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Tahoe National Forest

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Motorized Travel Management

Draft Environmental Impact Statement

Volume I: Summary



Volunteers assisting Forest Service with maintenance of the Rubicon Jeep Trail

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Motorized Travel Management Draft Environmental Impact Statement

Nevada, Placer, Plumas, Sierra and Yuba Counties, California
September 2008

Volume I: Summary

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Abstract: This Draft Environmental Impact Statement (DEIS) describes the environmental effects of a proposal by the Tahoe National Forest (TNF) to;

1. Prohibit cross country motorized travel off of National Forest Transportation System (NFTS) roads, NFTS trails and areas designated as “Open Areas” for motorized vehicle use,
2. Make limited motorized trail additions to the existing National Forest Transportation System.
3. Make limited changes to current prohibitions and allowances for public motorized vehicle travel by vehicle class and season of use.

The areas affected by this proposal are outside of congressionally designated wilderness areas. These actions are needed in order to implement Subpart B of the 2005 Travel Management Rule (36 CFR Part 212.50-57) while providing for a diversity of motorized vehicle recreation opportunities, and providing motorized access to dispersed recreation opportunities on the TNF. The DEIS discloses environmental impacts associated with the proposed action, a no action alternative and five additional action alternatives developed in response to issues raised by the public. Of the alternatives under consideration at this stage, Alternative 6 is the alternative preferred by the responsible official.

Reviewers should provide the Forest Service with their comments during the review period of the draft environmental impact statement. This will enable the Forest Service to analyze and respond to the comments at one time and to use information acquired in the preparation of the final environmental impact statement, thus avoiding undue delay in the decision making process. Reviewers have an obligation to structure their participation in the National Environmental Policy Act process so that it is meaningful and alerts the agency to the reviewers' position and contentions. *Vermont Yankee Nuclear Power Corp. v. NRDC*, 435 U.S. 519, 553 (1978). Environmental objections that could have been raised at the draft stage may be waived if not raised until after completion of the final environmental impact statement. *City of Angoon v. Hodel* (9th Circuit, 1986) and *Wisconsin Heritages, Inc. v. Harris*, 490 F. Supp. 1334, 1338 (E.D. Wis. 1980). Comments on the draft environmental impact statement should be specific and should address the adequacy of the statement and the merits of the alternatives discussed (40 CFR 1503.3).

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Date comments must be received: November 26, 2008

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Summary

The Tahoe National Forest Motorized Travel Management Draft Environmental Impact Statement (DEIS) assesses the potential environmental impacts associated with seven Public Motor Vehicle Travel Management alternatives, including a “no action” alternative.

Six action alternatives (Alternatives 2 through 7) and a no action alternative (Alternative 1) are analyzed in detail in this DEIS. The no action alternative serves as a baseline for comparison among the alternatives, and is required by the implementing regulations of the National Environmental Policy Act (NEPA).

The “planning area” for the alternatives includes National Forest System lands on the Tahoe National Forest. It does not include any private, state, or other federal lands.

Each alternative assumes that other adjacent federal lands, such as those administered by the Bureau of Land Management will be managed according to existing management plans and applicable federal laws. Each alternative also assumes that private lands will meet applicable state and federal land use regulations.

Background

Over the past few decades, the availability and capability of motorized vehicles, particularly off-highway vehicles (OHVs) and sport utility vehicles (SUVs) has increased tremendously. Nationally, the number of OHV users has climbed sevenfold in the past 30 years, from approximately 5 million in 1972 to 36 million in 2000. California is experiencing the highest level of OHV use of any state in the Nation. There were 786,914 ATVs and OHV motorcycles registered in California in 2004, up 330 percent since 1980. Annual sales of ATVs and OHV motorcycles in California were the highest in the U.S. for the last 5 years. Four-wheel drive vehicle sales in California also increased 1,500 percent to 3,046,866 from 1989 to 2002.

