	Moderate	Mod	0-80%	Sat	161
		49	0613_CNF	Severe	Severe	40-120%	Sat	13
		50	0610_CNF	Moderate	Mod	0-15%	Sat	17
			0611_CNF	Moderate	Mod	0-15%	Sat	67
	No Treatment Proposed	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	24
		3	0595_CNF	NA	Slight	0-15%	Sat	122
		5	0640_CNF	NA	Slight	0-15%	Sat	84
		7	0594_CNF	NA	Slight	0-15%	Sat	215
		23	0582_CNF	Moderate	Slight	0-15%	Sat	0
			0586_CNF	Moderate	Slight	0-15%	Sat	18
		27	0551_CNF	Moderate	Slight	0-15%	Sat	1
			0557a_CNF	Severe	Slight	0-15%	Sat	1
			0582a_CNF	Moderate	Slight	0-15%	Sat	282
		28	0560_CNF	Slight	Slight	0-15%	Sat	150
		39	0506_CNF	Moderate	Slight	0-15%	Sat	3
			0523_CNF	Severe	Slight	0-15%	Sat	10
		42	0562_CNF	Severe	Severe	40-120%	Sat	427
		48	0653_CNF	Moderate	Mod	0-80%	Sat	436

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
			0654_CNF	Moderate	Mod	0-80%	Sat	854
		49	0612_CNF	Severe	Severe	40-120%	Sat	595
			0613_CNF	Severe	Severe	40-120%	Sat	108
		50	0610_CNF	Moderate	Mod	0-15%	Sat	890
			0611_CNF	Moderate	Mod	0-15%	Sat	444
								3243
	Operational Burn	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	74
		3	0595_CNF	NA	Slight	0-15%	Sat	176
		5	0640_CNF	NA	Slight	0-15%	Sat	8
		7	0594_CNF	NA	Slight	0-15%	Sat	637
		23	0582_CNF	Moderate	Slight	0-15%	Sat	12
		27	0551_CNF	Moderate	Slight	0-15%	Sat	3
			0582a_CNF	Moderate	Slight	0-15%	Sat	5
		28	0560_CNF	Slight	Slight	0-15%	Sat	125
		39	0506_CNF	Moderate	Slight	0-15%	Sat	148
			0523_CNF	Severe	Slight	0-15%	Sat	69
		42	0562_CNF	Severe	Severe	40-120%	Sat	32
		46	0473_CNF	NA	Slight	0-15%	Sat	232
		47	0450_CNF	NA	Mod	15-120%	Sat	53
		48	0653_CNF	Moderate	Mod	0-80%	Sat	3
			0654_CNF	Moderate	Mod	0-80%	Sat	0
		50	0610_CNF	Moderate	Mod	0-15%	Sat	1
			0611_CNF	Moderate	Mod	0-15%	Sat	3
	Savanna	3	0595_CNF	NA	Slight	0-15%	Sat	10
		7	0594_CNF	NA	Slight	0-15%	Sat	1

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		23	0586_CNF	Moderate	Slight	0-15%	Sat	116
		27	0551_CNF	Moderate	Slight	0-15%	Sat	10
		28	0560_CNF	Slight	Slight	0-15%	Sat	466
		35	0553_CNF	Moderate	Slight	15-40%	Sat	3
			0584a_CNF	Severe	Severe	15-40%	Sat	4
		39	0506_CNF	Moderate	Slight	0-15%	Sat	12
			0523_CNF	Severe	Slight	0-15%	Sat	120
		42	0562_CNF	Severe	Severe	40-120%	Sat	66
Upper Hell Canyon	Aspen Treatment	20	0407_KNF	Severe	Severe	15-40%	Unsat	10
		26	0010_KNF	Moderate	Slight	0-5%	Sat	0
	Burn Only	6	0507_KNF	NA	Slight	0-15%	Sat	0
		11	0519_KNF	Moderate	Slight	0-15%	Sat	83
		14	0565_KNF	Severe	Slight	0-15%	Sat	9
		23	0401_KNF	Moderate	Slight	0-15%	Sat	62
			0537_KNF	Moderate	Slight	0-15%	Sat	78
		26	0010_KNF	Moderate	Slight	0-5%	Sat	2
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	23
			0525_KNF	Moderate	Severe	15-40%	Unsat	20
		39	0563_KNF	Moderate	Slight	0-15%	Sat	0
		41	0564_KNF	Severe	Severe	15-40%	Unsat	64
		42	0539_KNF	Severe	Severe	40-120%	Unsuit	0
		47	0523_KNF	NA	Severe	15-120%	Unsat	0
	Grassland Restoration	6	0507_KNF	NA	Slight	0-15%	Sat	26
		8	0518_KNF	NA	Slight	0-15%	Sat	50
		11	0519_KNF	Moderate	Slight	0-15%	Sat	23

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		14	0565_KNF	Severe	Slight	0-15%	Sat	0
		23	0401_KNF	Moderate	Slight	0-15%	Sat	0
			0537_KNF	Moderate	Slight	0-15%	Sat	0
		41	0564_KNF	Severe	Severe	15-40%	Unsat	0
	Higher Intensity Mechanical	1	0006_KNF	NA	Slight	0-5%	Sat	8
		6	0507_KNF	NA	Slight	0-15%	Sat	0
		8	0518_KNF	NA	Slight	0-15%	Sat	3
		11	0519_KNF	Moderate	Slight	0-15%	Sat	187
		14	0565_KNF	Severe	Slight	0-15%	Sat	10
		19	0406_KNF	Severe	Severe	15-40%	Unsat	19
		23	0401_KNF	Moderate	Slight	0-15%	Sat	291
			0537_KNF	Moderate	Slight	0-15%	Sat	397
		26	0010_KNF	Moderate	Slight	0-5%	Sat	56
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	93
			0525_KNF	Moderate	Severe	15-40%	Unsat	143
		39	0405_KNF	Moderate	Slight	0-15%	Sat	21
			0563_KNF	Moderate	Slight	0-15%	Sat	6
		41	0564_KNF	Severe	Severe	15-40%	Unsat	140
		46	0587_KNF	NA	Slight	0-15%	Sat	24
		47	0523_KNF	NA	Severe	15-120%	Unsat	0
	Lower Intensity Mechanical	6	0507_KNF	NA	Slight	0-15%	Sat	0
		11	0519_KNF	Moderate	Slight	0-15%	Sat	111
		14	0565_KNF	Severe	Slight	0-15%	Sat	9
		19	0406_KNF	Severe	Severe	15-40%	Unsat	143

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		20	0407_KNF	Severe	Severe	15-40%	Unsat	63
		23	0401_KNF	Moderate	Slight	0-15%	Sat	539
			0537_KNF	Moderate	Slight	0-15%	Sat	463
		26	0010_KNF	Moderate	Slight	0-5%	Sat	80
		27	0324_KNF	Moderate	Slight	0-15%	Sat	9
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	372
			0525_KNF	Moderate	Severe	15-40%	Unsat	110
		39	0563_KNF	Moderate	Slight	0-15%	Sat	0
		41	0564_KNF	Severe	Severe	15-40%	Unsat	147
		42	0539_KNF	Severe	Severe	40-120%	Unsuit	4
		46	0587_KNF	NA	Slight	0-15%	Sat	4
	No Treatment Proposed	1	0006_KNF	NA	Slight	0-5%	Sat	759
		6	0507_KNF	NA	Slight	0-15%	Sat	5
		8	0518_KNF	NA	Slight	0-15%	Sat	280
		9	0020_KNF	NA	Slight	0-5%	Sat	99
		11	0519_KNF	Moderate	Slight	0-15%	Sat	1136
		20	0407_KNF	Severe	Severe	15-40%	Unsat	474
		23	0401_KNF	Moderate	Slight	0-15%	Sat	1549
			0537_KNF	Moderate	Slight	0-15%	Sat	1994
		26	0010_KNF	Moderate	Slight	0-5%	Sat	328
		27	0304_KNF	Moderate	Slight	0-15%	Sat	396
			0324_KNF	Moderate	Slight	0-15%	Sat	2309
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	937
			0525_KNF	Moderate	Severe	15-40%	Unsat	803
		33	0310_KNF	Moderate	Mod	15-40%	Sat	1528

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		34	0300_KNF	Moderate	Mod	15-40%	Sat	179
		39	0563_KNF	Moderate	Slight	0-15%	Sat	0
		41	0564_KNF	Severe	Severe	15-40%	Unsat	163
		42	0320_KNF	Severe	Severe	40-120%	Unsuit	273
			0539_KNF	Severe	Severe	40-120%	Unsuit	110
		45	0660_KNF	Severe	Severe	40-120%	Sat/Unsuit	476
		48	0302_KNF	Moderate	Severe	0-80%	Sat	29
			0322_KNF	Severe	Severe	0-80%	Sat	362
								327
	Operational Burn	1	0006_KNF	NA	Slight	0-5%	Sat	16
		6	0507_KNF	NA	Slight	0-15%	Sat	11
		11	0519_KNF	Moderate	Slight	0-15%	Sat	1
		14	0565_KNF	Severe	Slight	0-15%	Sat	5
		19	0406_KNF	Severe	Severe	15-40%	Unsat	110
		20	0407_KNF	Severe	Severe	15-40%	Unsat	8
		23	0401_KNF	Moderate	Slight	0-15%	Sat	72
			0537_KNF	Moderate	Slight	0-15%	Sat	86
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	136
			0525_KNF	Moderate	Severe	15-40%	Unsat	66
		39	0405_KNF	Moderate	Slight	0-15%	Sat	9
			0563_KNF	Moderate	Slight	0-15%	Sat	98
		41	0564_KNF	Severe	Severe	15-40%	Unsat	45
		46	0514_KNF	NA	Slight	0-15%	Sat	0
		47	0523_KNF	NA	Severe	15-120%	Unsat	0
	Savanna	1	0006_KNF	NA	Slight	0-5%	Sat	12

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		6	0507_KNF	NA	Slight	0-15%	Sat	0
		8	0518_KNF	NA	Slight	0-15%	Sat	7
		11	0519_KNF	Moderate	Slight	0-15%	Sat	147
		14	0565_KNF	Severe	Slight	0-15%	Sat	0
		23	0401_KNF	Moderate	Slight	0-15%	Sat	76
			0537_KNF	Moderate	Slight	0-15%	Sat	14
		26	0010_KNF	Moderate	Slight	0-5%	Sat	0
		32	0525_KNF	Moderate	Severe	15-40%	Unsat	3
		41	0564_KNF	Severe	Severe	15-40%	Unsat	0
		46	0587_KNF	NA	Slight	0-15%	Sat	0
Upper Kana-a Wash	Burn Only	21	0011_CNF	Slight	Slight	15-40%	NA/Sat	84
			0014_CNF	Slight	Slight	15-40%	NA/Sat	65
			0015_CNF	Slight	Slight	15-40%	NA/Sat	417
			0511_CNF	Moderate	Mod	15-40%	Sat	489
			0513_CNF	Moderate	Mod	15-40%	Unsat	118
		30	0559_CNF	Slight	Slight	0-15%	Sat	1429
		31	0561_CNF	Moderate	Mod	15-40%	Sat	1290
		40	0510_CNF	Slight	Slight	0-15%	Sat	2650
			0512_CNF	Slight	Slight	0-15%	Sat	424
		42	0562_CNF	Severe	Severe	40-120%	Sat	733
		46	0426_CNF	NA	Slight	0-15%	Sat	402
			0433_CNF	NA	Slight	0-15%	Sat	31
			0443_CNF	NA	Slight	0-15%	Sat	6
		47	0427_CNF	NA	Mod	15-120%	Sat	55
			0441_CNF	NA	Mod	15-120%	Sat	64

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
	No Treatment Proposed	21	0014_CNF	Slight	Slight	15-40%	NA/Sat	79
			0015_CNF	Slight	Slight	15-40%	NA/Sat	449
			0511_CNF	Moderate	Mod	15-40%	Sat	313
			0513_CNF	Moderate	Mod	15-40%	Unsat	1
		30	0559_CNF	Slight	Slight	0-15%	Sat	23
		31	0561_CNF	Moderate	Mod	15-40%	Sat	216
		40	0510_CNF	Slight	Slight	0-15%	Sat	182
		42	0562_CNF	Severe	Severe	40-120%	Sat	44
	Operational Burn	21	0014_CNF	Slight	Slight	15-40%	NA/Sat	155
			0015_CNF	Slight	Slight	15-40%	NA/Sat	1123
			0511_CNF	Moderate	Mod	15-40%	Sat	68
			0513_CNF	Moderate	Mod	15-40%	Unsat	21
		30	0559_CNF	Slight	Slight	0-15%	Sat	105
		31	0561_CNF	Moderate	Mod	15-40%	Sat	218
		40	0510_CNF	Slight	Slight	0-15%	Sat	35
			0512_CNF	Slight	Slight	0-15%	Sat	182
		42	0562_CNF	Severe	Severe	40-120%	Sat	0
		47	0427_CNF	NA	Mod	15-120%	Sat	56
			0441_CNF	NA	Mod	15-120%	Sat	302
Upper Lee Canyon	Burn Only	13	0275_KNF	Moderate	Slight	0-15%	Sat	195
			0282_KNF	Slight	Mod	0-15%	Sat	367
		16	0276_KNF	Severe	Severe	15-40%	Unsat	1
		23	0290_KNF	Moderate	Slight	0-15%	Sat	1026
		33	0291_KNF	Moderate	Mod	15-40%	Unsat	397
		37	0283_KNF	Moderate	Slight	0-15%	Sat	720

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		38	0284_KNF	Moderate	Severe	15-40%	Unsat	83
		42	0681_KNF	Severe	Severe	40-120%	Sat	297
		46	0260_KNF	NA	Mod	0-15%	Sat	0
		47	0261_KNF	NA	Severe	15-120%	Unsat	5
			0274_KNF	NA	Severe	15-120%	Unsat	29
	Higher Intensity Mechanical	23	0290_KNF	Moderate	Slight	0-15%	Sat	35
		37	0283_KNF	Moderate	Slight	0-15%	Sat	16
		38	0284_KNF	Moderate	Severe	15-40%	Unsat	30
		42	0681_KNF	Severe	Severe	40-120%	Sat	2
	Lower Intensity Mechanical	23	0290_KNF	Moderate	Slight	0-15%	Sat	166
		33	0291_KNF	Moderate	Mod	15-40%	Unsat	30
		37	0283_KNF	Moderate	Slight	0-15%	Sat	31
		38	0284_KNF	Moderate	Severe	15-40%	Unsat	19
		42	0681_KNF	Severe	Severe	40-120%	Sat	35
		47	0274_KNF	NA	Severe	15-120%	Unsat	1
	No Treatment Proposed	13	0275_KNF	Moderate	Slight	0-15%	Sat	2
			0282_KNF	Slight	Mod	0-15%	Sat	129
		23	0290_KNF	Moderate	Slight	0-15%	Sat	2
		37	0283_KNF	Moderate	Slight	0-15%	Sat	7
		42	0681_KNF	Severe	Severe	40-120%	Sat	0
	Operational Burn	1	0011_KNF	NA	Slight	0-5%	Sat	0
		13	0275_KNF	Moderate	Slight	0-15%	Sat	111
			0282_KNF	Slight	Mod	0-15%	Sat	18
		23	0290_KNF	Moderate	Slight	0-15%	Sat	31

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		33	0291_KNF	Moderate	Mod	15-40%	Unsat	42
		37	0283_KNF	Moderate	Slight	0-15%	Sat	84
		38	0284_KNF	Moderate	Severe	15-40%	Unsat	63
		42	0681_KNF	Severe	Severe	40-120%	Sat	21
		46	0260_KNF	NA	Mod	0-15%	Sat	0
		47	0261_KNF	NA	Severe	15-120%	Unsat	3
			0274_KNF	NA	Severe	15-120%	Unsat	11
Upper Oak Creek	Burn Only	11	0585_CNF	Moderate	Slight	0-15%	Sat	2
		12	0579_CNF	Moderate	Slight	0-15%	Sat	103
		23	0582_CNF	Moderate	Slight	0-15%	Sat	29
		25	0578_CNF	Severe	Slight	0-15%	Sat	145
		32	0550_CNF	Moderate	Mod	15-40%	Sat	69
			0565_CNF	Severe	Severe	15-40%	Sat	10
			0584_CNF	Severe	Severe	15-40%	Sat	115
		42	0575_CNF	Severe	Severe	40-120%	Unsuit	2
		44	0555_CNF	Severe	Severe	40-120%	Sat	4
		47	0471_CNF	NA	Severe	15-120%	Unsuit	11
		48	0654_CNF	Moderate	Mod	0-80%	Sat	50
	Higher Intensity Mechanical	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	24
		11	0585_CNF	Moderate	Slight	0-15%	Sat	154
		12	0579_CNF	Moderate	Slight	0-15%	Sat	219
		15	0520_CNF	Severe	Slight	0-15%	Sat	12
		18	0530_CNF	Moderate	Mod	15-40%	Sat/Unsat	40
		23	0582_CNF	Moderate	Slight	0-15%	Sat	301
		25	0578_CNF	Severe	Slight	0-15%	Sat	35

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		32	0584_CNF	Severe	Severe	15-40%	Sat	255
		44	0555_CNF	Severe	Severe	40-120%	Sat	4
		46	0492_CNF	NA	Mod	0-15%	Sat	4
		47	0470_CNF	NA	Severe	15-120%	Sat	0
			0471_CNF	NA	Severe	15-120%	Unsuit	0
	Lower Intensity Mechanical	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	17
		11	0585_CNF	Moderate	Slight	0-15%	Sat	199
		12	0579_CNF	Moderate	Slight	0-15%	Sat	2583
		15	0520_CNF	Severe	Slight	0-15%	Sat	470
		18	0530_CNF	Moderate	Mod	15-40%	Sat/Unsat	239
		23	0582_CNF	Moderate	Slight	0-15%	Sat	829
			0586_CNF	Moderate	Slight	0-15%	Sat	16
		24	0546_CNF	Severe	Slight	0-15%	Sat	7
		25	0578_CNF	Severe	Slight	0-15%	Sat	1581
		32	0549_CNF	Moderate	Mod	15-40%	Sat	0
			0550_CNF	Moderate	Mod	15-40%	Sat	2
			0565_CNF	Severe	Severe	15-40%	Sat	56
			0584_CNF	Severe	Severe	15-40%	Sat	1263
		42	0575_CNF	Severe	Severe	40-120%	Unsuit	9
		44	0555_CNF	Severe	Severe	40-120%	Sat	31
		46	0492_CNF	NA	Mod	0-15%	Sat	7
		47	0470_CNF	NA	Severe	15-120%	Sat	12
			0471_CNF	NA	Severe	15-120%	Unsuit	14
		48	0654_CNF	Moderate	Mod	0-80%	Sat	1
	No Treatment	11	0585_CNF	Moderate	Slight	0-15%	Sat	15

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
	Proposed							
		23	0582_CNF	Moderate	Slight	0-15%	Sat	17
		24	0546_CNF	Severe	Slight	0-15%	Sat	11
		32	0584_CNF	Severe	Severe	15-40%	Sat	20
		42	0575_CNF	Severe	Severe	40-120%	Unsuit	18
		44	0555_CNF	Severe	Severe	40-120%	Sat	8
		47	0471_CNF	NA	Severe	15-120%	Unsuit	0
		48	0654_CNF	Moderate	Mod	0-80%	Sat	52
	Operational Burn	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	14
		11	0585_CNF	Moderate	Slight	0-15%	Sat	1
		12	0579_CNF	Moderate	Slight	0-15%	Sat	483
		15	0520_CNF	Severe	Slight	0-15%	Sat	4
		23	0582_CNF	Moderate	Slight	0-15%	Sat	36
		25	0578_CNF	Severe	Slight	0-15%	Sat	27
		32	0565_CNF	Severe	Severe	15-40%	Sat	2
			0584_CNF	Severe	Severe	15-40%	Sat	35
		42	0575_CNF	Severe	Severe	40-120%	Unsuit	0
		44	0555_CNF	Severe	Severe	40-120%	Sat	0
		47	0471_CNF	NA	Severe	15-120%	Unsuit	3
	Savanna	11	0585_CNF	Moderate	Slight	0-15%	Sat	28
		12	0579_CNF	Moderate	Slight	0-15%	Sat	12
		23	0582_CNF	Moderate	Slight	0-15%	Sat	36
		25	0578_CNF	Severe	Slight	0-15%	Sat	4
		32	0584_CNF	Severe	Severe	15-40%	Sat	21
		44	0555_CNF	Severe	Severe	40-120%	Sat	1

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
Upper Padre Canyon	Burn Only	11	0585_CNF	Moderate	Slight	0-15%	Sat	98
		23	0582_CNF	Moderate	Slight	0-15%	Sat	76
			0586_CNF	Moderate	Slight	0-15%	Sat	25
		32	0584_CNF	Severe	Severe	15-40%	Sat	15
	Grassland Restoration	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	18
		9	0050_CNF	NA	Slight	0-5%	Sat	34
		11	0585_CNF	Moderate	Slight	0-15%	Sat	7
		19	0515_CNF	NA	Mod	15-40%	Unsat	376
		23	0582_CNF	Moderate	Slight	0-15%	Sat	14
			0586_CNF	Moderate	Slight	0-15%	Sat	35
		32	0584_CNF	Severe	Severe	15-40%	Sat	3
		39	0523_CNF	Severe	Slight	0-15%	Sat	33
	Higher Intensity Mechanical	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	4
		11	0585_CNF	Moderate	Slight	0-15%	Sat	674
		19	0515_CNF	NA	Mod	15-40%	Unsat	3
		23	0582_CNF	Moderate	Slight	0-15%	Sat	123
			0586_CNF	Moderate	Slight	0-15%	Sat	472
		32	0584_CNF	Severe	Severe	15-40%	Sat	83
		39	0523_CNF	Severe	Slight	0-15%	Sat	75
		42	0575_CNF	Severe	Severe	40-120%	Unsuit	7
	Lower Intensity Mechanical	11	0585_CNF	Moderate	Slight	0-15%	Sat	336
		19	0515_CNF	NA	Mod	15-40%	Unsat	5
		23	0582_CNF	Moderate	Slight	0-15%	Sat	6
			0586_CNF	Moderate	Slight	0-15%	Sat	359

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		39	0523_CNF	Severe	Slight	0-15%	Sat	9
	No Treatment Proposed	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	5
		11	0585_CNF	Moderate	Slight	0-15%	Sat	2
		19	0515_CNF	NA	Mod	15-40%	Unsat	112
		23	0586_CNF	Moderate	Slight	0-15%	Sat	27
		32	0584_CNF	Severe	Severe	15-40%	Sat	10
	Operational Burn	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	17
		11	0585_CNF	Moderate	Slight	0-15%	Sat	7
		19	0515_CNF	NA	Mod	15-40%	Unsat	234
		23	0582_CNF	Moderate	Slight	0-15%	Sat	10
			0586_CNF	Moderate	Slight	0-15%	Sat	1
		39	0523_CNF	Severe	Slight	0-15%	Sat	6
	Savanna	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	0
		9	0050_CNF	NA	Slight	0-5%	Sat	5
		11	0585_CNF	Moderate	Slight	0-15%	Sat	99
		19	0515_CNF	NA	Mod	15-40%	Unsat	30
		23	0582_CNF	Moderate	Slight	0-15%	Sat	64
			0586_CNF	Moderate	Slight	0-15%	Sat	95
		32	0584_CNF	Severe	Severe	15-40%	Sat	15
		39	0523_CNF	Severe	Slight	0-15%	Sat	130
Upper Red Lake Wash	Aspen Treatment	34	0300_KNF	Moderate	Mod	15-40%	Sat	0
		48	0302_KNF	Moderate	Severe	0-80%	Sat	0
	Burn Only	1	0006_KNF	NA	Slight	0-5%	Sat	3
		6	0507_KNF	NA	Slight	0-15%	Sat	3
		11	0519_KNF	Moderate	Slight	0-15%	Sat	6

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		14	0326_KNF	Moderate	Slight	0-15%	Sat	165
		19	0406_KNF	Severe	Severe	15-40%	Unsat	131
		23	0401_KNF	Moderate	Slight	0-15%	Sat	28
			0537_KNF	Moderate	Slight	0-15%	Sat	93
		27	0324_KNF	Moderate	Slight	0-15%	Sat	63
		29	0325_KNF	Moderate	Slight	0-15%	Sat	194
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	30
		33	0310_KNF	Moderate	Mod	15-40%	Sat	33
		34	0300_KNF	Moderate	Mod	15-40%	Sat	411
		39	0405_KNF	Moderate	Slight	0-15%	Sat	29
			0563_KNF	Moderate	Slight	0-15%	Sat	10
		41	0311_KNF	Severe	Severe	15-40%	Unsat	23
		42	0320_KNF	Severe	Severe	40-120%	Unsuit	20
		47	0496_KNF	NA	Mod	15-120%	Unsat	1
		48	0302_KNF	Moderate	Severe	0-80%	Sat	169
			0312_KNF	Severe	Severe	0-80%	Unsat	79
			0322_KNF	Severe	Severe	0-80%	Sat	342
	Grassland Restoration	1	0006_KNF	NA	Slight	0-5%	Sat	71
		3	0513_KNF	NA	Slight	0-15%	Sat	188
		6	0507_KNF	NA	Slight	0-15%	Sat	1249
		11	0519_KNF	Moderate	Slight	0-15%	Sat	11
		14	0326_KNF	Moderate	Slight	0-15%	Sat	10
		19	0406_KNF	Severe	Severe	15-40%	Unsat	0
		23	0401_KNF	Moderate	Slight	0-15%	Sat	5
			0537_KNF	Moderate	Slight	0-15%	Sat	5

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		27	0324_KNF	Moderate	Slight	0-15%	Sat	12
		39	0405_KNF	Moderate	Slight	0-15%	Sat	51
			0563_KNF	Moderate	Slight	0-15%	Sat	133
	Higher Intensity Mechanical	1	0006_KNF	NA	Slight	0-5%	Sat	1
		3	0513_KNF	NA	Slight	0-15%	Sat	14
		6	0507_KNF	NA	Slight	0-15%	Sat	51
		11	0519_KNF	Moderate	Slight	0-15%	Sat	143
		14	0326_KNF	Moderate	Slight	0-15%	Sat	28
		19	0406_KNF	Severe	Severe	15-40%	Unsat	233
		23	0401_KNF	Moderate	Slight	0-15%	Sat	292
			0537_KNF	Moderate	Slight	0-15%	Sat	198
		27	0324_KNF	Moderate	Slight	0-15%	Sat	70
		29	0325_KNF	Moderate	Slight	0-15%	Sat	50
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	325
		33	0310_KNF	Moderate	Mod	15-40%	Sat	11
		34	0300_KNF	Moderate	Mod	15-40%	Sat	304
		39	0405_KNF	Moderate	Slight	0-15%	Sat	537
			0563_KNF	Moderate	Slight	0-15%	Sat	1020
		41	0564_KNF	Severe	Severe	15-40%	Unsat	17
		42	0320_KNF	Severe	Severe	40-120%	Unsuit	7
		43	0431_KNF	Severe	Severe	40-120%	Unsuit	42
		47	0476_KNF	NA	Severe	15-120%	Unsat	1
			0496_KNF	NA	Mod	15-120%	Unsat	13
		48	0302_KNF	Moderate	Severe	0-80%	Sat	22
			0312_KNF	Severe	Severe	0-80%	Unsat	58

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
			0322_KNF	Severe	Severe	0-80%	Sat	2
	Lower Intensity Mechanical	1	0006_KNF	NA	Slight	0-5%	Sat	2
		6	0507_KNF	NA	Slight	0-15%	Sat	10
		11	0519_KNF	Moderate	Slight	0-15%	Sat	75
		14	0326_KNF	Moderate	Slight	0-15%	Sat	488
		19	0406_KNF	Severe	Severe	15-40%	Unsat	152
		23	0401_KNF	Moderate	Slight	0-15%	Sat	37
			0537_KNF	Moderate	Slight	0-15%	Sat	117
		27	0324_KNF	Moderate	Slight	0-15%	Sat	846
		29	0325_KNF	Moderate	Slight	0-15%	Sat	845
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	148
		33	0310_KNF	Moderate	Mod	15-40%	Sat	160
		34	0300_KNF	Moderate	Mod	15-40%	Sat	720
		39	0405_KNF	Moderate	Slight	0-15%	Sat	138
			0563_KNF	Moderate	Slight	0-15%	Sat	231
		41	0311_KNF	Severe	Severe	15-40%	Unsat	30
			0564_KNF	Severe	Severe	15-40%	Unsat	0
		47	0496_KNF	NA	Mod	15-120%	Unsat	6
		48	0302_KNF	Moderate	Severe	0-80%	Sat	68
			0312_KNF	Severe	Severe	0-80%	Unsat	3
			0322_KNF	Severe	Severe	0-80%	Sat	1
	No Treatment Proposed	1	0006_KNF	NA	Slight	0-5%	Sat	73
		6	0507_KNF	NA	Slight	0-15%	Sat	24
		14	0326_KNF	Moderate	Slight	0-15%	Sat	93

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		29	0325_KNF	Moderate	Slight	0-15%	Sat	227
		33	0310_KNF	Moderate	Mod	15-40%	Sat	5
		34	0300_KNF	Moderate	Mod	15-40%	Sat	39
		39	0405_KNF	Moderate	Slight	0-15%	Sat	7
		42	0320_KNF	Severe	Severe	40-120%	Unsuit	13
		47	0496_KNF	NA	Mod	15-120%	Unsat	7
		48	0302_KNF	Moderate	Severe	0-80%	Sat	161
			0312_KNF	Severe	Severe	0-80%	Unsat	56
			0322_KNF	Severe	Severe	0-80%	Sat	95
	Operational Burn	1	0006_KNF	NA	Slight	0-5%	Sat	140
		3	0513_KNF	NA	Slight	0-15%	Sat	185
		6	0507_KNF	NA	Slight	0-15%	Sat	1664
		14	0326_KNF	Moderate	Slight	0-15%	Sat	99
		19	0406_KNF	Severe	Severe	15-40%	Unsat	376
		23	0401_KNF	Moderate	Slight	0-15%	Sat	51
			0537_KNF	Moderate	Slight	0-15%	Sat	3
		27	0324_KNF	Moderate	Slight	0-15%	Sat	19
		29	0325_KNF	Moderate	Slight	0-15%	Sat	11
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	197
		34	0300_KNF	Moderate	Mod	15-40%	Sat	182
		39	0405_KNF	Moderate	Slight	0-15%	Sat	339
			0563_KNF	Moderate	Slight	0-15%	Sat	402
		41	0564_KNF	Severe	Severe	15-40%	Unsat	0
		43	0431_KNF	Severe	Severe	40-120%	Unsuit	14
		47	0476_KNF	NA	Severe	15-120%	Unsat	23

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
			0496_KNF	NA	Mod	15-120%	Unsat	140
	Savanna	1	0006_KNF	NA	Slight	0-5%	Sat	2
		3	0513_KNF	NA	Slight	0-15%	Sat	2
		6	0507_KNF	NA	Slight	0-15%	Sat	171
		14	0326_KNF	Moderate	Slight	0-15%	Sat	0
		19	0406_KNF	Severe	Severe	15-40%	Unsat	42
		23	0401_KNF	Moderate	Slight	0-15%	Sat	13
			0537_KNF	Moderate	Slight	0-15%	Sat	61
		27	0324_KNF	Moderate	Slight	0-15%	Sat	3
		29	0325_KNF	Moderate	Slight	0-15%	Sat	2
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	48
		39	0405_KNF	Moderate	Slight	0-15%	Sat	195
			0563_KNF	Moderate	Slight	0-15%	Sat	658
		41	0564_KNF	Severe	Severe	15-40%	Unsat	15
		43	0431_KNF	Severe	Severe	40-120%	Unsuit	2
		47	0496_KNF	NA	Mod	15-120%	Unsat	0
Upper Rio de Flag	Aspen Treatment	27	0570_CNF	Moderate	Slight	0-15%	Sat	0
			0582a_CNF	Moderate	Slight	0-15%	Sat	8
		35	0584a_CNF	Severe	Severe	15-40%	Sat	3
		50	0611_CNF	Moderate	Mod	0-15%	Sat	9
	Burn Only	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	1
		3	0595_CNF	NA	Slight	0-15%	Sat	1
		5	0640_CNF	NA	Slight	0-15%	Sat	2
		23	0586_CNF	Moderate	Slight	0-15%	Sat	21
		27	0551_CNF	Moderate	Slight	0-15%	Sat	364

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
			0557a_CNF	Severe	Slight	0-15%	Sat	29
			0570_CNF	Moderate	Slight	0-15%	Sat	1194
			0582a_CNF	Moderate	Slight	0-15%	Sat	14
		35	0565a_CNF	Severe	Severe	15-40%	Sat	50
			0584a_CNF	Severe	Severe	15-40%	Sat	316
		42	0562_CNF	Severe	Severe	40-120%	Sat	151
			0596_CNF	Severe	Severe	40-120%	Sat	94
		48	0654_CNF	Moderate	Mod	0-80%	Sat	295
		49	0613_CNF	Severe	Severe	40-120%	Sat	43
		50	0611_CNF	Moderate	Mod	0-15%	Sat	103
	Higher Intensity Mechanical	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	8
		3	0595_CNF	NA	Slight	0-15%	Sat	9
		5	0640_CNF	NA	Slight	0-15%	Sat	5
		11	0585_CNF	Moderate	Slight	0-15%	Sat	6
		23	0582_CNF	Moderate	Slight	0-15%	Sat	45
			0586_CNF	Moderate	Slight	0-15%	Sat	196
		27	0551_CNF	Moderate	Slight	0-15%	Sat	59
			0557a_CNF	Severe	Slight	0-15%	Sat	157
			0570_CNF	Moderate	Slight	0-15%	Sat	958
			0582a_CNF	Moderate	Slight	0-15%	Sat	450
		35	0565a_CNF	Severe	Severe	15-40%	Sat	59
			0584a_CNF	Severe	Severe	15-40%	Sat	500
		42	0562_CNF	Severe	Severe	40-120%	Sat	8
			0596_CNF	Severe	Severe	40-120%	Sat	62
		48	0654_CNF	Moderate	Mod	0-80%	Sat	100

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		49	0613_CNF	Severe	Severe	40-120%	Sat	73
								24
	Lower Intensity Mechanical	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	7
		3	0595_CNF	NA	Slight	0-15%	Sat	4
		23	0582_CNF	Moderate	Slight	0-15%	Sat	2
			0586_CNF	Moderate	Slight	0-15%	Sat	64
		27	0551_CNF	Moderate	Slight	0-15%	Sat	1910
			0557a_CNF	Severe	Slight	0-15%	Sat	48
			0570_CNF	Moderate	Slight	0-15%	Sat	1965
			0582a_CNF	Moderate	Slight	0-15%	Sat	169
		35	0565a_CNF	Severe	Severe	15-40%	Sat	126
			0584a_CNF	Severe	Severe	15-40%	Sat	280
		42	0562_CNF	Severe	Severe	40-120%	Sat	27
		48	0653_CNF	Moderate	Mod	0-80%	Sat	28
			0654_CNF	Moderate	Mod	0-80%	Sat	166
		49	0613_CNF	Severe	Severe	40-120%	Sat	5
		50	0611_CNF	Moderate	Mod	0-15%	Sat	256
	No Treatment Proposed	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	494
		3	0595_CNF	NA	Slight	0-15%	Sat	1626
		5	0640_CNF	NA	Slight	0-15%	Sat	1053
		9	0050_CNF	NA	Slight	0-5%	Sat	60
		11	0585_CNF	Moderate	Slight	0-15%	Sat	1215
		23	0582_CNF	Moderate	Slight	0-15%	Sat	46
			0586_CNF	Moderate	Slight	0-15%	Sat	3380

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		27	0551_CNF	Moderate	Slight	0-15%	Sat	3949
			0557a_CNF	Severe	Slight	0-15%	Sat	433
			0570_CNF	Moderate	Slight	0-15%	Sat	3572
			0582a_CNF	Moderate	Slight	0-15%	Sat	2315
		28	0560_CNF	Slight	Slight	0-15%	Sat	48
		32	0584_CNF	Severe	Severe	15-40%	Sat	52
		35	0565a_CNF	Severe	Severe	15-40%	Sat	438
			0584a_CNF	Severe	Severe	15-40%	Sat	1398
		42	0562_CNF	Severe	Severe	40-120%	Sat	200
			0596_CNF	Severe	Severe	40-120%	Sat	3
		48	0653_CNF	Moderate	Mod	0-80%	Sat	1155
			0654_CNF	Moderate	Mod	0-80%	Sat	2328
		49	0613_CNF	Severe	Severe	40-120%	Sat	1339
		50	0611_CNF	Moderate	Mod	0-15%	Sat	1162
								6875
	Operational Burn	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	45
		3	0595_CNF	NA	Slight	0-15%	Sat	181
		5	0640_CNF	NA	Slight	0-15%	Sat	23
		23	0582_CNF	Moderate	Slight	0-15%	Sat	4
			0586_CNF	Moderate	Slight	0-15%	Sat	4
		27	0551_CNF	Moderate	Slight	0-15%	Sat	3
			0557a_CNF	Severe	Slight	0-15%	Sat	29
			0570_CNF	Moderate	Slight	0-15%	Sat	53
			0582a_CNF	Moderate	Slight	0-15%	Sat	24
		35	0565a_CNF	Severe	Severe	15-40%	Sat	12

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
			0584a_CNF	Severe	Severe	15-40%	Sat	27
		48	0654_CNF	Moderate	Mod	0-80%	Sat	13
		49	0613_CNF	Severe	Severe	40-120%	Sat	0
	Savanna	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	0
		3	0595_CNF	NA	Slight	0-15%	Sat	11
		23	0586_CNF	Moderate	Slight	0-15%	Sat	99
		27	0557a_CNF	Severe	Slight	0-15%	Sat	46
			0570_CNF	Moderate	Slight	0-15%	Sat	77
			0582a_CNF	Moderate	Slight	0-15%	Sat	76
		35	0565a_CNF	Severe	Severe	15-40%	Sat	0
			0584a_CNF	Severe	Severe	15-40%	Sat	212
		42	0562_CNF	Severe	Severe	40-120%	Sat	0
Upper San Francisco Wash	Burn Only	6	0566_CNF	NA	Slight	0-15%	Sat	70
		21	0014_CNF	Slight	Slight	15-40%	NA/Sat	107
			0015_CNF	Slight	Slight	15-40%	NA/Sat	126
			0511_CNF	Moderate	Mod	15-40%	Sat	31
			0513_CNF	Moderate	Mod	15-40%	Unsat	514
		28	0560_CNF	Slight	Slight	0-15%	Sat	204
		30	0558_CNF	Slight	Slight	0-15%	Sat	532
			0559_CNF	Slight	Slight	0-15%	Sat	1467
		31	0561_CNF	Moderate	Mod	15-40%	Sat	1206
		40	0510_CNF	Slight	Slight	0-15%	Sat	564
			0512_CNF	Slight	Slight	0-15%	Sat	1966
		46	0433_CNF	NA	Slight	0-15%	Sat	248
			0443_CNF	NA	Slight	0-15%	Sat	25