Unmanaged OHV use on national forest lands has resulted in unplanned roads and trails, erosion, watershed and habitat degradation, and impacts to cultural resource sites. Compaction and erosion are the primary effects of OHV use on soils. Riparian areas and aquatic dependent species are particularly vulnerable to adverse impacts from OHV use. Unmanaged recreation, including impacts from OHV’s, is one of “Four Key Threats Facing the Nation’s Forests and Grasslands.” (USDA Forest Service, June 2004).

On August 11, 2003, the Pacific Southwest Region of the Forest Service entered into a Memorandum of Intent (MOI) with the California Off-Highway Motor Vehicle Recreation Commission and the Off-Highway Motor Vehicle Recreation Division of the California Department of Parks and Recreation. The MOI set in motion a region-wide effort to “designate OHV roads, trails, and any specifically defined open areas for motorized wheeled vehicles on maps of the 19 National Forests in California by 2007.”

On November 9, 2005, the Forest Service published final travel management regulations in the Federal Register (FR Vol. 70, No. 216-Nov. 9, 2005, pp 68264-68291). 36 CFR 212, Subpart B, of the final Travel Management Rule requires designation of those roads, trails, and areas that are open to motor vehicle use on national forest lands. Roads and trails designated for motorized use must be included in the National Forest Transportation System (NFTS). Designations are made by class of vehicle and, where

appropriate, by time of year. Part 261 – Prohibitions, Subpart A (36 CFR 261.13) of the final rule prohibits the use of motor vehicles off designated roads, trails, and areas, as well as use of motor vehicles on roads and trails and in areas that is not consistent with the designations.

On some National Forest System (NFS) lands, long managed as open to cross-country motor vehicle travel, repeated use has resulted in unplanned motorized trails un-authorized for motorized use. These trails generally developed without environmental analysis or public involvement, and do not have the same status as roads and trails included in the NFTS. Nevertheless, some existing motorized trails un-authorized for motorized use are well-sited, provide excellent opportunities for outdoor recreation by motorized and non-motorized users, and would enhance the NFTS. Other motorized trails un-authorized for motorized use are poorly located and cause unacceptable impacts. Only NFS roads and NFS trails can be designated for motorized vehicle use. In order for a motorized trail un-authorized for motorized use to be designated, it must first be added to the forest transportation system.

In 2005, the Tahoe National Forest (TNF) completed an inventory of motorized trails un-authorized for motorized use on NFS lands as described in the MOI and identified approximately 1,400 miles of motorized trails un-authorized for motorized use. The TNF then used an interdisciplinary process to conduct travel analysis that included working with the public to identify proposals for changes to the existing TNF transportation system. Roads, trails and areas that are currently part of the TNF transportation system and open to motorized vehicle travel will remain designated for such use except as described below under the Proposed Action. This proposal makes needed changes (vehicle restrictions, additional motorized trails and areas, etc.) to the Tahoe National Forest NFS roads, NFS trails and areas on NFS lands in accordance with the Travel Management Rule (36 CFR Part 212.50-57).

In accordance with Subpart B of the Travel Management Rule, following a decision on this proposal, the TNF will publish a Motor Vehicle Use Map (MVUM) identifying all TNF NFTS roads, trails and areas that are designated for motor vehicle use. The MVUM shall specify the classes of vehicles and, if appropriate, the times of year for which use is designated. Existing motorized trails un-authorized for motorized use not included in this proposal are not precluded from future consideration for addition to the NFTS and inclusion in a MVUM. Future decisions associated with changes to the MVUM and the NFTS may trigger the need for additional environmental analysis, public involvement, and documentation.