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
			0444_CNF	NA	Slight	0-15%	Sat	6
		47	0441_CNF	NA	Mod	15-120%	Sat	301
			0450_CNF	NA	Mod	15-120%	Sat	64
	No Treatment Proposed	1	0053_CNF	NA	Slight	0-5%	Sat	30
		6	0566_CNF	NA	Slight	0-15%	Sat	115
		21	0513_CNF	Moderate	Mod	15-40%	Unsat	139
		22	0527_CNF	Moderate	Mod	15-40%	Sat	387
		25	0567_CNF	Severe	Slight	0-15%	Sat	80
		28	0560_CNF	Slight	Slight	0-15%	Sat	12
		39	0500_CNF	Severe	Slight	0-15%	Sat	3590
			0505_CNF	Moderate	Slight	0-15%	Sat	521
		41	0524_CNF	Severe	Severe	15-40%	Sat	36
		46	0443_CNF	NA	Slight	0-15%	Sat	8
			0444_CNF	NA	Slight	0-15%	Sat	244
			0473_CNF	NA	Slight	0-15%	Sat	643
			0490_CNF	NA	Slight	0-15%	Sat	99
		47	0441_CNF	NA	Mod	15-120%	Sat	258
								1139
	Operational Burn	6	0566_CNF	NA	Slight	0-15%	Sat	151
		21	0014_CNF	Slight	Slight	15-40%	NA/Sat	133
			0015_CNF	Slight	Slight	15-40%	NA/Sat	392
			0511_CNF	Moderate	Mod	15-40%	Sat	15
			0513_CNF	Moderate	Mod	15-40%	Unsat	453
		28	0560_CNF	Slight	Slight	0-15%	Sat	18
		30	0558_CNF	Slight	Slight	0-15%	Sat	43

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
			0559_CNF	Slight	Slight	0-15%	Sat	69
		31	0561_CNF	Moderate	Mod	15-40%	Sat	158
		40	0510_CNF	Slight	Slight	0-15%	Sat	7
			0512_CNF	Slight	Slight	0-15%	Sat	1193
		46	0433_CNF	NA	Slight	0-15%	Sat	146
			0443_CNF	NA	Slight	0-15%	Sat	59
		47	0441_CNF	NA	Mod	15-120%	Sat	625
			0450_CNF	NA	Mod	15-120%	Sat	359
Upper Spring Valley Wash	Aspen Treatment	3	0513_KNF	NA	Slight	0-15%	Sat	0
		4	0440_KNF	NA	Slight	15-40%	Unsat	1
		19	0406_KNF	Severe	Severe	15-40%	Unsat	0
		20	0407_KNF	Severe	Severe	15-40%	Unsat	14
		27	0324_KNF	Moderate	Slight	0-15%	Sat	1
			0401a_KNF	Moderate	Slight	0-15%	Sat	21
			0537a_KNF	Moderate	Slight	0-15%	Sat	0
			0557a_CNF	Severe	Slight	0-15%	Sat	7
			0582a_CNF	Moderate	Slight	0-15%	Sat	18
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	47
		36	0310a_KNF	Moderate	Mod	15-40%	Sat	1
		41	0311_KNF	Severe	Severe	15-40%	Unsat	0
		42	0562_CNF	Severe	Severe	40-120%	Sat	5
		48	0302_KNF	Moderate	Severe	0-80%	Sat	2
	Burn Only	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	0
		3	0513_KNF	NA	Slight	0-15%	Sat	13
		4	0440_KNF	NA	Slight	15-40%	Unsat	5

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		6	0507_KNF	NA	Slight	0-15%	Sat	11
		9	0020_KNF	NA	Slight	0-5%	Sat	0
		10	0037_KNF	NA	Slight	0-5%	Sat	0
		14	0326_KNF	Moderate	Slight	0-15%	Sat	143
		19	0406_KNF	Severe	Severe	15-40%	Unsat	43
		20	0407_KNF	Severe	Severe	15-40%	Unsat	56
		23	0537_KNF	Moderate	Slight	0-15%	Sat	28
		27	0324_KNF	Moderate	Slight	0-15%	Sat	431
			0401a_KNF	Moderate	Slight	0-15%	Sat	117
			0537a_KNF	Moderate	Slight	0-15%	Sat	547
			0551_CNF	Moderate	Slight	0-15%	Sat	25
			0570_CNF	Moderate	Slight	0-15%	Sat	59
			0582a_CNF	Moderate	Slight	0-15%	Sat	37
		29	0325_KNF	Moderate	Slight	0-15%	Sat	40
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	59
		36	0300a_KNF	Moderate	Mod	15-40%	Sat	1
			0310a_KNF	Moderate	Mod	15-40%	Sat	154
		39	0305_KNF	Moderate	Slight	0-15%	Sat	86
			0405_KNF	Moderate	Slight	0-15%	Sat	8
			0563_KNF	Moderate	Slight	0-15%	Sat	8
		41	0311_KNF	Severe	Severe	15-40%	Unsat	123
		42	0562_CNF	Severe	Severe	40-120%	Sat	6
		48	0302_KNF	Moderate	Severe	0-80%	Sat	463
			0312_KNF	Severe	Severe	0-80%	Unsat	50
			0322_KNF	Severe	Severe	0-80%	Sat	435

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		49	0612_CNF	Severe	Severe	40-120%	Sat	6
			0613_CNF	Severe	Severe	40-120%	Sat	6
								0
	Grassland Restoration	1	0006_KNF	NA	Slight	0-5%	Sat	2
		3	0513_KNF	NA	Slight	0-15%	Sat	67
			0595_CNF	NA	Slight	0-15%	Sat	5
		4	0440_KNF	NA	Slight	15-40%	Unsat	1
		6	0507_KNF	NA	Slight	0-15%	Sat	648
		10	0037_KNF	NA	Slight	0-5%	Sat	8
		14	0326_KNF	Moderate	Slight	0-15%	Sat	171
		19	0406_KNF	Severe	Severe	15-40%	Unsat	2
		20	0407_KNF	Severe	Severe	15-40%	Unsat	1
		23	0537_KNF	Moderate	Slight	0-15%	Sat	0
		27	0324_KNF	Moderate	Slight	0-15%	Sat	1
			0401a_KNF	Moderate	Slight	0-15%	Sat	4
			0537a_KNF	Moderate	Slight	0-15%	Sat	11
			0582a_CNF	Moderate	Slight	0-15%	Sat	1
		29	0325_KNF	Moderate	Slight	0-15%	Sat	0
		39	0405_KNF	Moderate	Slight	0-15%	Sat	23
			0563_KNF	Moderate	Slight	0-15%	Sat	129
	Higher Intensity Mechanical	1	0006_KNF	NA	Slight	0-5%	Sat	15
		2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	1
		3	0513_KNF	NA	Slight	0-15%	Sat	56
			0595_CNF	NA	Slight	0-15%	Sat	1

Sum of SoilAcres								
HUC_Name_6	AltB_TxGrp	Stratum	TESU_NF	Harvest Limitation	Erosion Hazard	Slope	Soil Condition	Total
		4	0440_KNF	NA	Slight	15-40%	Unsat	2
		6	0507_KNF	NA	Slight	0-15%	Sat	57
		9	0020_KNF	NA	Slight	0-5%	Sat	2
		10	0037_KNF	NA	Slight	0-5%	Sat	6
		11	0519_KNF	Moderate	Slight	0-15%	Sat	104
		14	0326_KNF	Moderate	Slight	0-15%	Sat	13
		19	0406_KNF	Severe	Severe	15-40%	Unsat	391
		20	0407_KNF	Severe	Severe	15-40%	Unsat	95
		23	0401_KNF	Moderate	Slight	0-15%	Sat	279
			0537_KNF	Moderate	Slight	0-15%	Sat	91
		27	0304_KNF	Moderate	Slight	0-15%	Sat	36
			0324_KNF	Moderate	Slight	0-15%	Sat	202
			0401a_KNF	Moderate	Slight	0-15%	Sat	1381
			0537a_KNF	Moderate	Slight	0-15%	Sat	3609
			0551_CNF	Moderate	Slight	0-15%	Sat	42
			0557a_CNF	Severe	Slight	0-15%	Sat	18
			0582a_CNF	Moderate	Slight	0-15%	Sat	742
		29	0325_KNF	Moderate	Slight	0-15%	Sat	79
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	685
			0525_KNF	Moderate	Severe	15-40%	Unsat	53
		36	0300a_KNF	Moderate	Mod	15-40%	Sat	7
			0310a_KNF	Moderate	Mod	15-40%	Sat	2
		39	0305_KNF	Moderate	Slight	0-15%	Sat	56
			0405_KNF	Moderate	Slight	0-15%	Sat	523
			0563_KNF	Moderate	Slight	0-15%	Sat	936

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		41	0311_KNF	Severe	Severe	15-40%	Unsat	60
		42	0562_CNF	Severe	Severe	40-120%	Sat	2
		43	0431_KNF	Severe	Severe	40-120%	Unsuit	20
		48	0312_KNF	Severe	Severe	0-80%	Unsat	0
		49	0613_CNF	Severe	Severe	40-120%	Sat	4
		50	0611_CNF	Moderate	Mod	0-15%	Sat	0
	Lower Intensity Mechanical	1	0006_KNF	NA	Slight	0-5%	Sat	3
		2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	1
		3	0513_KNF	NA	Slight	0-15%	Sat	0
			0595_CNF	NA	Slight	0-15%	Sat	2
		4	0440_KNF	NA	Slight	15-40%	Unsat	6
		6	0507_KNF	NA	Slight	0-15%	Sat	12
		10	0037_KNF	NA	Slight	0-5%	Sat	1
		11	0519_KNF	Moderate	Slight	0-15%	Sat	38
		14	0326_KNF	Moderate	Slight	0-15%	Sat	280
		19	0406_KNF	Severe	Severe	15-40%	Unsat	28
		20	0407_KNF	Severe	Severe	15-40%	Unsat	282
		23	0401_KNF	Moderate	Slight	0-15%	Sat	52
			0537_KNF	Moderate	Slight	0-15%	Sat	0
		27	0304_KNF	Moderate	Slight	0-15%	Sat	49
			0324_KNF	Moderate	Slight	0-15%	Sat	423
			0401a_KNF	Moderate	Slight	0-15%	Sat	400
			0537a_KNF	Moderate	Slight	0-15%	Sat	825
			0551_CNF	Moderate	Slight	0-15%	Sat	1
			0557a_CNF	Severe	Slight	0-15%	Sat	10

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
			0570_CNF	Moderate	Slight	0-15%	Sat	22
			0582a_CNF	Moderate	Slight	0-15%	Sat	370
		29	0325_KNF	Moderate	Slight	0-15%	Sat	374
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	56
			0525_KNF	Moderate	Severe	15-40%	Unsat	91
		35	0584a_CNF	Severe	Severe	15-40%	Sat	4
		36	0300a_KNF	Moderate	Mod	15-40%	Sat	188
			0310a_KNF	Moderate	Mod	15-40%	Sat	66
		39	0305_KNF	Moderate	Slight	0-15%	Sat	89
			0405_KNF	Moderate	Slight	0-15%	Sat	69
			0563_KNF	Moderate	Slight	0-15%	Sat	120
		41	0311_KNF	Severe	Severe	15-40%	Unsat	121
		42	0320_KNF	Severe	Severe	40-120%	Unsuit	124
			0562_CNF	Severe	Severe	40-120%	Sat	29
		43	0431_KNF	Severe	Severe	40-120%	Unsuit	39
		47	0476_KNF	NA	Severe	15-120%	Unsat	8
		48	0302_KNF	Moderate	Severe	0-80%	Sat	135
			0312_KNF	Severe	Severe	0-80%	Unsat	2
			0322_KNF	Severe	Severe	0-80%	Sat	70
		49	0612_CNF	Severe	Severe	40-120%	Sat	5
	No Treatment Proposed	1	0006_KNF	NA	Slight	0-5%	Sat	303
		2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	194
		3	0513_KNF	NA	Slight	0-15%	Sat	591
			0595_CNF	NA	Slight	0-15%	Sat	42
		4	0440_KNF	NA	Slight	15-40%	Unsat	43

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		6	0507_KNF	NA	Slight	0-15%	Sat	299
		9	0020_KNF	NA	Slight	0-5%	Sat	30
		10	0037_KNF	NA	Slight	0-5%	Sat	895
		11	0519_KNF	Moderate	Slight	0-15%	Sat	574
		19	0406_KNF	Severe	Severe	15-40%	Unsat	44
		20	0407_KNF	Severe	Severe	15-40%	Unsat	91
		23	0401_KNF	Moderate	Slight	0-15%	Sat	49
		27	0324_KNF	Moderate	Slight	0-15%	Sat	289
			0401a_KNF	Moderate	Slight	0-15%	Sat	768
			0537a_KNF	Moderate	Slight	0-15%	Sat	1110
			0551_CNF	Moderate	Slight	0-15%	Sat	8
			0557a_CNF	Severe	Slight	0-15%	Sat	1
			0570_CNF	Moderate	Slight	0-15%	Sat	1
			0582a_CNF	Moderate	Slight	0-15%	Sat	114
		29	0325_KNF	Moderate	Slight	0-15%	Sat	2949
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	307
			0525_KNF	Moderate	Severe	15-40%	Unsat	9
		34	0300_KNF	Moderate	Mod	15-40%	Sat	162
		35	0584a_CNF	Severe	Severe	15-40%	Sat	15
		36	0300a_KNF	Moderate	Mod	15-40%	Sat	546
			0310a_KNF	Moderate	Mod	15-40%	Sat	284
		39	0405_KNF	Moderate	Slight	0-15%	Sat	21
			0563_KNF	Moderate	Slight	0-15%	Sat	38
		41	0311_KNF	Severe	Severe	15-40%	Unsat	6
		42	0320_KNF	Severe	Severe	40-120%	Unsuit	87

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
			0562_CNF	Severe	Severe	40-120%	Sat	40
		43	0431_KNF	Severe	Severe	40-120%	Unsuit	24
		48	0302_KNF	Moderate	Severe	0-80%	Sat	1259
			0312_KNF	Severe	Severe	0-80%	Unsat	99
			0322_KNF	Severe	Severe	0-80%	Sat	796
			0614_CNF	Severe	Severe	0-80%	Sat	2
		49	0612_CNF	Severe	Severe	40-120%	Sat	325
			0613_CNF	Severe	Severe	40-120%	Sat	439
		50	0611_CNF	Moderate	Mod	0-15%	Sat	224
								26
	Operational Burn	1	0006_KNF	NA	Slight	0-5%	Sat	75
		2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	45
		3	0513_KNF	NA	Slight	0-15%	Sat	756
			0595_CNF	NA	Slight	0-15%	Sat	11
		4	0440_KNF	NA	Slight	15-40%	Unsat	188
		6	0507_KNF	NA	Slight	0-15%	Sat	672
		9	0020_KNF	NA	Slight	0-5%	Sat	111
		10	0037_KNF	NA	Slight	0-5%	Sat	197
		11	0519_KNF	Moderate	Slight	0-15%	Sat	3
		14	0326_KNF	Moderate	Slight	0-15%	Sat	10
		19	0406_KNF	Severe	Severe	15-40%	Unsat	152
		20	0407_KNF	Severe	Severe	15-40%	Unsat	45
		23	0401_KNF	Moderate	Slight	0-15%	Sat	1
		27	0324_KNF	Moderate	Slight	0-15%	Sat	46
			0401a_KNF	Moderate	Slight	0-15%	Sat	108

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
			0537a_KNF	Moderate	Slight	0-15%	Sat	101
			0551_CNF	Moderate	Slight	0-15%	Sat	2
			0582a_CNF	Moderate	Slight	0-15%	Sat	31
		29	0325_KNF	Moderate	Slight	0-15%	Sat	16
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	17
		39	0405_KNF	Moderate	Slight	0-15%	Sat	45
			0563_KNF	Moderate	Slight	0-15%	Sat	96
		43	0431_KNF	Severe	Severe	40-120%	Unsuit	51
		47	0476_KNF	NA	Severe	15-120%	Unsat	25
		48	0312_KNF	Severe	Severe	0-80%	Unsat	2
		50	0611_CNF	Moderate	Mod	0-15%	Sat	2
								0
	Savanna	1	0006_KNF	NA	Slight	0-5%	Sat	1
		2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	0
		3	0513_KNF	NA	Slight	0-15%	Sat	24
			0595_CNF	NA	Slight	0-15%	Sat	6
		4	0440_KNF	NA	Slight	15-40%	Unsat	0
		6	0507_KNF	NA	Slight	0-15%	Sat	40
		9	0020_KNF	NA	Slight	0-5%	Sat	3
		10	0037_KNF	NA	Slight	0-5%	Sat	7
		11	0519_KNF	Moderate	Slight	0-15%	Sat	39
		14	0326_KNF	Moderate	Slight	0-15%	Sat	3
		19	0406_KNF	Severe	Severe	15-40%	Unsat	33
		23	0401_KNF	Moderate	Slight	0-15%	Sat	47
		27	0324_KNF	Moderate	Slight	0-15%	Sat	25

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
			0401a_KNF	Moderate	Slight	0-15%	Sat	560
			0537a_KNF	Moderate	Slight	0-15%	Sat	1227
			0557a_CNF	Severe	Slight	0-15%	Sat	1
			0582a_CNF	Moderate	Slight	0-15%	Sat	483
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	238
			0525_KNF	Moderate	Severe	15-40%	Unsat	4
		36	0310a_KNF	Moderate	Mod	15-40%	Sat	4
		39	0405_KNF	Moderate	Slight	0-15%	Sat	141
			0563_KNF	Moderate	Slight	0-15%	Sat	350
		41	0311_KNF	Severe	Severe	15-40%	Unsat	2
		43	0431_KNF	Severe	Severe	40-120%	Unsuit	10
		49	0613_CNF	Severe	Severe	40-120%	Sat	7
		50	0611_CNF	Moderate	Mod	0-15%	Sat	0
Upper Sycamore Creek	Burn Only	23	0537_KNF	Moderate	Slight	0-15%	Sat	0
	Higher Intensity Mechanical	1	0006_KNF	NA	Slight	0-5%	Sat	43
		2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	8
		3	0513_KNF	NA	Slight	0-15%	Sat	8
			0595_CNF	NA	Slight	0-15%	Sat	9
		9	0050_CNF	NA	Slight	0-5%	Sat	3
		11	0519_KNF	Moderate	Slight	0-15%	Sat	1
			0585_CNF	Moderate	Slight	0-15%	Sat	158
		14	0565_KNF	Severe	Slight	0-15%	Sat	0
		15	0520_CNF	Severe	Slight	0-15%	Sat	145
		18	0530_CNF	Moderate	Mod	15-40%	Sat/Unsat	190
		23	0401_KNF	Moderate	Slight	0-15%	Sat	743

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
			0537_KNF	Moderate	Slight	0-15%	Sat	703
			0582_CNF	Moderate	Slight	0-15%	Sat	906
			0586_CNF	Moderate	Slight	0-15%	Sat	375
		25	0578_CNF	Severe	Slight	0-15%	Sat	132
		26	0010_KNF	Moderate	Slight	0-5%	Sat	105
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	100
			0525_KNF	Moderate	Severe	15-40%	Unsat	73
		39	0563_KNF	Moderate	Slight	0-15%	Sat	67
		42	0539_KNF	Severe	Severe	40-120%	Unsuit	2
			0575_CNF	Severe	Severe	40-120%	Unsuit	9
		44	0555_CNF	Severe	Severe	40-120%	Sat	1
		46	0495_CNF	NA	Slight	0-15%	Sat	20
		47	0541_KNF	NA	Severe	15-120%	Unsuit	3
		49	0540_KNF	Severe	Severe	40-120%	Unsat	1
								5
	Lower Intensity Mechanical	1	0006_KNF	NA	Slight	0-5%	Sat	28
		11	0519_KNF	Moderate	Slight	0-15%	Sat	24
		14	0565_KNF	Severe	Slight	0-15%	Sat	12
		18	0530_CNF	Moderate	Mod	15-40%	Sat/Unsat	14
		23	0401_KNF	Moderate	Slight	0-15%	Sat	82
			0537_KNF	Moderate	Slight	0-15%	Sat	296
			0582_CNF	Moderate	Slight	0-15%	Sat	10
		25	0578_CNF	Severe	Slight	0-15%	Sat	1
		26	0010_KNF	Moderate	Slight	0-5%	Sat	6
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	114