Travel Management on the Tahoe National Forest_____

This proposal is just one project among many in the TNF's long term goal of managing the transportation system in a sustainable and cost effective manner. Previous TNF administrative decisions have substantially reduced the number of miles of Forest Service System roads available for motorized use and restricted the season of use. These previous decisions have resulted in prohibiting motorized use on 500 miles, restricting the season of use on 150 miles, and decommissioning 100 miles. The net result is that the existing National Forest transportation system on which motorized vehicle use is allowed year-round has been reduced by 25 percent. This has been accomplished through ongoing management of the Forest's transportation system through forest planning, vegetation management projects, watershed restoration projects, fuel treatment projects, trail construction projects, trail management decisions, OHV Management Plans, landscape analysis, watershed analysis and the Roads Analysis Process (RAP).

Purpose and Need

The following needs have been identified for this proposal:

1. **There is a need for regulation of unmanaged motorized vehicle travel by the public.** The proliferation of unplanned, non-sustainable roads, trails and areas adversely impacts the environment. The Travel Management Rule, Subpart B, is intended to prevent resource damage caused by unmanaged motorized travel by the public. The Travel Management Rule, 36 CFR Part 212, Subpart B, provides policy the designation of NFS roads, trails and areas, and the prohibition of cross-country travel. In accordance with national direction, implementation of Subpart B of the Travel Management Rule for the Tahoe National Forest is scheduled for completion by approximately September 2009.
2. **There is a need for limited changes to the TNF transportation system to:**
 - a. Provide motorized access to existing dispersed recreation opportunities (camping, hunting, fishing, hiking, horseback riding, etc.) There is a need to maintain motor vehicle access to dispersed recreation activities that are known to have been historically accessed by motor vehicles. A substantial portion of known dispersed recreation activities (camping, fishing, hiking, horseback riding, hunting, etc.) are not located directly adjacent to an existing NFS road or NFS motorized trail. Some dispersed recreation activities depend on foot or horseback access, and some depend on motor vehicle access. Those activities accessed by motor vehicles consist of short spur routes that have been created and maintained primarily by the passage of motorized vehicles. Many such ‘user-created’ (un-authorized) routes are not currently part of the National Forest Transportation System (NFTS). Without adding them to the NFTS, the regulatory changes noted above would make continued use of such routes illegal through the prohibition of cross country travel.
 - b. Provide a diversity of motorized recreation opportunities (4X4 Vehicles, motorcycles, ATVs, passenger vehicles, etc.) It is Forest Service policy to provide a diversity of road and trail opportunities for experiencing a variety of environments and modes of travel consistent with the National Forest recreation role and land capability (FSM 2353.03(2)). Without additions to the NFTS, implementation of Subpart B of the Travel Management Rule would severely limit motorized recreation opportunities relative to current levels. In meeting these needs, any changes to the NFS roads, motorized trails and areas should also achieve the following purposes:
 - Avoid impacts to cultural resources.
 - Provide for public safety.
 - Provide for a diversity of recreational opportunities.
 - Provide access to public and private lands.
 - Administer and maintain roads, trails and areas based on availability of resources.
 - Minimize damage to soil, vegetation and other forest resources.
 - Avoid harassment of wildlife and significant disruption of wildlife habitat.
 - Minimize conflicts between motor vehicles and existing or proposed recreational uses of NFS lands.

- Minimize conflicts among different classes of motor vehicle uses of NFS lands or neighboring federal lands.
- Assure compatibility of motor vehicle use with existing conditions in populated areas, taking into account sound, emissions, etc.
- Maintain valid existing rights of use and access (rights-of-way).
- Constrain the proposal to that which is within the capability of the forest to analyze given:
 - 1) The national schedule for regions to publish their Forest Motor Vehicle Use Map. For the Tahoe National Forest the Publication deadline is approximately September 2009.
 - 2) Available funding (road and trail management budgets).
 - 3) Available resources (resource data and staff time).