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
			0525_KNF	Moderate	Severe	15-40%	Unsat	82
		39	0563_KNF	Moderate	Slight	0-15%	Sat	245
		42	0539_KNF	Severe	Severe	40-120%	Unsuit	29
		46	0495_CNF	NA	Slight	0-15%	Sat	3
		47	0541_KNF	NA	Severe	15-120%	Unsuit	1
		49	0540_KNF	Severe	Severe	40-120%	Unsat	23
	No Treatment Proposed	1	0006_KNF	NA	Slight	0-5%	Sat	41
		2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	226
		3	0513_KNF	NA	Slight	0-15%	Sat	1992
			0595_CNF	NA	Slight	0-15%	Sat	0
		8	0518_KNF	NA	Slight	0-15%	Sat	178
		9	0050_CNF	NA	Slight	0-5%	Sat	37
		10	0037_KNF	NA	Slight	0-5%	Sat	308
		11	0519_KNF	Moderate	Slight	0-15%	Sat	1054
			0585_CNF	Moderate	Slight	0-15%	Sat	184
		18	0530_CNF	Moderate	Mod	15-40%	Sat/Unsat	28
		19	0406_KNF	Severe	Severe	15-40%	Unsat	101
		23	0401_KNF	Moderate	Slight	0-15%	Sat	595
			0537_KNF	Moderate	Slight	0-15%	Sat	398
			0582_CNF	Moderate	Slight	0-15%	Sat	67
			0586_CNF	Moderate	Slight	0-15%	Sat	215
		26	0010_KNF	Moderate	Slight	0-5%	Sat	1
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	110
			0525_KNF	Moderate	Severe	15-40%	Unsat	144
		42	0539_KNF	Severe	Severe	40-120%	Unsuit	3

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
			0575_CNF	Severe	Severe	40-120%	Unsuit	0
		46	0495_CNF	NA	Slight	0-15%	Sat	1
								800
	Operational Burn	1	0006_KNF	NA	Slight	0-5%	Sat	45
		2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	74
		3	0513_KNF	NA	Slight	0-15%	Sat	191
		8	0518_KNF	NA	Slight	0-15%	Sat	1
		9	0050_CNF	NA	Slight	0-5%	Sat	46
		11	0585_CNF	Moderate	Slight	0-15%	Sat	19
		15	0520_CNF	Severe	Slight	0-15%	Sat	16
		18	0530_CNF	Moderate	Mod	15-40%	Sat/Unsat	5
		23	0401_KNF	Moderate	Slight	0-15%	Sat	2
			0582_CNF	Moderate	Slight	0-15%	Sat	14
			0586_CNF	Moderate	Slight	0-15%	Sat	6
		26	0010_KNF	Moderate	Slight	0-5%	Sat	12
		46	0495_CNF	NA	Slight	0-15%	Sat	155
	Savanna	1	0006_KNF	NA	Slight	0-5%	Sat	16
		3	0513_KNF	NA	Slight	0-15%	Sat	22
			0595_CNF	NA	Slight	0-15%	Sat	7
		11	0519_KNF	Moderate	Slight	0-15%	Sat	0
			0585_CNF	Moderate	Slight	0-15%	Sat	0
		23	0401_KNF	Moderate	Slight	0-15%	Sat	960
			0537_KNF	Moderate	Slight	0-15%	Sat	111
			0582_CNF	Moderate	Slight	0-15%	Sat	318
			0586_CNF	Moderate	Slight	0-15%	Sat	0

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		26	0010_KNF	Moderate	Slight	0-5%	Sat	31
		32	0402_KNF	Severe	Severe	15-40%	Sat/Unsat	1
			0525_KNF	Moderate	Severe	15-40%	Unsat	0
								7
Upper Woods Canyon	Aspen Treatment	11	0585_CNF	Moderate	Slight	0-15%	Sat	1
		32	0584_CNF	Severe	Severe	15-40%	Sat	3
	Burn Only	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	26
		11	0585_CNF	Moderate	Slight	0-15%	Sat	764
		12	0579_CNF	Moderate	Slight	0-15%	Sat	427
		23	0582_CNF	Moderate	Slight	0-15%	Sat	793
			0586_CNF	Moderate	Slight	0-15%	Sat	24
		25	0578_CNF	Severe	Slight	0-15%	Sat	300
		32	0565_CNF	Severe	Severe	15-40%	Sat	327
			0584_CNF	Severe	Severe	15-40%	Sat	827
		46	0495_CNF	NA	Slight	0-15%	Sat	34
	Higher Intensity Mechanical	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	13
		11	0585_CNF	Moderate	Slight	0-15%	Sat	902
		12	0579_CNF	Moderate	Slight	0-15%	Sat	276
		23	0582_CNF	Moderate	Slight	0-15%	Sat	947
			0586_CNF	Moderate	Slight	0-15%	Sat	90
		25	0578_CNF	Severe	Slight	0-15%	Sat	5
		32	0565_CNF	Severe	Severe	15-40%	Sat	77
			0584_CNF	Severe	Severe	15-40%	Sat	376
		42	0575_CNF	Severe	Severe	40-120%	Unsuit	0
	Lower Intensity	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	24

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
	Mechanical							
		11	0585_CNF	Moderate	Slight	0-15%	Sat	949
		12	0579_CNF	Moderate	Slight	0-15%	Sat	621
		23	0582_CNF	Moderate	Slight	0-15%	Sat	1011
			0586_CNF	Moderate	Slight	0-15%	Sat	124
		25	0578_CNF	Severe	Slight	0-15%	Sat	476
		32	0565_CNF	Severe	Severe	15-40%	Sat	256
			0584_CNF	Severe	Severe	15-40%	Sat	968
		42	0575_CNF	Severe	Severe	40-120%	Unsuit	25
	Operational Burn	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	65
		11	0585_CNF	Moderate	Slight	0-15%	Sat	16
		12	0579_CNF	Moderate	Slight	0-15%	Sat	32
		23	0582_CNF	Moderate	Slight	0-15%	Sat	29
		25	0578_CNF	Severe	Slight	0-15%	Sat	43
		32	0565_CNF	Severe	Severe	15-40%	Sat	1
			0584_CNF	Severe	Severe	15-40%	Sat	1
		46	0495_CNF	NA	Slight	0-15%	Sat	4
	Savanna	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	10
		11	0585_CNF	Moderate	Slight	0-15%	Sat	283
		12	0579_CNF	Moderate	Slight	0-15%	Sat	42
		23	0582_CNF	Moderate	Slight	0-15%	Sat	368
		32	0565_CNF	Severe	Severe	15-40%	Sat	48
			0584_CNF	Severe	Severe	15-40%	Sat	52
Volunteer Canyon	Aspen Treatment	27	0536_CNF	Severe	Slight	0-15%	Sat	1
		44	0555_CNF	Severe	Severe	40-120%	Sat	0

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
	Burn Only	1	0053_CNF	NA	Slight	0-5%	Sat	12
		11	0585_CNF	Moderate	Slight	0-15%	Sat	41
		15	0520_CNF	Severe	Slight	0-15%	Sat	17
		23	0586_CNF	Moderate	Slight	0-15%	Sat	10
		27	0536_CNF	Severe	Slight	0-15%	Sat	34
		32	0550_CNF	Moderate	Mod	15-40%	Sat	51
			0584_CNF	Severe	Severe	15-40%	Sat	84
		36	0537_CNF	Severe	Mod	15-40%	Sat	87
		44	0555_CNF	Severe	Severe	40-120%	Sat	185
								0
	Higher Intensity Mechanical	1	0053_CNF	NA	Slight	0-5%	Sat	23
		2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	33
		11	0585_CNF	Moderate	Slight	0-15%	Sat	769
		18	0530_CNF	Moderate	Mod	15-40%	Sat/Unsat	93
		23	0401_KNF	Moderate	Slight	0-15%	Sat	206
			0582_CNF	Moderate	Slight	0-15%	Sat	1020
			0586_CNF	Moderate	Slight	0-15%	Sat	592
		25	0578_CNF	Severe	Slight	0-15%	Sat	5
		27	0536_CNF	Severe	Slight	0-15%	Sat	431
		32	0550_CNF	Moderate	Mod	15-40%	Sat	1
			0584_CNF	Severe	Severe	15-40%	Sat	83
		36	0537_CNF	Severe	Mod	15-40%	Sat	3
		44	0555_CNF	Severe	Severe	40-120%	Sat	23
		46	0495_CNF	NA	Slight	0-15%	Sat	22
								0

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
	Lower Intensity Mechanical	1	0053_CNF	NA	Slight	0-5%	Sat	9
		11	0585_CNF	Moderate	Slight	0-15%	Sat	21
		15	0520_CNF	Severe	Slight	0-15%	Sat	45
		18	0530_CNF	Moderate	Mod	15-40%	Sat/Unsat	180
		23	0401_KNF	Moderate	Slight	0-15%	Sat	37
			0582_CNF	Moderate	Slight	0-15%	Sat	210
			0586_CNF	Moderate	Slight	0-15%	Sat	13
		25	0578_CNF	Severe	Slight	0-15%	Sat	67
		27	0536_CNF	Severe	Slight	0-15%	Sat	58
		32	0550_CNF	Moderate	Mod	15-40%	Sat	26
			0584_CNF	Severe	Severe	15-40%	Sat	171
		36	0537_CNF	Severe	Mod	15-40%	Sat	37
		44	0555_CNF	Severe	Severe	40-120%	Sat	36
		46	0495_CNF	NA	Slight	0-15%	Sat	21
		47	0493_CNF	NA	Mod	15-120%	Sat	5
								0
	No Treatment Proposed	1	0053_CNF	NA	Slight	0-5%	Sat	0
		2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	546
		3	0595_CNF	NA	Slight	0-15%	Sat	102
		9	0050_CNF	NA	Slight	0-5%	Sat	1203
		11	0585_CNF	Moderate	Slight	0-15%	Sat	1384
		18	0530_CNF	Moderate	Mod	15-40%	Sat/Unsat	20
		23	0401_KNF	Moderate	Slight	0-15%	Sat	8
			0582_CNF	Moderate	Slight	0-15%	Sat	4019

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
			0586_CNF	Moderate	Slight	0-15%	Sat	2378
		25	0578_CNF	Severe	Slight	0-15%	Sat	2
		27	0536_CNF	Severe	Slight	0-15%	Sat	903
		32	0550_CNF	Moderate	Mod	15-40%	Sat	0
			0584_CNF	Severe	Severe	15-40%	Sat	586
		36	0537_CNF	Severe	Mod	15-40%	Sat	172
		42	0562_CNF	Severe	Severe	40-120%	Sat	39
		44	0555_CNF	Severe	Severe	40-120%	Sat	328
		46	0495_CNF	NA	Slight	0-15%	Sat	1
								6100
	Operational Burn	1	0053_CNF	NA	Slight	0-5%	Sat	39
		2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	59
		11	0585_CNF	Moderate	Slight	0-15%	Sat	19
		15	0520_CNF	Severe	Slight	0-15%	Sat	70
		18	0530_CNF	Moderate	Mod	15-40%	Sat/Unsat	7
		23	0401_KNF	Moderate	Slight	0-15%	Sat	11
			0582_CNF	Moderate	Slight	0-15%	Sat	12
			0586_CNF	Moderate	Slight	0-15%	Sat	0
		25	0578_CNF	Severe	Slight	0-15%	Sat	28
		27	0536_CNF	Severe	Slight	0-15%	Sat	11
		32	0550_CNF	Moderate	Mod	15-40%	Sat	3
			0584_CNF	Severe	Severe	15-40%	Sat	6
		36	0537_CNF	Severe	Mod	15-40%	Sat	1
		44	0555_CNF	Severe	Severe	40-120%	Sat	4
		46	0495_CNF	NA	Slight	0-15%	Sat	526

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		47	0470_CNF	NA	Severe	15-120%	Sat	0
			0493_CNF	NA	Mod	15-120%	Sat	6
								0
	Savanna	1	0053_CNF	NA	Slight	0-5%	Sat	17
		11	0585_CNF	Moderate	Slight	0-15%	Sat	2
		23	0401_KNF	Moderate	Slight	0-15%	Sat	97
			0582_CNF	Moderate	Slight	0-15%	Sat	294
			0586_CNF	Moderate	Slight	0-15%	Sat	36
		27	0536_CNF	Severe	Slight	0-15%	Sat	41
		32	0584_CNF	Severe	Severe	15-40%	Sat	5
Volunteer Wash	Aspen Treatment	11	0585_CNF	Moderate	Slight	0-15%	Sat	1
		23	0586_CNF	Moderate	Slight	0-15%	Sat	29
		27	0557a_CNF	Severe	Slight	0-15%	Sat	3
			0570_CNF	Moderate	Slight	0-15%	Sat	2
			0582a_CNF	Moderate	Slight	0-15%	Sat	4
		42	0562_CNF	Severe	Severe	40-120%	Sat	3
		50	0611_CNF	Moderate	Mod	0-15%	Sat	1
	Burn Only	3	0595_CNF	NA	Slight	0-15%	Sat	0
		11	0519_KNF	Moderate	Slight	0-15%	Sat	46
			0585_CNF	Moderate	Slight	0-15%	Sat	191
		23	0582_CNF	Moderate	Slight	0-15%	Sat	1
			0586_CNF	Moderate	Slight	0-15%	Sat	397
		27	0537a_KNF	Moderate	Slight	0-15%	Sat	27
			0557a_CNF	Severe	Slight	0-15%	Sat	17
			0570_CNF	Moderate	Slight	0-15%	Sat	286

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
			0582a_CNF	Moderate	Slight	0-15%	Sat	140
		35	0565a_CNF	Severe	Severe	15-40%	Sat	1
			0584a_CNF	Severe	Severe	15-40%	Sat	39
		42	0562_CNF	Severe	Severe	40-120%	Sat	53
		50	0611_CNF	Moderate	Mod	0-15%	Sat	6
								0
	Grassland Restoration	3	0513_KNF	NA	Slight	0-15%	Sat	0
			0595_CNF	NA	Slight	0-15%	Sat	13
		27	0582a_CNF	Moderate	Slight	0-15%	Sat	6
								0
	Higher Intensity Mechanical	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	9
		3	0595_CNF	NA	Slight	0-15%	Sat	40
		11	0519_KNF	Moderate	Slight	0-15%	Sat	37
			0585_CNF	Moderate	Slight	0-15%	Sat	97
		23	0582_CNF	Moderate	Slight	0-15%	Sat	83
			0586_CNF	Moderate	Slight	0-15%	Sat	1380
		27	0401a_KNF	Moderate	Slight	0-15%	Sat	10
			0537a_KNF	Moderate	Slight	0-15%	Sat	247
			0557a_CNF	Severe	Slight	0-15%	Sat	147
			0570_CNF	Moderate	Slight	0-15%	Sat	75
			0582a_CNF	Moderate	Slight	0-15%	Sat	6809
		35	0565a_CNF	Severe	Severe	15-40%	Sat	11
			0584a_CNF	Severe	Severe	15-40%	Sat	29
		42	0562_CNF	Severe	Severe	40-120%	Sat	25

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		50	0611_CNF	Moderate	Mod	0-15%	Sat	7
								0
	Lower Intensity Mechanical	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	3
		3	0595_CNF	NA	Slight	0-15%	Sat	1
		11	0519_KNF	Moderate	Slight	0-15%	Sat	9
		23	0582_CNF	Moderate	Slight	0-15%	Sat	17
			0586_CNF	Moderate	Slight	0-15%	Sat	300
		27	0401a_KNF	Moderate	Slight	0-15%	Sat	0
			0537a_KNF	Moderate	Slight	0-15%	Sat	64
			0557a_CNF	Severe	Slight	0-15%	Sat	18
			0570_CNF	Moderate	Slight	0-15%	Sat	749
			0582a_CNF	Moderate	Slight	0-15%	Sat	1423
		35	0565a_CNF	Severe	Severe	15-40%	Sat	90
			0584a_CNF	Severe	Severe	15-40%	Sat	19
		42	0562_CNF	Severe	Severe	40-120%	Sat	94
		50	0611_CNF	Moderate	Mod	0-15%	Sat	2
								0
	No Treatment Proposed	1	0006_KNF	NA	Slight	0-5%	Sat	36
		2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	75
		3	0513_KNF	NA	Slight	0-15%	Sat	317
			0595_CNF	NA	Slight	0-15%	Sat	261
		5	0640_CNF	NA	Slight	0-15%	Sat	1717
		7	0594_CNF	NA	Slight	0-15%	Sat	31
		10	0060_CNF	NA	Slight	0-5%	Sat	59

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		11	0585_CNF	Moderate	Slight	0-15%	Sat	722
		23	0586_CNF	Moderate	Slight	0-15%	Sat	2070
		27	0557a_CNF	Severe	Slight	0-15%	Sat	421
			0570_CNF	Moderate	Slight	0-15%	Sat	68
			0582a_CNF	Moderate	Slight	0-15%	Sat	1793
		28	0560_CNF	Slight	Slight	0-15%	Sat	31
		35	0565a_CNF	Severe	Severe	15-40%	Sat	0
			0584a_CNF	Severe	Severe	15-40%	Sat	24
		42	0562_CNF	Severe	Severe	40-120%	Sat	756
		48	0653_CNF	Moderate	Mod	0-80%	Sat	285
		49	0612_CNF	Severe	Severe	40-120%	Sat	43
		50	0610_CNF	Moderate	Mod	0-15%	Sat	11
			0611_CNF	Moderate	Mod	0-15%	Sat	3696
								2383
	Operational Burn	1	0006_KNF	NA	Slight	0-5%	Sat	0
		2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	280
		3	0513_KNF	NA	Slight	0-15%	Sat	56
			0595_CNF	NA	Slight	0-15%	Sat	671
		7	0594_CNF	NA	Slight	0-15%	Sat	86
		23	0582_CNF	Moderate	Slight	0-15%	Sat	23
			0586_CNF	Moderate	Slight	0-15%	Sat	12
		27	0537a_KNF	Moderate	Slight	0-15%	Sat	2
			0557a_CNF	Severe	Slight	0-15%	Sat	3
			0570_CNF	Moderate	Slight	0-15%	Sat	20
			0582a_CNF	Moderate	Slight	0-15%	Sat	260

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		35	0584a_CNF	Severe	Severe	15-40%	Sat	0
		42	0562_CNF	Severe	Severe	40-120%	Sat	91
								1
	Savanna	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	1
		3	0595_CNF	NA	Slight	0-15%	Sat	14
		11	0585_CNF	Moderate	Slight	0-15%	Sat	21
		23	0582_CNF	Moderate	Slight	0-15%	Sat	15
			0586_CNF	Moderate	Slight	0-15%	Sat	446
		27	0401a_KNF	Moderate	Slight	0-15%	Sat	0
			0537a_KNF	Moderate	Slight	0-15%	Sat	72
			0557a_CNF	Severe	Slight	0-15%	Sat	8
			0570_CNF	Moderate	Slight	0-15%	Sat	29
			0582a_CNF	Moderate	Slight	0-15%	Sat	1731
		35	0584a_CNF	Severe	Severe	15-40%	Sat	70
		50	0611_CNF	Moderate	Mod	0-15%	Sat	0
Walnut Creek-Lower Lake Mary	Burn Only	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	3
		11	0585_CNF	Moderate	Slight	0-15%	Sat	520
		23	0582_CNF	Moderate	Slight	0-15%	Sat	183
			0586_CNF	Moderate	Slight	0-15%	Sat	66
		32	0584_CNF	Severe	Severe	15-40%	Sat	141
	Higher Intensity Mechanical	1	0053_CNF	NA	Slight	0-5%	Sat	67
		2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	9
		11	0585_CNF	Moderate	Slight	0-15%	Sat	394
		22	0527_CNF	Moderate	Mod	15-40%	Sat	6

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		23	0582_CNF	Moderate	Slight	0-15%	Sat	314
			0586_CNF	Moderate	Slight	0-15%	Sat	81
		27	0536_CNF	Severe	Slight	0-15%	Sat	609
		32	0584_CNF	Severe	Severe	15-40%	Sat	78
		36	0537_CNF	Severe	Mod	15-40%	Sat	1037
								5
	Lower Intensity Mechanical	1	0053_CNF	NA	Slight	0-5%	Sat	16
		2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	15
		11	0585_CNF	Moderate	Slight	0-15%	Sat	1162
		22	0527_CNF	Moderate	Mod	15-40%	Sat	0
		23	0582_CNF	Moderate	Slight	0-15%	Sat	561
			0586_CNF	Moderate	Slight	0-15%	Sat	23
		27	0536_CNF	Severe	Slight	0-15%	Sat	127
		32	0584_CNF	Severe	Severe	15-40%	Sat	294
		36	0537_CNF	Severe	Mod	15-40%	Sat	113
		39	0500_CNF	Severe	Slight	0-15%	Sat	20
			0523_CNF	Severe	Slight	0-15%	Sat	0
								8
	No Treatment Proposed	1	0053_CNF	NA	Slight	0-5%	Sat	573
		2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	136
		11	0585_CNF	Moderate	Slight	0-15%	Sat	1908
		12	0579_CNF	Moderate	Slight	0-15%	Sat	682
		22	0527_CNF	Moderate	Mod	15-40%	Sat	181
		23	0582_CNF	Moderate	Slight	0-15%	Sat	711

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
			0586_CNF	Moderate	Slight	0-15%	Sat	109
		25	0567_CNF	Severe	Slight	0-15%	Sat	97
		27	0536_CNF	Severe	Slight	0-15%	Sat	1967
		32	0550_CNF	Moderate	Mod	15-40%	Sat	26
			0584_CNF	Severe	Severe	15-40%	Sat	1371
		36	0537_CNF	Severe	Mod	15-40%	Sat	1108
		39	0500_CNF	Severe	Slight	0-15%	Sat	57
			0523_CNF	Severe	Slight	0-15%	Sat	517
		41	0524_CNF	Severe	Severe	15-40%	Sat	218
		42	0575_CNF	Severe	Severe	40-120%	Unsuit	67
		44	0555_CNF	Severe	Severe	40-120%	Sat	236
								425
	Operational Burn	1	0053_CNF	NA	Slight	0-5%	Sat	226
		2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	63
		11	0585_CNF	Moderate	Slight	0-15%	Sat	28
		22	0527_CNF	Moderate	Mod	15-40%	Sat	19
		23	0582_CNF	Moderate	Slight	0-15%	Sat	10
			0586_CNF	Moderate	Slight	0-15%	Sat	39
		27	0536_CNF	Severe	Slight	0-15%	Sat	97
		32	0584_CNF	Severe	Severe	15-40%	Sat	13
		36	0537_CNF	Severe	Mod	15-40%	Sat	84
		39	0500_CNF	Severe	Slight	0-15%	Sat	9
			0523_CNF	Severe	Slight	0-15%	Sat	1
								656
	Savanna	1	0053_CNF	NA	Slight	0-5%	Sat	18

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		11	0585_CNF	Moderate	Slight	0-15%	Sat	119
		23	0582_CNF	Moderate	Slight	0-15%	Sat	11
			0586_CNF	Moderate	Slight	0-15%	Sat	233
		27	0536_CNF	Severe	Slight	0-15%	Sat	270
		32	0584_CNF	Severe	Severe	15-40%	Sat	97
		36	0537_CNF	Severe	Mod	15-40%	Sat	242
								1
Walnut Creek-Upper Lake Mary	Aspen Treatment	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	0
		23	0582_CNF	Moderate	Slight	0-15%	Sat	5
		32	0565_CNF	Severe	Severe	15-40%	Sat	2
			0584_CNF	Severe	Severe	15-40%	Sat	2
		48	0653_CNF	Moderate	Mod	0-80%	Sat	64
			0654_CNF	Moderate	Mod	0-80%	Sat	6
		49	0613_CNF	Severe	Severe	40-120%	Sat	0
	Burn Only	1	0053_CNF	NA	Slight	0-5%	Sat	15
		2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	13
		11	0585_CNF	Moderate	Slight	0-15%	Sat	392
		23	0557_CNF	Severe	Slight	0-15%	Sat	87
			0582_CNF	Moderate	Slight	0-15%	Sat	126
			0586_CNF	Moderate	Slight	0-15%	Sat	382
		32	0565_CNF	Severe	Severe	15-40%	Sat	35
			0584_CNF	Severe	Severe	15-40%	Sat	766
		42	0575_CNF	Severe	Severe	40-120%	Unsuit	0
		48	0653_CNF	Moderate	Mod	0-80%	Sat	154
			0654_CNF	Moderate	Mod	0-80%	Sat	296

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		49	0613_CNF	Severe	Severe	40-120%	Sat	30
	Grassland Restoration	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	35
		11	0585_CNF	Moderate	Slight	0-15%	Sat	18
		19	0515_CNF	NA	Mod	15-40%	Unsat	76
		23	0582_CNF	Moderate	Slight	0-15%	Sat	5
			0586_CNF	Moderate	Slight	0-15%	Sat	31
		32	0584_CNF	Severe	Severe	15-40%	Sat	12
		39	0523_CNF	Severe	Slight	0-15%	Sat	36
		41	0524_CNF	Severe	Severe	15-40%	Sat	0
	Higher Intensity Mechanical	1	0053_CNF	NA	Slight	0-5%	Sat	111
		2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	95
		9	0050_CNF	NA	Slight	0-5%	Sat	0
		11	0585_CNF	Moderate	Slight	0-15%	Sat	2931
		19	0515_CNF	NA	Mod	15-40%	Unsat	16
		23	0582_CNF	Moderate	Slight	0-15%	Sat	916
			0586_CNF	Moderate	Slight	0-15%	Sat	3152
		27	0536_CNF	Severe	Slight	0-15%	Sat	48
		32	0584_CNF	Severe	Severe	15-40%	Sat	1003
		36	0537_CNF	Severe	Mod	15-40%	Sat	66
		39	0523_CNF	Severe	Slight	0-15%	Sat	62
		41	0524_CNF	Severe	Severe	15-40%	Sat	736
		42	0575_CNF	Severe	Severe	40-120%	Unsuit	83
								24
	Lower Intensity Mechanical	1	0053_CNF	NA	Slight	0-5%	Sat	27

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	139
		9	0050_CNF	NA	Slight	0-5%	Sat	4
		11	0585_CNF	Moderate	Slight	0-15%	Sat	3708
		19	0515_CNF	NA	Mod	15-40%	Unsat	15
		23	0557_CNF	Severe	Slight	0-15%	Sat	55
			0582_CNF	Moderate	Slight	0-15%	Sat	1141
			0586_CNF	Moderate	Slight	0-15%	Sat	2754
		27	0536_CNF	Severe	Slight	0-15%	Sat	14
		32	0565_CNF	Severe	Severe	15-40%	Sat	71
			0584_CNF	Severe	Severe	15-40%	Sat	1644
		39	0523_CNF	Severe	Slight	0-15%	Sat	1
		41	0524_CNF	Severe	Severe	15-40%	Sat	41
		42	0575_CNF	Severe	Severe	40-120%	Unsuit	53
		48	0653_CNF	Moderate	Mod	0-80%	Sat	43
			0654_CNF	Moderate	Mod	0-80%	Sat	90
		49	0613_CNF	Severe	Severe	40-120%	Sat	25
								0
	No Treatment Proposed	1	0053_CNF	NA	Slight	0-5%	Sat	165
		2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	65
		9	0050_CNF	NA	Slight	0-5%	Sat	2
		11	0585_CNF	Moderate	Slight	0-15%	Sat	1204
		23	0557_CNF	Severe	Slight	0-15%	Sat	45
			0582_CNF	Moderate	Slight	0-15%	Sat	204
			0586_CNF	Moderate	Slight	0-15%	Sat	1165
		27	0536_CNF	Severe	Slight	0-15%	Sat	195

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		32	0565_CNF	Severe	Severe	15-40%	Sat	17
			0584_CNF	Severe	Severe	15-40%	Sat	553
		36	0537_CNF	Severe	Mod	15-40%	Sat	143
		39	0523_CNF	Severe	Slight	0-15%	Sat	50
		41	0524_CNF	Severe	Severe	15-40%	Sat	51
		42	0575_CNF	Severe	Severe	40-120%	Unsuit	61
		48	0653_CNF	Moderate	Mod	0-80%	Sat	161
			0654_CNF	Moderate	Mod	0-80%	Sat	465
		49	0613_CNF	Severe	Severe	40-120%	Sat	326
								671
	Operational Burn	1	0053_CNF	NA	Slight	0-5%	Sat	27
		2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	489
		9	0050_CNF	NA	Slight	0-5%	Sat	23
		11	0585_CNF	Moderate	Slight	0-15%	Sat	242
		19	0515_CNF	NA	Mod	15-40%	Unsat	352
		23	0582_CNF	Moderate	Slight	0-15%	Sat	117
			0586_CNF	Moderate	Slight	0-15%	Sat	158
		32	0584_CNF	Severe	Severe	15-40%	Sat	34
		36	0537_CNF	Severe	Mod	15-40%	Sat	11
		39	0523_CNF	Severe	Slight	0-15%	Sat	18
		41	0524_CNF	Severe	Severe	15-40%	Sat	113
		48	0653_CNF	Moderate	Mod	0-80%	Sat	4
								309
	Savanna	1	0053_CNF	NA	Slight	0-5%	Sat	50
		2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	118

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		9	0050_CNF	NA	Slight	0-5%	Sat	4
		11	0585_CNF	Moderate	Slight	0-15%	Sat	1628
		19	0515_CNF	NA	Mod	15-40%	Unsat	36
		23	0582_CNF	Moderate	Slight	0-15%	Sat	592
			0586_CNF	Moderate	Slight	0-15%	Sat	1674
		27	0536_CNF	Severe	Slight	0-15%	Sat	5
		32	0584_CNF	Severe	Severe	15-40%	Sat	241
		39	0523_CNF	Severe	Slight	0-15%	Sat	63
		41	0524_CNF	Severe	Severe	15-40%	Sat	19
		42	0575_CNF	Severe	Severe	40-120%	Unsuit	2
								14
West Fork Oak Creek	Burn Only	12	0579_CNF	Moderate	Slight	0-15%	Sat	73
		23	0582_CNF	Moderate	Slight	0-15%	Sat	8
			0586_CNF	Moderate	Slight	0-15%	Sat	24
		24	0546_CNF	Severe	Slight	0-15%	Sat	95
		32	0549_CNF	Moderate	Mod	15-40%	Sat	270
			0550_CNF	Moderate	Mod	15-40%	Sat	51
			0565_CNF	Severe	Severe	15-40%	Sat	40
			0584_CNF	Severe	Severe	15-40%	Sat	115
		44	0555_CNF	Severe	Severe	40-120%	Sat	208
		47	0471_CNF	NA	Severe	15-120%	Unsuit	6
		48	0651_CNF	Severe	Severe	0-80%	Sat	63
	Grassland Restoration	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	7
		44	0555_CNF	Severe	Severe	40-120%	Sat	6
	Higher Intensity	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	16

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
	Mechanical							
		11	0585_CNF	Moderate	Slight	0-15%	Sat	961
		12	0579_CNF	Moderate	Slight	0-15%	Sat	168
		23	0582_CNF	Moderate	Slight	0-15%	Sat	216
			0586_CNF	Moderate	Slight	0-15%	Sat	915
		24	0546_CNF	Severe	Slight	0-15%	Sat	15
		32	0549_CNF	Moderate	Mod	15-40%	Sat	14
			0565_CNF	Severe	Severe	15-40%	Sat	19
			0584_CNF	Severe	Severe	15-40%	Sat	742
		44	0555_CNF	Severe	Severe	40-120%	Sat	27
		48	0651_CNF	Severe	Severe	0-80%	Sat	1
	Lower Intensity Mechanical	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	2
		11	0585_CNF	Moderate	Slight	0-15%	Sat	185
		12	0579_CNF	Moderate	Slight	0-15%	Sat	147
		18	0530_CNF	Moderate	Mod	15-40%	Sat/Unsat	6
		23	0582_CNF	Moderate	Slight	0-15%	Sat	189
			0586_CNF	Moderate	Slight	0-15%	Sat	213
		24	0546_CNF	Severe	Slight	0-15%	Sat	1886
		32	0549_CNF	Moderate	Mod	15-40%	Sat	660
			0550_CNF	Moderate	Mod	15-40%	Sat	12
			0565_CNF	Severe	Severe	15-40%	Sat	43
			0584_CNF	Severe	Severe	15-40%	Sat	768
		44	0555_CNF	Severe	Severe	40-120%	Sat	116
		47	0471_CNF	NA	Severe	15-120%	Unsuit	3
		48	0651_CNF	Severe	Severe	0-80%	Sat	245

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
			0654_CNF	Moderate	Mod	0-80%	Sat	0
	No Treatment Proposed	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	51
		11	0585_CNF	Moderate	Slight	0-15%	Sat	681
		12	0579_CNF	Moderate	Slight	0-15%	Sat	139
		18	0530_CNF	Moderate	Mod	15-40%	Sat/Unsat	7
		23	0582_CNF	Moderate	Slight	0-15%	Sat	341
			0586_CNF	Moderate	Slight	0-15%	Sat	1479
		24	0546_CNF	Severe	Slight	0-15%	Sat	4964
		32	0549_CNF	Moderate	Mod	15-40%	Sat	1533
			0565_CNF	Severe	Severe	15-40%	Sat	20
			0584_CNF	Severe	Severe	15-40%	Sat	1212
		44	0555_CNF	Severe	Severe	40-120%	Sat	898
		47	0471_CNF	NA	Severe	15-120%	Unsuit	0
		48	0651_CNF	Severe	Severe	0-80%	Sat	326
			0654_CNF	Moderate	Mod	0-80%	Sat	66
								122
	Operational Burn	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	75
		11	0585_CNF	Moderate	Slight	0-15%	Sat	2
		23	0582_CNF	Moderate	Slight	0-15%	Sat	17
			0586_CNF	Moderate	Slight	0-15%	Sat	2
		32	0584_CNF	Severe	Severe	15-40%	Sat	11
		44	0555_CNF	Severe	Severe	40-120%	Sat	3
	Savanna	2	0055_CNF	NA	Slight	0-5%	Sat/Unsat	15
		11	0585_CNF	Moderate	Slight	0-15%	Sat	447
		12	0579_CNF	Moderate	Slight	0-15%	Sat	28

Sum of SoilAcres								
HUC_Name_6	**AltB_TxGrp**	**Stratum**	**TESU_NF**	**Harvest Limitation**	**Erosion Hazard**	**Slope**	**Soil Condition**	**Total**
		23	0582_CNF	Moderate	Slight	0-15%	Sat	59
			0586_CNF	Moderate	Slight	0-15%	Sat	188
		32	0565_CNF	Severe	Severe	15-40%	Sat	10
			0584_CNF	Severe	Severe	15-40%	Sat	65
		44	0555_CNF	Severe	Severe	40-120%	Sat	1
		48	0651_CNF	Severe	Severe	0-80%	Sat	0
Yeager Draw	Higher Intensity Mechanical	32	0565_CNF	Severe	Severe	15-40%	Sat	4
		39	0523_CNF	Severe	Slight	0-15%	Sat	46
		46	0453_CNF	NA	Mod	0-15%	Unsat	9
	Lower Intensity Mechanical	32	0565_CNF	Severe	Severe	15-40%	Sat	39
		39	0523_CNF	Severe	Slight	0-15%	Sat	2
Grand Total								988764

Attachment 4. Cumulative Effects Soil Disturbance

Summary of Cumulative Effects by 6th Code Watersheds by alternative: The following tables display the expected ground disturbance from proposed activities within each Alternative. Following the tables on ground disturbance by Alternatives are the acres of expected ground disturbance for current and future foreseeable activities that are expected within the cumulative effects boundary.

Table 37. Alternative B Summary of Cumulative Effects by 6th Code Watershed

6th CODE HUC NAME	6th code	EIS		Baseline	Future Foreseeable		Current/Ongoing		Project Total	
		Total EIS	Total EIS	Total Baseline (roads, private land, grazing)	Total	Total Future/Foreseeable	Total	Total Current	Total Cum Effects	Total Cum Effects
	Acres	Ground Disturbance	6th code Percent Ground Disturbance	Ground Disturbance	Treatment Acres	Ground Disturbance	Treatment Acres	Ground Disturbance	Ground Disturbance	Percent Ground Disturbance
Anderson Canyon	31,284	351	1.1	93	36	5	2,608	391	841	2.7
Babbitt Lake	28,413	1,485	5.2	250	1,355	203	436	65	2,004	7.1
Bar M Canyon	17,551	1,496	8.5	164	16	2	3,026	454	2,116	12.1
Bear Canyon	21,982	1,070	4.9	165	1,060	159	85	13	1,406	6.4
Bear Jaw Canyon	11,135	431	3.9	70	7	1	247	37	539	4.8
Big Spring Canyon	31,697	1,995	6.3	395	367	55	2,746	412	2,857	9.0
Cataract Creek Headwaters	16,699	256	1.5	1,787	173	26	1,461	219	2,288	13.7
Cedar Creek	8,888	129	1.5	21	7	1	872	131	282	3.2
Cherry Canyon-Walnut Creek	28,330	1,114	3.9	437	2,597	390	9,359	1,404	3,344	11.8
Cinder Basin	39,864	177	0.4	124	7	1	0	0	302	0.8
Coconino Wash Headwaters	51,193	3,112	6.1	552	8,457	1,269	4,971	746	5,678	11.1
Curley Wallace Tank	13,431	13	0.1	78	1,309	196	5,541	831	1,119	8.3
Dent and Sayer Tank	37,216	952	2.6	247	9,592	1,439	8,386	1,258	3,896	10.5
Devil Dog Canyon	11,196	96	0.9	176	159	24	70	11	307	2.7
Dogtown Wash	11,662	523	4.5	380	193	29	865	130	1,062	9.1
Doney Park	42,133	528	1.3	3,584	3,684	553	948	142	4,807	11.4
Double Cabin Park-Jacks Canyon	21,660	183	0.8	299	1,500	225	2,871	431	1,138	5.3
Dry Creek	34,398	0	0.0	947	69	10	0	0	957	2.8
Fry Canyon	19,175	740	3.9	163	998	150	1,620	243	1,295	6.8