Proposed Action as Described in the Notice of Intent _____

1. **Cross Country Travel:** Prohibit motorized vehicle travel off designated NFS roads, NFS trails and areas by the public, except as allowed by permit or other authorization.
2. **Seasonal Restrictions:** Continue only those seasonal restrictions as specified in the 1990 Tahoe Forest Plan and contained in existing Forest Orders.
3. **Class of Vehicles:** Allow non-street legal vehicle access to approximately 3.4 miles of an existing NFS road where such use is currently prohibited. Motor vehicle operation on National Forest System roads is subject to both federal and state laws and regulations. National Forest System (NFS) roads maintained by the TNF to accommodate standard four wheel passenger cars are subject to the federal Highway Safety Act and are considered highways for purposes of National Forest Transportation System Management and the California Vehicle Code (CVC) Division 16.5. These roads are currently open to highway legal vehicles only. NFS roads maintained for high clearance vehicles are generally not suitable for standard four wheel passenger vehicles. As such, they are not subject to the Federal Highway Safety Act, are considered roughly graded roads for purposes of the CVC Division 16.5, and are currently open to all vehicle classes including off highway vehicles (OHV's).
4. **Roads Trails and Areas Added Existing National Forest System:** The TNF currently manages and maintains approximately 2,640 miles of NFS roads, 760 miles of NFS motorized trails, and one open area. Based on the stated purpose and need for action, and as a result of the recent travel analysis process, the TNF proposes to add 45 miles to its NFS motorized trails, bringing the total National Forest system of motorized trails to approximately 805 miles.

The Proposed action as described in the Notice of Intent is shown in more detail throughout this document as Alternative 7.

Decision to be Made _____

The responsible official will decide whether to adopt and implement the proposed action, an alternative to the proposed action, or take no action to make changes to the existing Tahoe National Forest

Transportation System and prohibit cross country motorized vehicle travel by the public off the designated system.

This proposal does not revisit previous administrative decisions that resulted in the current NFTS. This proposal is narrowly focused on implementing 36 CFR 212 Subpart B of the Travel Management Rule. Previous administrative decisions concerning road construction, road reconstruction, trail construction, and land suitability for motorized use on the existing NFTS are outside of the scope of this proposal.

Responsible Official _____

The Forest Supervisor for the Tahoe National Forest will be the deciding official. The Forest Supervisor will sign the Record of Decision.

Public Participation _____

The Interdisciplinary Team relied on public involvement to ensure that a full range of alternatives, representing a broad array of perspectives, would be analyzed in this DEIS. Public involvement occurred during three key periods: first, during the public collaboration process that began in 2006; second, during the 30-day public scoping period for the Notice of Intent (NOI); and third, during meetings with public groups to refine alternatives they proposed during scoping.

During the summer, 2006, a variety of trail users, including motorized and non-motorized users, provided suggestions on designing a process that would be meaningful to public participants to help identify a starting point from which to build the “Proposed Action.” Approximately 20 individuals assisted with this effort. In the fall, 2006, using the suggestions from the public on how to structure the public involvement, a series of six workshops were initiated to identify which routes and areas should become part of the “Proposed Action,” the type of use that each would have, and locations to be considered for dispersed recreation use. The concept of “mixed use” was also introduced during these meetings. At the first session of the two-part series, workshops were held in Nevada City (Oct. 19), Truckee (Oct. 23) and Foresthill (Oct. 26). At these meetings, participants broke into three groups to review three different geographical areas and to discuss which of the routes should or should not become part of the proposal. Some of the groups continued to meet and/or to make field visits to review conditions on the ground. Later in the fall, at the second set of workshops, the groups presented their information back to the entire group at sessions in Grass Valley (Nov. 15), Truckee (Dec. 5) and Foresthill (Dec. 7). Groups shared their ideas and their various concerns with other group proposals. Roughly 300 people participated in these workshops. In early 2007, an e-mail update was issued sharing information on the meetings and the outcome. The Forest Service Interdisciplinary team took this information and developed the Proposed Action for the Notice of Intent.