6th CODE HUC NAME	6th code	EIS		Baseline	Future Foreseeable		Current/Ongoing		Project Total	
		Total EIS	Total EIS	Total Baseline (roads, private land, grazing)	Total	Total Future/Foreseeable	Total	Total Current	Total Cum Effects	Total Cum Effects
	Acres	Ground Disturbance	6th code Percent Ground Disturbance	Ground Disturbance	Treatment Acres	Ground Disturbance	Treatment Acres	Ground Disturbance	Ground Disturbance	Percent Ground Disturbance
Garland Prairie	25,054	1,298	5.2	638	1,345	202	272	41	2,179	8.7
Government Canyon	12,765	187	1.5	68	157	24	142	21	300	2.4
Government Prairie	20,399	1,106	5.4	973	530	80	435	65	2,223	10.9
Grapevine Canyon	19,186	308	1.6	83	0	0	0	0	391	2.0
Grindstone Wash	17,796	167	0.9	169	0	0	1,235	185	522	2.9
Johnson Creek	30,857	320	1.0	537	10,070	1,510	1,455	218	2,586	8.4
Juan Tank Canyon	14,231	49	0.3	177	3,725	559	13	2	786	5.5
Kinnikinick Canyon	24,895	974	3.9	134	36	5	2,667	400	1,514	6.1
Klostermeyer Lake	28,109	117	0.4	127	1	0	0	0	244	0.9
Little LO Spring Canyon	12,260	919	7.5	71	0	0	0	0	990	8.1
Little Red Horse Wash	27,465	67	0.2	149	777	117	3,360	504	837	3.0
Long Lake-Chavel Pass Ditch	14,590	79	0.5	108	256	38	0	0	225	1.5
Lower Deadman Wash	31,266	25	0.1	148	1,156	173	0	0	347	1.1
Lower Rio de Flag	35,308	551	1.6	6,189	190	29	2,649	397	7,166	20.3
Lower Sycamore Creek	30,677	20	0.1	45	7,676	1,151	38	6	1,223	4.0
Lower Woods Canyon	26,131	785	3.0	143	9,958	1,494	272	41	2,462	9.4
MC Canyon	21,686	259	1.2	156	6,319	948	193	29	1,392	6.4
Meath Wash	37,538	25	0.1	265	0	0	127	19	309	0.8
Middle Deadman Wash	22,888	260	1.1	406	3,832	575	0	0	1,241	5.4
Middle Oak Creek	39,896	41	0.1	4,276	5,861	879	4	1	5,196	13.0
Middle Spring Valley Wash	32,672	495	1.5	119	9,233	1,385	0	0	1,999	6.1
Middle Sycamore Creek	18,335	888	4.8	104	125	19	0	0	1,010	5.5
Miller Wash Headwaters	31,220	502	1.6	252	284	43	5,936	890	1,687	5.4
Mormon Canyon	19,252	115	0.6	134	0	0	488	73	322	1.7
Mormon Lake	25,968	1,426	5.5	706	1,194	179	7,296	1,094	3,405	13.1
Munds Canyon	41,179	3,809	9.2	1,481	177	27	2,267	340	5,656	13.7

6th CODE HUC NAME	6th code	EIS		Baseline	Future Foreseeable		Current/Ongoing		Project Total	
		Total EIS	Total EIS	Total Baseline (roads, private land, grazing)	Total	Total Future/Foreseeable	Total	Total Current	Total Cum Effects	Total Cum Effects
	Acres	Ground Disturbance	6th code Percent Ground Disturbance	Ground Disturbance	Treatment Acres	Ground Disturbance	Treatment Acres	Ground Disturbance	Ground Disturbance	Percent Ground Disturbance
Pitman Valley-Scholz Lake	28,459	1,766	6.2	710	0	0	1,792	269	2,745	9.6
Porcupine Canyon-Walnut Creek	16,622	0	0.0	667	111	17	33	5	688	4.1
Pumphouse Wash	31,546	1,762	5.6	1,746	789	118	10,528	1,579	5,206	16.5
Rabbit Canyon	41,339	24	0.1	74	14	2	251	38	138	0.3
Rain Tank Wash	38,483	574	1.5	209	10,623	1,593	2,144	322	2,698	7.0
Rattlesnake Canyon	17,023	223	1.3	143	10,827	1,624	1,584	238	2,228	13.1
Rattlesnake Wash	16,259	66	0.4	87	1,222	183	313	47	383	2.4
Red Horse Wash Headwaters	19,561	854	4.4	141	382	57	897	135	1,187	6.1
Sawmill Tank	13,730	859	6.3	384	760	114	78	12	1,369	10.0
Sawmill Wash	12,385	720	5.8	90	0	0	0	0	810	6.5
Secret Canyon	11,138	0	0.0	53	0	0	0	0	53	0.5
Sinclair Wash	6,766	23	0.3	1,699	0	0	103	15	1,737	25.7
Smoot Lake	21,535	210	1.0	119	1,361	204	0	0	534	2.5
Spring Creek	30,830	0	0.0	258	43	6	0	0	265	0.9
Telephone Tank	14,934	675	4.5	497	0	0	1,813	272	1,445	9.7
Tule Canyon	29,866	2,271	7.6	293	200	30	7,064	1,060	3,654	12.2
Upper Cataract Creek	25,011	235	0.9	181	103	15	116	17	449	1.8
Upper Cedar Wash (Local Drainage)	23,476	994	4.2	229	318	48	0	0	1,270	5.4
Upper Deadman Wash	22,752	1,002	4.4	260	11	2	842	126	1,390	6.1
Upper Hell Canyon	29,249	529	1.8	312	0	0	1,700	255	1,096	3.7
Upper Kana-a Wash	38,801	221	0.6	155	6,074	911	991	149	1,437	3.7
Upper Lee Canyon	29,537	121	0.4	159	6,131	920	1,765	265	1,465	5.0
Upper Oak Creek	17,900	1,238	6.9	284	8,757	1,314	711	107	2,943	16.4
Upper Padre Canyon	22,105	379	1.7	246	408	61	4,131	620	1,306	5.9

6th CODE HUC NAME	6th code	EIS		Baseline	Future Foreseeable		Current/Ongoing		Project Total	
		Total EIS	Total EIS	Total Baseline (roads, private land, grazing)	Total	Total Future/Foreseeable	Total	Total Current	Total Cum Effects	Total Cum Effects
	Acres	Ground Disturbance	6th code Percent Ground Disturbance	Ground Disturbance	Treatment Acres	Ground Disturbance	Treatment Acres	Ground Disturbance	Ground Disturbance	Percent Ground Disturbance
Upper Red Lake Wash	26,930	1,527	5.7	420	7	1	1	0	1,948	7.2
Upper Rio de Flag	44,551	1,269	2.8	3,990	0	0	4,152	623	5,882	13.2
Upper San Francisco Wash	34,397	257	0.7	942	9	1	687	103	1,304	3.8
Upper Spring Valley Wash	38,305	2,717	7.1	670	0	0	7,979	1,197	4,584	12.0
Upper Sycamore Creek	14,916	975	6.5	362	3,512	527	0	0	1,864	12.5
Upper Woods Canyon	12,671	1,108	8.7	151	1,152	173	1,575	236	1,669	13.2
Volunteer Canyon	24,506	754	3.1	173	23	3	3,323	499	1,429	5.8
Volunteer Wash	31,771	2,153	6.8	894	1,173	176	686	103	3,326	10.5
Walnut Creek-Lower Lake Mary	18,920	1,092	5.8	224	206	31	2,200	330	1,678	8.9
Walnut Creek-Upper Lake Mary	34,473	3,809	11.0	264	229	34	416	62	4,170	12.1
West Fork Oak Creek	27,339	1,128	4.1	258	141	21	0	0	1,407	5.1
Yeager Draw	24,465	16	0.1	102	488	73	0	0	191	0.8
TOTAL	**2,032,080**	**60,995**	**3.0**	**45,041**	**22,434**	**22,434**	**132,837**	**19,926**	**148,396**	**7.3**

Table 38. Alternative C Summary of Cumulative Effects by 6th Code Watershed

6th CODE HUC NAME	6th code acres	EIS		Baseline	Future Foreseeable		Current/Ongoing		Project Total	
		Total	Total EIS	Total Baseline (roads, private land, grazing)	Total	Total Future/Foreseeable	Total	Total Current	Total Cum Effects	Total Cum Effects
		Ground Disturbance	Percent Ground Disturbance	Ground Disturbance	Treatment Acres	Ground Disturbance	Treatment Acres	Ground Disturbance	Ground Disturbance	Percent Ground Disturbance
Anderson Canyon	31,284	408	1.3	93	36	5	2,608	391	898	2.9
Babbitt Lake	28,413	1,835	6.5	250	1,355	203	436	65	2,354	8.3
Bar M Canyon	17,551	1,623	9.2	164	16	2	3,026	454	2,244	12.8
Bear Canyon	21,982	1,160	5.3	165	1,060	159	85	13	1,497	6.8
Bear Jaw Canyon	11,135	452	4.1	70	7	1	247	37	560	5.0
Big Spring Canyon	31,697	2,245	7.1	395	367	55	2,746	412	3,107	9.8
Cataract Creek Headwaters	16,699	278	1.7	1,787	173	26	1,461	219	2,310	13.8
Cedar Creek	8,888	130	1.5	21	7	1	872	131	283	3.2
Cherry Canyon-Walnut Creek	28,330	1,161	4.1	437	2,597	390	9,359	1,404	3,392	12.0
Cinder Basin	39,864	189	0.5	124	7	1	0	0	315	0.8
Coconino Wash Headwaters	51,193	3,130	6.1	552	8,457	1,269	4,971	746	5,695	11.1
Curley Wallace Tank	13,431	13	0.1	78	1,309	196	5,541	831	1,119	8.3
Dent and Sayer Tank	37,216	989	2.7	247	9,592	1,439	8,386	1,258	3,933	10.6
Devil Dog Canyon	11,196	101	0.9	176	159	24	70	11	312	2.8
Dogtown Wash	11,662	538	4.6	380	193	29	865	130	1,077	9.2
Doney Park	42,133	573	1.4	3,584	3,684	553	948	142	4,852	11.5
Double Cabin Park-Jacks Canyon	21,660	241	1.1	299	1,500	225	2,871	431	1,196	5.5
Dry Creek	34,398	0	0.0	947	69	10	0	0	957	2.8
Fry Canyon	19,175	915	4.8	163	998	150	1,620	243	1,470	7.7
Garland Prairie	25,054	1,641	6.5	638	1,345	202	272	41	2,522	10.1
Government Canyon	12,765	193	1.5	68	157	24	142	21	306	2.4
Government Prairie	20,399	1,392	6.8	973	530	80	435	65	2,509	12.3
Grapevine Canyon	19,186	345	1.8	83	0	0	0	0	428	2.2
Grindstone Wash	17,796	167	0.9	169	0	0	1,235	185	522	2.9
Johnson Creek	30,857	329	1.1	537	10,070	1,510	1,455	218	2,595	8.4
Juan Tank Canyon	14,231	49	0.3	177	3,725	559	13	2	786	5.5
Kinnikinick Canyon	24,895	1,201	4.8	134	36	5	2,667	400	1,740	7.0

6th CODE HUC NAME	6th code acres	EIS		Baseline	Future Foreseeable		Current/Ongoing		Project Total	
		Total	Total EIS	Total Baseline (roads, private land, grazing)	Total	Total Future/Foreseeable	Total	Total Current	Total Cum Effects	Total Cum Effects
		Ground Disturbance	Percent Ground Disturbance	Ground Disturbance	Treatment Acres	Ground Disturbance	Treatment Acres	Ground Disturbance	Ground Disturbance	Percent Ground Disturbance
Klostermeyer Lake	28,109	117	0.4	127	1	0	0	0	244	0.9
Little LO Spring Canyon	12,260	926	7.6	71	0	0	0	0	997	8.1
Little Red Horse Wash	27,465	67	0.2	149	777	117	3,360	504	837	3.0
Long Lake-Chavel Pass Ditch	14,590	82	0.6	108	256	38	0	0	229	1.6
Lower Deadman Wash	31,266	25	0.1	148	1,156	173	0	0	347	1.1
Lower Rio de Flag	35,308	600	1.7	6,189	190	29	2,649	397	7,215	20.4
Lower Sycamore Creek	30,677	20	0.1	45	7,676	1,151	38	6	1,223	4.0
Lower Woods Canyon	26,131	716	2.7	143	9,958	1,494	272	41	2,393	9.2
MC Canyon	21,686	288	1.3	156	6,319	948	193	29	1,421	6.6
Meath Wash	37,538	31	0.1	265	0	0	127	19	315	0.8
Middle Deadman Wash	22,888	265	1.2	406	3,832	575	0	0	1,246	5.4
Middle Oak Creek	39,896	47	0.1	4,276	5,861	879	4	1	5,202	13.0
Middle Spring Valley Wash	32,672	523	1.6	119	9,233	1,385	0	0	2,027	6.2
Middle Sycamore Creek	18,335	925	5.0	104	125	19	0	0	1,047	5.7
Miller Wash Headwaters	31,220	536	1.7	252	284	43	5,936	890	1,721	5.5
Mormon Canyon	19,252	119	0.6	134	0	0	488	73	326	1.7
Mormon Lake	25,968	1,605	6.2%	706	1,194	179	7,296	1,094	3,584	13.8%
Munds Canyon	41,179	4,057	9.9%	1,481	177	27	2,267	340	5,905	14.3%
Pitman Valley-Scholz Lake	28,459	1,890	6.6%	710	0	0	1,792	269	2,869	10.1%
Porcupine Canyon-Walnut Creek	16,622	0	0.0%	667	111	17	33	5	688	4.1%
Pumphouse Wash	31,546	1,971	6.2	1,746	789	118	10,528	1,579	5,415	17.2
Rabbit Canyon	41,339	24	0.1	74	14	2	251	38	138	0.3
Rain Tank Wash	38,483	527	1.4	209	10,623	1,593	2,144	322	2,651	6.9
Rattlesnake Canyon	17,023	225	1.3	143	10,827	1,624	1,584	238	2,230	13.1
Rattlesnake Wash	16,259	66	0.4	87	1,222	183	313	47	383	2.4
Red Horse Wash Headwaters	19,561	868	4.4	141	382	57	897	135	1,201	6.1
Sawmill Tank	13,730	1,053	7.7	384	760	114	78	12	1,563	11.4
Sawmill Wash	12,385	771	6.2	90	0	0	0	0	861	7.0

6th CODE HUC NAME	6th code acres	EIS		Baseline	Future Foreseeable		Current/Ongoing		Project Total	
		Total	Total EIS	Total Baseline (roads, private land, grazing)	Total	Total Future/Foreseeable	Total	Total Current	Total Cum Effects	Total Cum Effects
		Ground Disturbance	Percent Ground Disturbance	Ground Disturbance	Treatment Acres	Ground Disturbance	Treatment Acres	Ground Disturbance	Ground Disturbance	Percent Ground Disturbance
Secret Canyon	11,138	0	0.0	53	0	0	0	0	53	0.5
Sinclair Wash	6,766	25	0.4	1,699	0	0	103	15	1,739	25.7
Smoot Lake	21,535	210	1.0	119	1,361	204	0	0	534	2.5
Spring Creek	30,830	0	0.0	258	43	6	0	0	265	0.9
Telephone Tank	14,934	714	4.8	497	0	0	1,813	272	1,483	9.9
Tule Canyon	29,866	2,460	8.2	293	200	30	7,064	1,060	3,842	12.9
Upper Cataract Creek	25,011	242	1.0	181	103	15	116	17	456	1.8
Upper Cedar Wash (Local Drainage)	23,476	1,087	4.6	229	318	48	0	0	1,364	5.8
Upper Deadman Wash	22,752	1,037	4.6	260	11	2	842	126	1,424	6.3
Upper Hell Canyon	29,249	598	2.0	312	0	0	1,700	255	1,165	4.0
Upper Kana-a Wash	38,801	238	0.6	155	6,074	911	991	149	1,453	3.7
Upper Lee Canyon	29,537	127	0.4	159	6,131	920	1,765	265	1,471	5.0
Upper Oak Creek	17,900	1,294	7.2	284	8,757	1,314	711	107	2,999	16.8
Upper Padre Canyon	22,105	467	2.1	246	408	61	4,131	620	1,393	6.3
Upper Red Lake Wash	26,930	1,642	6.1	420	7	1	1	0	2,064	7.7
Upper Rio de Flag	44,551	1,431	3.2	3,990	0	0	4,152	623	6,044	13.6
Upper San Francisco Wash	34,397	286	0.8	942	9	1	687	103	1,333	3.9
Upper Spring Valley Wash	38,305	3,087	8.1	670	0	0	7,979	1,197	4,953	12.9
Upper Sycamore Creek	14,916	1,075	7.2	362	3,512	527	0	0	1,963	13.2
Upper Woods Canyon	12,671	1,121	8.8	151	1,152	173	1,575	236	1,682	13.3
Volunteer Canyon	24,506	837	3.4	173	23	3	3,323	499	1,512	6.2
Volunteer Wash	31,771	2,601	8.2	894	1,173	176	686	103	3,774	11.9
Walnut Creek-Lower Lake Mary	18,920	1,139	6.0	224	206	31	2,200	330	1,725	9.1
Walnut Creek-Upper Lake Mary	34,473	3,671	10.6	264	229	34	416	62	4,032	11.7
West Fork Oak Creek	27,339	1,312	4.8	258	141	21	0	0	1,591	5.8
Yeager Draw	24,465	16	0.1	102	488	73	0	0	191	0.8
TOTAL	**2,032,080**	**66,358**	**3**	**45,041**	**149,561**	**22,434**	**132,837**	**19,926**	**153,759**	**7.6**

Table 39. Alternative D Summary of Cumulative Effects by 6th Code Watershed

6th CODE HUC NAME	6th code	EIS		Baseline	Future Foreseeable		Current/Ongoing		Project Total	
		Total EIS	Total EIS	Total Baseline (roads, private land, grazing)	Total	Total Future/Foreseeable			Total EIS	Total EIS
	Acres	Ground Disturbance	6th code Percent Ground Disturbance	Ground Disturbance	Treatment Acres	Ground Disturbance		Acres	Ground Disturbance	6th code Percent Ground Disturbance
Anderson Canyon	31,284	308	1.0	93	36	5	2,608	391	798	2.6
Babbitt Lake	28,413	1,296	4.6	250	1,355	203	436	65	1,815	6.4
Bar M Canyon	17,551	1,217	6.9	164	16	2	3,026	454	1,837	10.5
Bear Canyon	21,982	920	4.2	165	1,060	159	85	13	1,256	5.7
Bear Jaw Canyon	11,135	378	3.4	70	7	1	247	37	487	4.4
Big Spring Canyon	31,697	1,721	5.4	395	367	55	2,746	412	2,583	8.1
Cataract Creek Headwaters	16,699	222	1.3	1,787	173	26	1,461	219	2,254	13.5
Cedar Creek	8,888	112	1.3	21	7	1	872	131	265	3.0
Cherry Canyon-Walnut Creek	28,330	983	3.5	437	2,597	390	9,359	1,404	3,213	11.3
Cinder Basin	39,864	177	0.4	124	7	1	0	0	302	0.8
Coconino Wash Headwaters	51,193	2,699	5.3	552	8,457	1,269	4,971	746	5,265	10.3
Curley Wallace Tank	13,431	12	0.1	78	1,309	196	5,541	831	1,117	8.3
Dent and Sayer Tank	37,216	849	2.3	247	9,592	1,439	8,386	1,258	3,793	10.2
Devil Dog Canyon	11,196	85	0.8	176	159	24	70	11	296	2.6
Dogtown Wash	11,662	453	3.9	380	193	29	865	130	992	8.5
Doney Park	42,133	511	1.2	3,584	3,684	553	948	142	4,790	11.4
Double Cabin Park-Jacks Canyon	21,660	150	0.7	299	1,500	225	2,871	431	1,105	5.1
Dry Creek	34,398	0	0.0	947	69	10	0	0	957	2.8
Fry Canyon	19,175	633	3.3	163	998	150	1,620	243	1,188	6.2
Garland Prairie	25,054	1,145	4.6	638	1,345	202	272	41	2,026	8.1
Government Canyon	12,765	165	1.3	68	157	24	142	21	278	2.2
Government Prairie	20,399	961	4.7	973	530	80	435	65	2,078	10.2
Grapevine Canyon	19,186	269	1.4	83	0	0	0	0	352	1.8
Grindstone Wash	17,796	149	0.8	169	0	0	1,235	185	504	2.8
Johnson Creek	30,857	284	0.9	537	10,070	1,510	1,455	218	2,549	8.3

6th CODE HUC NAME	6th code	EIS		Baseline	Future Foreseeable		Current/Ongoing		Project Total	
		Total EIS	Total EIS	Total Baseline (roads, private land, grazing)	Total	Total Future/Foreseeable			Total EIS	Total EIS
	Acres	Ground Disturbance	6th code Percent Ground Disturbance	Ground Disturbance	Treatment Acres	Ground Disturbance		Acres	Ground Disturbance	6th code Percent Ground Disturbance
Juan Tank Canyon	14,231	44	0.3	177	3,725	559	13	2	781	5.5
Kinnikinick Canyon	24,895	822	3.3	134	36	5	2,667	400	1,361	5.5
Klostermeyer Lake	28,109	105	0.4	127	1	0	0	0	232	0.8
Little LO Spring Canyon	12,260	801	6.5	71	0	0	0	0	872	7.1
Little Red Horse Wash	27,465	59	0.2	149	777	117	3,360	504	828	3.0
Long Lake-Chavel Pass Ditch	14,590	60	0.4	108	256	38	0	0	207	1.4
Lower Deadman Wash	31,266	21	0.1	148	1,156	173	0	0	342	1.1
Lower Rio de Flag	35,308	491	1.4	6,189	190	29	2,649	397	7,107	20.1
Lower Sycamore Creek	30,677	18	0.1	45	7,676	1,151	38	6	1,220	4.0
Lower Woods Canyon	26,131	686	2.6	143	9,958	1,494	272	41	2,363	9.0
MC Canyon	21,686	227	1.0	156	6,319	948	193	29	1,360	6.3
Meath Wash	37,538	23	0.1	265	0	0	127	19	307	0.8
Middle Deadman Wash	22,888	246	1.1	406	3,832	575	0	0	1,226	5.4
Middle Oak Creek	39,896	37	0.1	4,276	5,861	879	4	1	5,192	13.0
Middle Spring Valley Wash	32,672	440	1.3	119	9,233	1,385	0	0	1,944	6.0
Middle Sycamore Creek	18,335	750	4.1	104	125	19	0	0	872	4.8
Miller Wash Headwaters	31,220	448	1.4	252	284	43	5,936	890	1,633	5.2
Mormon Canyon	19,252	102	0.5	134	0	0	488	73	309	1.6
Mormon Lake	25,968	1,186	4.6	706	1,194	179	7,296	1,094	3,165	12.2
Munds Canyon	41,179	3,222	7.8	1,481	177	27	2,267	340	5,070	12.3
Pitman Valley-Scholz Lake	28,459	1,531	5.4	710	0	0	1,792	269	2,510	8.8
Porcupine Canyon-Walnut Creek	16,622	0	0.0	667	111	17	33	5	688	4.1
Pumphouse Wash	31,546	1,498	4.7	1,746	789	118	10,528	1,579	4,942	15.7
Rabbit Canyon	41,339	18	0.0	74	14	2	251	38	133	0.3
Rain Tank Wash	38,483	510	1.3	209	10,623	1,593	2,144	322	2,634	6.8
Rattlesnake Canyon	17,023	176	1.0	143	10,827	1,624	1,584	238	2,181	12.8
Rattlesnake Wash	16,259	60	0.4	87	1,222	183	313	47	377	2.3

6th CODE HUC NAME	6th code	EIS		Baseline	Future Foreseeable		Current/Ongoing		Project Total	
		Total EIS	Total EIS	Total Baseline (roads, private land, grazing)	Total	Total Future/Foreseeable			Total EIS	Total EIS
	Acres	Ground Disturbance	6th code Percent Ground Disturbance	Ground Disturbance	Treatment Acres	Ground Disturbance		Acres	Ground Disturbance	6th code Percent Ground Disturbance
Red Horse Wash Headwaters	19,561	738	3.8	141	382	57	897	135	1,071	5.5
Sawmill Tank	13,730	755	5.5	384	760	114	78	12	1,265	9.2
Sawmill Wash	12,385	602	4.9	90	0	0	0	0	692	5.6
Secret Canyon	11,138	0	0.0	53	0	0	0	0	53	0.5
Sinclair Wash	6,766	21	0.3	1,699	0	0	103	15	1,735	25.6
Smoot Lake	21,535	184	0.9	119	1,361	204	0	0	508	2.4
Spring Creek	30,830	0	0.0	258	43	6	0	0	265	0.9
Telephone Tank	14,934	589	3.9	497	0	0	1,813	272	1,358	9.1
Tule Canyon	29,866	1,966	6.6	293	200	30	7,064	1,060	3,348	11.2
Upper Cataract Creek	25,011	209	0.8	181	103	15	116	17	423	1.7
Upper Cedar Wash (Local Drainage)	23,476	888	3.8	229	318	48	0	0	1,164	5.0
Upper Deadman Wash	22,752	910	4.0	260	11	2	842	126	1,298	5.7
Upper Hell Canyon	29,249	455	1.6	312	0	0	1,700	255	1,022	3.5
Upper Kana-a Wash	38,801	217	0.6	155	6,074	911	991	149	1,432	3.7
Upper Lee Canyon	29,537	114	0.4	159	6,131	920	1,765	265	1,457	4.9
Upper Oak Creek	17,900	1,063	5.9	284	8,757	1,314	711	107	2,767	15.5
Upper Padre Canyon	22,105	317	1.4	246	408	61	4,131	620	1,243	5.6
Upper Red Lake Wash	26,930	1,318	4.9	420	7	1	1	0	1,739	6.5
Upper Rio de Flag	44,551	1,092	2.5	3,990	0	0	4,152	623	5,705	12.8
Upper San Francisco Wash	34,397	257	0.7	942	9	1	687	103	1,304	3.8
Upper Spring Valley Wash	38,305	2,345	6.1	670	0	0	7,979	1,197	4,211	11.0
Upper Sycamore Creek	14,916	850	5.7	362	3,512	527	0	0	1,739	11.7
Upper Woods Canyon	12,671	903	7.1	151	1,152	173	1,575	236	1,464	11.6
Volunteer Canyon	24,506	652	2.7	173	23	3	3,323	499	1,327	5.4
Volunteer Wash	31,771	1,868	5.9	894	1,173	176	686	103	3,041	9.6
Walnut Creek-Lower Lake Mary	18,920	959	5.1	224	206	31	2,200	330	1,544	8.2
Walnut Creek-Upper Lake Mary	34,473	3,307	9.6	264	229	34	416	62	3,669	10.6

6th CODE HUC NAME	6th code	EIS		Baseline	Future Foreseeable		Current/Ongoing		Project Total	
		Total EIS	Total EIS	Total Baseline (roads, private land, grazing)	Total	Total Future/Foreseeable			Total EIS	Total EIS
	Acres	Ground Disturbance	6th code Percent Ground Disturbance	Ground Disturbance	Treatment Acres	Ground Disturbance		Acres	Ground Disturbance	6th code Percent Ground Disturbance
West Fork Oak Creek	27,339	945	3.5	258	141	21	0	0	1,224	4.5
Yeager Draw	24,465	14	0.1	102	488	73	0	0	189	0.8
TOTAL	**2,032,080**	**52,814**	**2.6**	**45,041**	**149,561**	**22,434**	**132,837**	**19,926**	**140,214**	**6.9**

Baseline data

Roads, private land, grazing allotments, and powerline corridors are baseline disturbance area acres for the project area. Baseline activities are ground disturbance constants. For this analysis, roads and powerline corridors are synonymous because the area of powerline corridors that contains baseline ground disturbance is the access road. Ground disturbance from cattle grazing is difficult to quantify, however, ground disturbance does occur from grazing where cattle congregate, which are typically associated watering sites. For this analysis, we will use the baseline disturbance for grazing as an area adjacent to stock tanks (1/8 mile buffer). There are approximately 7,170 miles of roads within the analysis area according to three forest Geographic Information System (gis) data layers. These data layers did not differentiate between open and closed roads, so for this analysis, we assumed that all roads are open, therefore the actual acres of current ground disturbance is probably overstated for the cumulative effects analysis area. The 7,170 miles of road assumed a 15 foot width and assumed 100 percent disturbance. There are 101,461 acres of private land within the cumulative effects boundary area. Of these acres, there are variable levels of development ranging from municipal development in areas such as Flagstaff, Willimans, Tusayan, and Sedona to completely undeveloped. For this analysis, each private land parcel was classified as either having high or low development by examining each parcel with air photos to determine the level of development. For areas of high development, a disturbance factor of 70 percent was applied (this is the equivalent disturbed area factor used on the Apache-Sitgreaves Equivalent Disturbed Area process for high development). For areas of low development, a 10 percent disturbance factor was applied after examining aerial photos (the Apache-Sitgreaves Equivalent Disturbed Area process for low development applies a 20 percent disturbance factor and after reviewing parcels by air photo this factor was too high because there is a general lack of any development on many of the parcels).

Table 40. Cumulative Effects Baseline Data

6th CODE HUC NAME	Total 6th code acres	Acres of grazing allotment	Acres stock tank disturbance	Total Acres of Private Land	Acres of Private Land disturbance	Miles of roads	Acres of Road Disturbance	Total Acres of Base Disturbance	Percent of 6th code base disturbance
Anderson Canyon	31,284	31,284	14.2	125	13	37	67	93	0.3%
Babbitt Lake	28,413	28,413	10.3	196	20	121	221	250	0.9%
Bar M Canyon	17,551	17,551	12.4	127	13	76	139	164	0.9%
Bear Canyon	21,982	21,982	3.3	194	19	78	142	165	0.7%
Bear Jaw Canyon	11,135	11,135	0.3	76	8	34	63	70	0.6%
Big Spring Canyon	31,697	30,442	21.9	940	94	154	279	395	1.2%
Cataract Creek Headwaters	16,699	7,179	19.9	5,064	1,602	91	165	1,787	10.7%
Cedar Creek	8,888	5,085	1.8	0	0	11	20	21	0.2%
Cherry Canyon-Walnut Creek	28,330	19,292	25.4	1,043	142	148	269	437	1.5%
Cinder Basin	39,864	4,933	0.4	0	0	68	124	124	0.3%
Coconino Wash Headwaters	51,193	37,425	10.9	591	247	162	294	552	1.1%
Curley Wallace Tank	13,431	13,431	3.2	143	14	33	61	78	0.6%
Dent and Sayer Tank	37,216	37,216	11.6	241	24	116	212	247	0.7%
Devil Dog Canyon	11,196	10,920	2.9	1,167	117	31	57	176	1.6%
Dogtown Wash	11,662	9,452	11.4	1,687	241	70	128	380	3.3%
Doney Park	42,133	20,979	13.5	5,445	3,146	234	425	3,584	8.5%
Double Cabin Park-Jacks Canyon	21,660	20,940	10.7	708	71	120	218	299	1.4%
Dry Creek	34,398	19,770	10.5	1,851	753	101	183	947	2.8%
Fry Canyon	19,175	19,143	18.0	249	25	66	120	163	0.8%
Garland Prairie	25,054	18,836	36.5	3,821	382	121	220	638	2.5%
Government Canyon	12,765	12,765	1.2	80	8	33	59	68	0.5%
Government Prairie	20,399	11,856	43.4	3,119	787	78	143	973	4.8%
Grapevine Canyon	19,186	19,186	10.1	118	12	34	61	83	0.4%

6th CODE HUC NAME	Total 6th code acres	Acres of grazing allotment	Acres stock tank disturbance	Total Acres of Private Land	Acres of Private Land disturbance	Miles of roads	Acres of Road Disturbance	Total Acres of Base Disturbance	Percent of 6th code base disturbance
Grindstone Wash	17,796	12,765	7.1	244	24	76	138	169	1.0%
Johnson Creek	30,857	28,794	35.2	1,795	180	177	322	537	1.7%
Juan Tank Canyon	14,231	13,839	14.4	500	50	62	112	177	1.2%
Kinnikinick Canyon	24,895	24,774	16.7	14	1	64	116	134	0.5%
Klostermeyer Lake	28,109	28,109	5.6	0	0	67	121	127	0.5%
Little LO Spring Canyon	12,260	12,255	4.4	0	0	37	66	71	0.6%
Little Red Horse Wash	27,465	27,465	4.0	0	0	80	145	149	0.5%
Long Lake-Chavel Pass Ditch	14,590	14,476	16.4	0	0	50	91	108	0.7%
Lower Deadman Wash	31,266	21,852	0.0	0	0	82	148	148	0.5%
Lower Rio de Flag	35,308	10,094	28.5	13,710	5,922	131	239	6,189	17.5%
Lower Sycamore Creek	30,677	30,677	11.6	86	9	14	25	45	0.1%
Lower Woods Canyon	26,131	25,637	8.9	226	23	61	111	143	0.5%
MC Canyon	21,686	21,686	9.1	0	0	81	147	156	0.7%
Meath Wash	37,538	32,905	18.0	691	69	98	177	265	0.7%
Middle Deadman Wash	22,888	21,929	5.4	1,925	192	114	208	406	1.8%
Middle Oak Creek	39,896	31,204	13.3	6,890	4,064	109	199	4,276	10.7%
Middle Spring Valley Wash	32,672	32,672	11.0	158	16	51	93	119	0.4%
Middle Sycamore Creek	18,335	16,033	16.8	42	4	46	83	104	0.6%
Miller Wash Headwaters	31,220	31,220	14.2	387	39	110	199	252	0.8%
Mormon Canyon	19,252	18,877	15.5	162	16	56	102	134	0.7%
Mormon Lake	25,968	24,294	15.6	1,594	518	95	172	706	2.7%
Munds Canyon	41,179	37,670	28.9	2,172	1,110	188	342	1,481	3.6%
Pitman Valley-Scholz Lake	28,459	24,963	49.1	3,623	408	139	253	710	2.5%
Porcupine Canyon-Walnut Creek	16,622	15,085	5.9	2,498	490	94	171	667	4.0%
Pumphouse Wash	31,546	26,868	25.5	2,545	1,415	168	306	1,746	5.5%
Rabbit Canyon	41,339	41,339	10.7	0	0	35	64	74	0.2%
Rain Tank Wash	38,483	38,483	18.7	275	28	89	163	209	0.5%
Rattlesnake Canyon	17,023	16,230	6.6	79	8	71	129	143	0.8%
Rattlesnake Wash	16,259	6,434	3.5	0	0	46	84	87	0.5%
Red Horse Wash Headwaters	19,561	19,561	10.2	163	16	63	115	141	0.7%
Sawmill Tank	13,730	11,750	14.6	1,649	242	70	128	384	2.8%
Sawmill Wash	12,385	12,385	7.2	0	0	45	83	90	0.7%
Secret Canyon	11,138	7,182	2.6	0	0	28	50	53	0.5%
Sinclair Wash	6,766	1,884	2.5	3,150	1,634	34	62	1,699	25.1%

6th CODE HUC NAME	Total 6th code acres	Acres of grazing allotment	Acres stock tank disturbance	Total Acres of Private Land	Acres of Private Land disturbance	Miles of roads	Acres of Road Disturbance	Total Acres of Base Disturbance	Percent of 6th code base disturbance
Smoot Lake	21,535	21,535	10.5	328	33	42	76	119	0.6%
Spring Creek	30,830	29,568	10.5	887	89	88	159	258	0.8%
Telephone Tank	14,934	4,959	12.9	1,069	405	43	79	497	3.3%
Tule Canyon	29,866	27,042	18.9	193	19	140	254	293	1.0%
Upper Cataract Creek	25,011	25,011	41.0	800	8	73	132	181	0.7%
Upper Cedar Wash (Local Drainage)	23,476	23,476	5.8	836	84	77	140	229	1.0%
Upper Deadman Wash	22,752	22,575	5.4	892	89	91	165	260	1.1%
Upper Hell Canyon	29,249	28,372	19.2	393	39	139	253	312	1.1%
Upper Kana-a Wash	38,801	629	0.0	0	0	85	155	155	0.4%
Upper Lee Canyon	29,537	25,149	6.9	403	40	62	112	159	0.5%
Upper Oak Creek	17,900	11,880	4.7	294	157	67	122	284	1.6%
Upper Padre Canyon	22,105	20,806	20.3	1,326	133	51	93	246	1.1%
Upper Red Lake Wash	26,930	26,930	23.1	1,710	170	125	227	420	1.6%
Upper Rio de Flag	44,551	29,877	30.4	8,918	3,563	218	396	3,990	9.0%
Upper San Francisco Wash	34,397	26,542	7.8	1,921	554	209	380	942	2.7%
Upper Spring Valley Wash	38,305	36,263	36.6	3,189	319	173	314	670	1.7%
Upper Sycamore Creek	14,916	12,566	12.6	2,370	237	62	112	362	2.4%
Upper Woods Canyon	12,671	12,573	5.6	0	0	80	146	151	1.2%
Volunteer Canyon	24,506	11,539	11.4	964	96	36	66	173	0.7%
Volunteer Wash	31,771	30,700	27.9	1,937	505	199	361	894	2.8%
Walnut Creek-Lower Lake Mary	18,920	17,714	5.6	512	51	92	168	224	1.2%
Walnut Creek-Upper Lake Mary	34,473	29,698	13.8	232	23	125	227	264	0.8%
West Fork Oak Creek	27,339	22,402	8.6	185	18	127	231	258	0.9%
Yeager Draw	24,465	24,465	13.2	539	54	19	34	102	0.4%
	2,032,080	1,692,878	1,104	101,461	30,903	7,169	13,034	45,041	2.2%

Current Projects

Current ongoing is a summary of ground disturbing activities within 6th code watershed from 2009 to the present as stated within the FACTS activities layers.The use of the last three years for current and ongoing is tied to the 1-2 year recovery time for vegetation as stated in Elliot et al. 2010. All activities use a 15percent disturbance factor, so the acres overestimate ground disturbance on burning treatments, and maximize the ground disturbance for mechanical treatment acres. Because of these assumptions, this analysis over analyzes the acres of ground disturbance from project area

Table 41. Current Projects Total Acres and Expected Ground Disturbance Acres

Total acres treated	Expected Ground disturbance (acres)
132,837	19,926

Table 42. Current and ongoing project acres by 6th code watershed and treatment type

Coconino National Forest Treatments		Kaibab National Forest Treatments	
6th code watershed/treatment type	**acres**	**6th code watershed/treatment type**	**acres**
Anderson Canyon	2,608	**Bear Canyon**	85
Broadcast Burning - Covers a majority of the unit	1,810	Wildfire - Fuels Benefit	85
Thinning for Hazardous Fuels Reduction	399	**Big Spring Canyon**	2,746
Tree Encroachment Control	399	Broadcast Burning - Covers a majority of the unit	709
Babbitt Lake	436	Burning of Piled Material	900
Control of Understory Vegetation	77	Commercial Thin	719
Thinning for Hazardous Fuels Reduction	222	Group Selection Cut (UA/RH/FH)	249
Wildland Fire Use	136	Piling of Fuels, Hand or Machine	168
Bar M Canyon	3,026	**Cataract Creek Headwaters**	1,461
Broadcast Burning - Covers a majority of the unit	629	Broadcast Burning - Covers a majority of the unit	683
Burning of Piled Material	165	Burning of Piled Material	64
Commercial Thin	209	Piling of Fuels, Hand or Machine	713