30-day public scoping period for the Notice of Intent

In April, 2007, the Forest Service completed the “Proposed Action and Notice of Intent to Prepare an Environmental Impact Statement” based on comments from the meetings held in the fall. The public comment period began on April 11, 2007, and ended May 14, 2007. Presentations to a variety of groups,

phone calls, news releases, website postings and emails were used to alert the public of the opportunity to comment on the Proposed Action. Public meetings were held in Truckee (April 18), in Foresthill (April 24) and in Grass Valley (April 26) to explain the Proposed Action. Over 3,500 comments were received via e-mail and regular mail; with most being e-mail form letters.

Continued Public Input

The infrastructure of a national forest will always have room for improvement and the TNF welcomes suggestions for improving the current NFTS and managing the forest environment. Such suggestions are considered within the context of the overall mission of the TNF and will be considered as availability of staff and funding allows. Scoping for this project resulted in many suggestions for improving the NFTS through reconstruction, decommissioning, NFS road and trail closures, restoration projects, etc. These ideas and suggestions from the public may be considered in the future.

Issues

This section presents the significant issues related to the proposed action in an Issue/Discussion format. Issue statements have been formulated based on extensive public input and comment. The discussions that follow reveal the breadth of perspectives from which the issue was derived. They reflect positions and values on the nature of the problems being addressed, possible alternatives to consider, and environmental consequences that may result from a course of action.

Four significant issues were identified as follows:

- Issue:** The proposed action unreasonably restricts motorized recreation use by prohibiting cross country travel. The addition of only 54 miles of motorized trails to the NFTS provides insufficient public access to TNF lands and unfairly limits motorized recreation.

Discussion: Concerns were raised that restricting cross country travel across the entire forest severely impacts motorized recreation opportunities and unfairly restricts access for hunting, fishing camping and a host of other outdoor activities. The route inventory identified 1,400 miles of existing motorized trails un-authorized for motorized use: the proposed action only retains 54 miles of these. This is insufficient to maintain a quality motorized recreation experience on the TNF.
- Issue:** The proposed addition of motorized trails to inventoried roadless areas will adversely affect roadless characteristics of these areas including opportunities for solitude, undisturbed landscapes and primitive, non-motorized recreation.

Discussion: Concerns were raised that inventoried roadless areas on the TNF are already impacted by NFS roads and trails that detract from their roadless character. The proposed action only compounds this problem by adding 6 miles of additional motorized trails in these pristine areas. Opportunities for solitude and primitive non-motorized experiences will be ruined by the noise and disturbance of OHV's. Motorized trails change the character of these otherwise undisturbed landscapes.
- Issue:** Many of the motorized trails proposed for addition to the NFTS are poorly located and will cause adverse impacts to plants, wildlife, water quality, soils and other natural resources.

Discussion: Many commenters expressed concerns about impacts to a variety of natural resources, citing stream crossings, habitat fragmentation, wildlife disturbance, sedimentation, cultural resources, invasive weeds and other resources that would be impacted by motorized use on roads and trails.

4. **Issue:** The NFTS is already too large to provide adequate maintenance and administration. Current maintenance backlogs should be addressed before proposing the addition of new motorized trails to an already overburdened system.

Discussion: Concerns were expressed about how the types of motorized use allowed on roads, trails, and areas would impact the need for maintenance and administration. It was expressed that some types of use, specifically motorcycles, ATVs, and 4-wheel drives, result in higher maintenance costs due to resource damage caused by such uses. In addition, commenters felt that increasing the opportunities for such uses by adding motorized trails to the NFTS and designating “open areas” for motorized use would result in an increased need for Forest Service administration of these trails and areas to prevent un-authorized uses, resolve user conflicts, and provide for public safety. It was also expressed that certain mixes of use, if allowed on in the same area, would increase the need for maintenance and administration of these areas.