Coconino National Forest Treatments		Kaibab National Forest Treatments	
6th code watershed/treatment type	**acres**	**6th code watershed/treatment type**	**acres**
Piling of Fuels, Hand or Machine	59	**Cedar Creek**	872
Thinning for Hazardous Fuels Reduction	7	Wildfire - Fuels Benefit	872
Wildland Fire Use	1,957	**Coconino Wash Headwaters**	4,971
Bear Jaw Canyon	247	Broadcast Burning - Covers a majority of the unit	2,741
Broadcast Burning - Covers a majority of the unit	247	Burning of Piled Material	276
Cherry Canyon-Walnut Creek	9,359	Piling of Fuels, Hand or Machine	335
Broadcast Burning - Covers a majority of the unit	1,273	Wildfire - Fuels Benefit	391
Burning of Piled Material	2,011	Wildfire - Natural Ignition	1,229
Commercial Thin	1,773	**Curley Wallace Tank**	5,541
Permanent Land Clearing	150	Wildfire - Natural Ignition	5,541
Piling of Fuels, Hand or Machine	1,859	**Dent and Sayer Tank**	6,443
Thinning for Hazardous Fuels Reduction	1,859	Wildfire - Fuels Benefit	4,245
Tree Encroachment Control	104	Wildlife Habitat Mechanical treatment	2,198
Wildlife Habitat Mechanical treatment	330	**Devil Dog Canyon**	70
Dent and Sayer Tank	1,943	Broadcast Burning - Covers a majority of the unit	70
Control of Understory Vegetation	0	**Dogtown Wash**	865
Thinning for Hazardous Fuels Reduction	0	Broadcast Burning - Covers a majority of the unit	202
Wildland Fire Use	1,943	Burning of Piled Material	286
Doney Park	948	Piling of Fuels, Hand or Machine	377
Broadcast Burning - Covers a majority of the unit	566	**Garland Prairie**	272
Burning of Piled Material	86	Burning of Piled Material	180
Chipping of Fuels	106	Piling of Fuels, Hand or Machine	91
Site Preparation for Natural Regeneration - Manual	104	**Government Canyon**	142
Thinning for Hazardous Fuels Reduction	86	Wildfire - Fuels Benefit	142

Coconino National Forest Treatments		Kaibab National Forest Treatments	
6th code watershed/treatment type	**acres**	**6th code watershed/treatment type**	**acres**
Double Cabin Park-Jacks Canyon	2,871	**Government Prairie**	435
Broadcast Burning - Covers a majority of the unit	2,511	Burning of Piled Material	75
Wildfire - Natural Ignition	204	Piling of Fuels, Hand or Machine	273
Wildland Fire Use	157	Wildfire - Natural Ignition	87
Fry Canyon	1,620	**Grindstone Wash**	1,235
Broadcast Burning - Covers a majority of the unit	306	Broadcast Burning - Covers a majority of the unit	1,235
Burning of Piled Material	907	**Johnson Creek**	1,455
Commercial Thin	407	Broadcast Burning - Covers a majority of the unit	1,022
Kinnikinick Canyon	2,667	Burning of Piled Material	103
Broadcast Burning - Covers a majority of the unit	1,167	Piling of Fuels, Hand or Machine	330
Commercial Thin	500	**Juan Tank Canyon**	13
Piling of Fuels, Hand or Machine	500	Piling of Fuels, Hand or Machine	13
Thinning for Hazardous Fuels Reduction	500	**Little Red Horse Wash**	3,360
Lower Rio de Flag	2,649	Broadcast Burning - Covers a majority of the unit	11
Broadcast Burning - Covers a majority of the unit	565	Burning of Piled Material	58
Burning of Piled Material	762	Piling of Fuels, Hand or Machine	54
Liberation Cut	0	Wildfire - Fuels Benefit	3,160
Piling of Fuels, Hand or Machine	687	Wildfire - Natural Ignition	77
Thinning for Hazardous Fuels Reduction	597	**Lower Sycamore Creek**	38
Tree Encroachment Control	21	Wildfire - Fuels Benefit	38
Yarding - Removal of Fuels by Carrying or Dragging	16	**MC Canyon**	193
Lower Woods Canyon	272	Broadcast Burning - Covers a majority of the unit	193
Broadcast Burning - Covers a majority of the unit	272	**Meath Wash**	127
Middle Oak Creek	4	Broadcast Burning - Covers a majority of the unit	127

Coconino National Forest Treatments		Kaibab National Forest Treatments	
6th code watershed/treatment type	**acres**	**6th code watershed/treatment type**	**acres**
Burning of Piled Material	2	**Miller Wash Headwaters**	5,936
Thinning for Hazardous Fuels Reduction	2	Wildfire - Fuels Benefit	1,301
Mormon Canyon	488	Wildfire - Natural Ignition	848
Broadcast Burning - Covers a majority of the unit	488	Wildlife Habitat Mechanical treatment	3,786
Mormon Lake	7,296	**Pitman Valley-Scholz Lake**	1,792
Broadcast Burning - Covers a majority of the unit	2,079	Broadcast Burning - Covers a majority of the unit	359
Burning of Piled Material	1,171	Burning of Piled Material	956
Commercial Thin	3,203	Commercial Thin	195
Piling of Fuels, Hand or Machine	353	Group Selection Cut (UA/RH/FH)	68
Thinning for Hazardous Fuels Reduction	330	Piling of Fuels, Hand or Machine	214
Wildland Fire Use	161	**Rabbit Canyon**	58
Munds Canyon	**2,267**	Wildfire - Fuels Benefit	58
Burning of Piled Material	13	**Rain Tank Wash**	**2,144**
Piling of Fuels, Hand or Machine	256	Broadcast Burning - Covers a majority of the unit	789
Thinning for Hazardous Fuels Reduction	269	Burning of Piled Material	205
Wildfire - Natural Ignition	1,729	Wildfire - Fuels Benefit	1,151
Porcupine Canyon-Walnut Creek	**33**	**Rattlesnake Wash**	**313**
Burning of Piled Material	11	Broadcast Burning - Covers a majority of the unit	313
Piling of Fuels, Hand or Machine	11	**Red Horse Wash Headwaters**	**897**
Thinning for Hazardous Fuels Reduction	11	Wildfire - Natural Ignition	897
Pumphouse Wash	**10,528**	**Sawmill Tank**	**78**
Broadcast Burning - Covers a majority of the unit	2,180	Burning of Piled Material	78
Burning of Piled Material	3,797	**Tule Canyon**	**7,064**
Commercial Thin	3,784	Broadcast Burning - Covers a majority of the unit	260

Coconino National Forest Treatments		Kaibab National Forest Treatments	
6th code watershed/treatment type	**acres**	**6th code watershed/treatment type**	**acres**
Piling of Fuels, Hand or Machine	303	Burning of Piled Material	223
Thinning for Hazardous Fuels Reduction	357	Wildfire - Fuels Benefit	6,580
Tree Encroachment Control	107	**Upper Cataract Creek**	**116**
Rabbit Canyon	**193**	Burning of Piled Material	12
Control of Understory Vegetation	1	Piling of Fuels, Hand or Machine	104
Thinning for Hazardous Fuels Reduction	1	**Upper Hell Canyon**	**1,700**
Wildland Fire Use	191	Broadcast Burning - Covers a majority of the unit	1,628
Rattlesnake Canyon	**1,584**	Burning of Piled Material	37
Wildfire - Natural Ignition	1,222	Piling of Fuels, Hand or Machine	35
Wildland Fire Use	362	**Upper Lee Canyon**	**1,765**
Sinclair Wash	**103**	Burning of Piled Material	25
Broadcast Burning - Covers a majority of the unit	53	Piling of Fuels, Hand or Machine	25
Burning of Piled Material	25	Wildfire - Natural Ignition	1,715
Commercial Thin	25	**Upper Red Lake Wash**	**1**
Telephone Tank	**1,813**	Burning of Piled Material	1
Broadcast Burning - Covers a majority of the unit	833	**Upper Spring Valley Wash**	**7,979**
Burning of Piled Material	444	Broadcast Burning - Covers a majority of the unit	239
Commercial Thin	536	Burning of Piled Material	1,148
Upper Deadman Wash	**842**	Piling of Fuels, Hand or Machine	113
Broadcast Burning - Covers a majority of the unit	842	Thinning for Hazardous Fuels Reduction	57
Upper Kana-a Wash	**991**	Wildfire - Natural Ignition	6,421
Wildfire - Natural Ignition	768	**Grand Total**	**60,167**
Wildland Fire Use	223		
Upper Oak Creek	**711**		

Coconino National Forest Treatments		Kaibab National Forest Treatments	
6th code watershed/treatment type	**acres**	**6th code watershed/treatment type**	**acres**
Broadcast Burning - Covers a majority of the unit	533		
Burning of Piled Material	124		
Thinning for Hazardous Fuels Reduction	54		
Upper Padre Canyon	**4,131**		
Broadcast Burning - Covers a majority of the unit	3,955		
Commercial Thin	59		
Piling of Fuels, Hand or Machine	59		
Thinning for Hazardous Fuels Reduction	59		
Upper Rio de Flag	**4,152**		
Broadcast Burning - Covers a majority of the unit	2,014		
Burning of Piled Material	1,459		
Commercial Thin	498		
Permanent Land Clearing	4		
Piling of Fuels, Hand or Machine	79		
Site Preparation for Natural Regeneration - Manual	10		
Thinning for Hazardous Fuels Reduction	79		
Wildlife Habitat Regeneration cut	10		
Upper San Francisco Wash	**687**		
Broadcast Burning - Covers a majority of the unit	299		
Burning of Piled Material	318		
Piling of Fuels, Hand or Machine	42		
Thinning for Hazardous Fuels Reduction	28		
Upper Woods Canyon	**1,575**		
Wildfire - Natural Ignition	375		

Coconino National Forest Treatments		Kaibab National Forest Treatments	
6th code watershed/treatment type	**acres**	**6th code watershed/treatment type**	**acres**
Wildland Fire Use	1,200		
Volunteer Canyon	**3,323**		
Broadcast Burning - Covers a majority of the unit	1,116		
Burning of Piled Material	964		
Commercial Thin	1,244		
Volunteer Wash	**686**		
Broadcast Burning - Covers a majority of the unit	506		
Site Preparation for Natural Regeneration - Manual	90		
Wildlife Habitat Regeneration cut	90		
Walnut Creek-Lower Lake Mary	**2,200**		
Broadcast Burning - Covers a majority of the unit	2,103		
Piling of Fuels, Hand or Machine	96		
Walnut Creek-Upper Lake Mary	**416**		
Thinning for Hazardous Fuels Reduction	8		
Wildfire - Natural Ignition	408		
Grand Total	**72,670**		

Future Foreseeable projects

The following table summarizes the acres of treatment by project from future and foreseeable projects. The total acres of treatment are multiplied by 15 percent to display the expected acres of ground disturbance, and as such are overestimating burn acres and underestimating rock pit acres and are assuming all harvest treatments would be high intensity treatments.

Table 43. Future Foreseeable Projects

6th CODE HUC NAME	6th code acres	aspen restoration	Bill Williams Mtn	Camp Navajo	City	Community Tand	DogTown	Grapevine Interconnect	Eastside	Elk Park	Hart Prairie	Jack Smith Schultz	Mahan Landmark	Marshall	McCracken	Munds Park	Rock Pits COF	Rock Pits KNF	Railroad	Schultz Rehab	Schultz Salvage	Turkey Barney	Upper Basin	Upper Beaver Creek	WAPA	Wing Mountain	Woody Ridge	TOTAL TREAT ACRES	TOTAL Ground Disturbance	% of 6th code
Anderson Canyon	31,284	0	0	0	0	0	0	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	187	0	0	229	34	0
Babbitt Lake	28,413	0	0	0	0	0	0	0	0	0	141	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	141	21	0
Bar M Canyon	17,551	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	125	0	0	0	125	19	0
Bear Canyon	21,982	50	0	0	0	0	0	0	0	0	0	0	0	0	422	0	0	15	0	0	0	0	0	0	0	0	0	488	73	0
Bear Jaw Canyon	11,135	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0	0	25	0	0	0	0	0	0	0	36	5	0
Big Spring Canyon	31,697	49	0	0	4,473	0	4,173	0	0	0	0	0	0	0	49	0	0	13	0	0	0	0	0	0	0	0	0	8,757	1,314	4
Cataract Creek Headwaters	16,699	0	1,429	0	36	0	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,500	225	1
Cedar Creek	8,888	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cherry Canyon-Walnut Creek	28,330	0	0	0	0	0	0	0	3,180	0	0	0	0	7,647	0	0	0	0	0	0	0	0	0	0	0	0	0	10,827	1,624	6
Cinder Basin	39,864	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	256	0	0	256	38	0
Coconino Wash Headwaters	51,193	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36	0	0	0	0	0	0	0	0	0	36	5	0
Curley Wallace Tank	13,431	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dent and Sayer Tank	37,216	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0	0	0	0	0	0	0	0	0	16	2	0
Devil Dog Canyon	11,196	0	69	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	69	10	0

6th CODE HUC NAME	6th code acres	aspen restoration	Bill Williams Mtn	Camp Navajo	City	Community Tand	DogTown	Grapevine Interconnect	Eastside	Elk Park	Hart Prairie	Jack Smith Schultz	Mahan Landmark	Marshall	McCracken	Munds Park	Rock Pits COF	Rock Pits KNF	Railroad	Schultz Rehab	Schultz Salvage	Turkey Barney	Upper Basin	Upper Beaver Creek	WAPA	Wing Mountain	Woody Ridge	TOTAL TREAT ACRES	TOTAL Ground Disturbance	% of 6th code
Dogtown Wash	11,662	0	87	0	2,500	0	2,463	0	0	0	0	0	0	0	811	0	0	0	0	0	0	0	0	0	0	0	0	5,861	879	8
Doney Park	42,133	0	0	0	0	0	0	0	530	0	0	0	0	0	0	0	0	0	0	518	146	0	0	0	0	0	0	1,194	179	0
Double Cabin Park-Jacks Canyon	21,660	0	0	0	0	0	0	0	0	0	0	0	4,202	0	0	0	0	0	0	0	0	0	0	5,756	0	0	0	9,958	1,494	7
Dry Creek	34,398	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,152	0	0	0	0	0	1,152	173	1
Fry Canyon	19,175	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,222	1,222	183	1
Garland Prairie	25,054	0	0	3,512	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3,512	527	2
Government Canyon	12,765	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Government Prairie	20,399	0	0	7,234	0	0	0	0	0	0	442	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7,676	1,151	6
Grapevine Canyon	19,186	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	43	0	0	43	6	0
Grindstone Wash	17,796	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Johnson Creek	30,857	0	789	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	789	118	0
Juan Tank Canyon	14,231	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kinnikinick Canyon	24,895	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	202	0	0	206	31	0
Klostermeyer Lake	28,109	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Little LO Spring Canyon	12,260	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	408	0	0	0	0	0	408	61	0
Little Red Horse Wash	27,465	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Long Lake-	14,590	0	0	0	0	0	0	0	0	0	0	0	2,519	0	0	0	0	0	0	0	0	0	0	0	78	0	0	2,597	390	3

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Chavel Pass Ditch																														
Lower Deadman Wash	31,266	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	200	0	0	200	30	0
Lower Rio de Flag	35,308	0	0	0	0	0	0	0	1,060	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,060	159	0
Lower Sycamore Creek	30,677	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	177	0	0	0	0	0	177	27	0
Lower Woods Canyon	26,131	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MC Canyon	21,686	0	0	0	0	0	0	0	0	0	0	0	0	0	6,314	0	0	5	0	0	0	0	0	0	0	0	0	6,319	948	4
Meath Wash	37,538	0	157	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	157	24	0
Middle Deadman Wash	22,888	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0	0	147	0	0	0	0	0	0	0	159	24	0
Middle Oak Creek	39,896	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Middle Spring Valley Wash	32,672	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	7	1	0
Middle Sycamore Creek	18,335	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0	0	0	987	0	0	0	0	0	998	150	1
Miller Wash Headwaters	31,220	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23	3	0
Mormon Canyon	19,252	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	193	0	0	193	29	0
Mormon Lake	25,968	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	111	0	0	0	111	17	0
Munds Canyon	41,179	0	0	0	0	0	0	0	0	0	0	0	0	0	0	350	17	0	0	0	0	0	0	0	0	0	0	367	55	0

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Pitman Valley-Scholz Lake	28,459	8	0	0	370	0	370	0	0	0	0	0	0	0	0	0	0	12	0	0	0	0	0	0	0	0	0	760	114	0
Porcupine Canyon-Walnut Creek	16,622	0	0	0	0	0	0	0	530	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	530	80	0
Pumphouse Wash	31,546	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,345	1,345	202	1
Rabbit Canyon	41,339	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rain Tank Wash	38,483	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rattlesnake Canyon	17,023	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,173	0	0	0	1,173	176	1
Rattlesnake Wash	16,259	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Red Horse Wash Headwaters	19,561	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	9	1	0
Sawmill Tank	13,730	79	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	0	0	0	0	0	0	0	0	0	103	15	0
Sawmill Wash	12,385	0	0	0	0	0	0	0	0	0	0	0	19	0	0	0	0	0	0	0	0	0	0	0	171	0	0	190	29	0
Secret Canyon	11,138	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3,684	0	0	0	0	0	3,684	553	5
Sinclair Wash	6,766	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Smoot Lake	21,535	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0	0	0	0	0	0	0	0	0	11	2	0
Spring Creek	30,830	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,361	0	0	0	0	0	1,361	204	1
Telephone Tank	14,934	0	0	5,932	0	0	0	0	0	0	0	0	0	0	0	0	15	0	0	0	0	0	0	0	0	128	0	6,074	911	6
Tule Canyon	29,866	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	1	0
Upper Cataract	25,011	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	7	1	0

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Creek																														
Upper Cedar Wash (Local Drainage)	23,476	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	7	1	0
Upper Deadman Wash	22,752	0	0	0	0	0	0	0	0	0	3,832	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3,832	575	3
Upper Hell Canyon	29,249	11	1,871	0	167	0	167	0	0	0	0	0	0	0	7,375	0	0	0	0	0	0	0	0	0	0	0	0	9,592	1,439	5
Upper Kana-a Wash	38,801	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	318	0	0	318	48	0
Upper Lee Canyon	29,537	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,156	0	0	0	0	1,156	173	1
Upper Oak Creek	17,900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0
Upper Padre Canyon	22,105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	284	0	0	284	43	0
Upper Red Lake Wash	26,930	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	14	2	0
Upper Rio de Flag	44,551	0	0	0	0	0	0	0	530	0	852	1,574	0	0	0	0	19	0	422	0	0	0	0	0	0	5,836	0	9,233	1,385	3
Upper San Francisco Wash	34,397	0	0	0	0	0	0	0	1,060	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	295	0	0	1,355	203	1
Upper Spring Valley Wash	38,305	169	0	0	0	865	0	0	0	0	261	0	0	0	0	0	0	14	0	0	0	0	0	0	0	0	0	1,309	196	1
Upper Sycamore Creek	14,916	0	0	777	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	777	117	1
Upper Woods Canyon	12,671	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	382	0	0	0	382	57	0
Volunteer	24,506	0	0	10,623	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10,62	1,59	7

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Canyon																												3	3	
Volunteer Wash	31,771	0	0	400	0	0	0	0	0	0	4,257	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3,800	0	8,457	1,269	4
Walnut Creek-Lower Lake Mary	18,920	0	0	0	0	0	0	0	0	3,322	0	0	0	2,805	0	0	5	0	0	0	0	0	0	0	0	0	0	6,131	920	5
Walnut Creek-Upper Lake Mary	34,473	0	0	0	0	0	0	0	0	3,564	0	0	0	154	0	0	7	0	0	0	0	0	0	0	0	0	0	3,725	559	2
West Fork Oak Creek	27,339	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	10,065	0	0	0	0	0	10,070	1,510	6
Yeager Draw	24,465	0	0	0	0	0	0	173	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	173	26	0
TOTAL	**2,032,080**	**405**	**4,402**	**28,477**	**7,546**	**865**	**7,209**	**214**	**6,890**	**6,886**	**9,786**	**1,574**	**6,739**	**10,605**	**14,971**	**350**	**101**	**186**	**422**	**690**	**146**	**17,835**	**1,156**	**7,546**	**2,229**	**9,763**	**2,567**	**149,561**	**22,434**	**1**