The Alternatives

This section describes each of the seven alternatives considered in detail. Each alternative is described in four parts:

1. **Prohibition of cross country travel:** There are currently 717,900 acres on the National Forest where cross country is not prohibited. All of the action alternatives would prohibit cross-country travel except in smaller “open” areas that would be specifically designated for such use. Open areas are described under “**Motorized trail additions to the National Forest Transportation System and designation of “Open Areas.”**” Within these 717,900 acres where cross country is not prohibited, there are approximately 1,400 miles of motorized trails that are un-authorized for motorized use. These motorized trails that are un-authorized for motorized use fall into one of three categories:
 - **National Forest Transportation System (NFTS) Maintenance Level 1 roads:** These are intermittent service roads which are closed to vehicular traffic. However, the public has continued to use these roads as motorized trails without authorization.
 - **Temporary Roads:** These are roads or trails necessary for emergency operations or authorized by contract, permit, lease, or other written authorization that is not a forest road or trail and that is not included in a forest transportation atlas. Most of these roads were constructed through vegetation management projects and were not intended for long term motorized use by the public. The public has continued to use these roads as motorized trails without authorization.
 - **User created trails:** These are trails that are not a forest road or trail or a temporary road or trail and that is not included in a forest transportation atlas. The public has created these trails

through cross country travel and continues to use them as motorized trails without authorization.

2. **Changes in seasonal restrictions on National Forest Transportation System (NFTS) roads, NFTS motorized trails and designated “Open Areas”:** The action alternatives vary in terms of which roads, trails and areas would have motorized travel prohibited during specified times of year. These seasonal restrictions fall into one of the following categories:
 - **Forest Plan Deer Winter Range:** Deer winter range seasonal restrictions were specified in the Forest Plan to protect deer from human disturbance while on their lower elevation winter range. Winter range is important to deer since the amount of this habitat has been reduced over time due to increased urban growth.
 - **Forest Plan Deer Holding Areas:** Deer holding area seasonal restrictions were specified in the Forest Plan. Deer holding areas are those locations where they gather in the fall to forage in preparation for migration to their winter range. Deer are more susceptible to human disturbance during this time period.
 - **Wet Weather:** Wet weather seasonal restrictions are specified in some of the alternatives to minimize erosion and protect water quality.
 - **Existing Forest Orders:** A variety of Forest Orders have been put in place to provide site specific resource protection.

Table S-1 displays the dates for each of these categories seasonal restrictions.

Table S-1. Dates for seasonal restrictions by resource category

Seasonal Restriction Category	Open Dates
Forest Plan Deer Winter Range	May 1 to November 1
Forest Plan Deer Holding Areas	December 31 to September 15
Wet Weather (Except Burlington Ridge and Greenhorn Area)	May 1 to Dec 31
Wet Weather on Burlington Ridge and Greenhorn Area	April 1 to Dec 31
Forest Orders	Dates vary

3. **Changes to class of vehicles allowed on existing National Forest Transportation roads:** Each alternative includes a list of any proposed changes to the class of vehicles allowed on existing National Forest Transportation System (NFTS) roads. Motor vehicle operation on NFTS roads is subject to both Federal and State laws and regulations. NFTS roads maintained by the Tahoe National Forest to accommodate standard passenger cars are subject to the Federal Highway Safety Act and are considered highways for purposes of National Forest transportation management and the California Vehicle Code (CVC) Division 16.5. These roads are currently **“Open to Highway Legal Vehicles Only.”** NFTS roads maintained for high clearance vehicles are generally not suitable for standard four wheel passenger vehicles. As such, they are not subject to the Federal Highway Safety Act, are considered roughly graded roads for purposes of the CVC Division 16.5, and are generally **“Open to All Vehicles,”** including off highway vehicles (OHVs).

In general, National Forest System hardened surface roads (i.e. paved and chip sealed) would be “Open to Highway Legal Vehicles Only,” while native surface (i.e. dirt) roads would be “Open to All Vehicles.” Some of the alternatives would allow specific hardened surface roads to be “Open to All Vehicles,” based on meeting one of two conditions, described in the following two paragraphs.

- **Method 1:** The first method would be to change the vehicle class from “*Highway Legal Vehicles Only*” to “*Open to All Vehicles*” by maintaining the road for high clearance vehicles until it meets high clearance conditions (ungraded, rough surface, pot holes, “wash boarding,” etc) which generally have a lower crash risk due to reduced driving speeds. Mixed-use (highway legal and non-highway vehicles allowed on same road) would not be allowed until the road condition had reached (due to road wear, wet weather, reduced maintenance, etc.) a condition suitable for high clearance vehicles only. Based on observations of road wear and maintenance needs on similar roads and soil types, it is estimated that with changed maintenance levels, roads become suitable for only high clearance vehicles in about 3 to 4 years. At that time, the road would be designated for mixed use (in other words, “*Open To All Vehicles*”) on the Forest Motor Vehicle Use Map and the road would be signed accordingly. Prior to designation, a qualified road engineer would assess the actual road condition and determine whether high-clearance vehicle conditions have developed sufficiently to safely allow mixed use. Although some time would elapse between a decision and the actual on-the-ground designation of such routes for mixed use, each alternative identifies these routes as “*Open to All Vehicles*” for analysis purposes in this DEIS.
 - **Method 2:** The second method is to simply change the vehicle class from “*Highway Legal Vehicles Only*” to “*Open to All Vehicles*” where a qualified road engineer has assessed the current road condition and determined that mixed use of the road would have low safety risks. Such routes have been identified in specific alternatives as “*Open to All Vehicles*.”
- 4. Motorized trail additions to the National Forest Transportation System and designation of “Open Areas”:** Each alternative includes list of motorized trails to be added to the National Forest Transportation System (NFTS) and lands to be designated as “Open Areas” for OHV use. This list is displayed in Table 2-4 at the end of Chapter 2. Each of these motorized trails and “Open Areas” are described in terms of the class of vehicle and season of use to be authorized. Each motorized trail is identified by a unique Route ID and open areas are identified by name and location. Mitigation measures (other than routine maintenance such as brushing, signing, cleaning, clearing debris, and so forth) and monitoring requirements for each motorized trail and “Open Area” is site-specifically addressed in Appendix A (Road Cards).

Alternative 1: No Action

The No Action Alternative is required by NEPA and provides a baseline for comparing the other alternatives. Under the No Action alternative, existing approaches for managing the National Forest Transportation System (NFTS) on the Tahoe National Forest would continue. No changes would be made to the current National Forest Transportation System (NFTS) and no cross country travel prohibition

would be put into place. The provisions of the Travel Management Rule would not be implemented, and no Motor Vehicle Use Map would be produced. Motor vehicle travel by the public would not be limited to designated routes. Motorized trails un-authorized for motorized use would continue to have no status or authorization as NFTS facilities.

1. **Prohibition of cross country travel:** Motorized vehicle travel off the designated National Forest Transportation System (NFTS) roads, NFTS motorized trails and designated “Open Areas” by the public would continue, except as prohibited by Forest Order. Cross country travel is currently not prohibited on 717,900 acres. One existing designated “Open Area” less than 100 acres in size would continue open at Prosser Pits. The following summarizes the amount of cross country travel in this alternative.

Existing Cross Country Travel		Alternative 1 Cross Country Travel	
Un-authorized Use	717,900 acres	Un-authorized Use	717,900 acres
Prohibited by Forest Order	86,500 acres	Prohibited by Forest Order	86,500 acres
Designated as “Open Areas”	> 100 acres	Designated as “Open Areas”	> 100 acres

2. **Changes in seasonal restrictions on National Forest Transportation System (NFTS) roads, NFTS motorized trails and designated “Open Areas”:** Only those seasonal restrictions as specified in the 1990 Tahoe Forest Plan and contained in existing Forest Orders would be continued. The following is a mileage summary of the existing seasonal restrictions by season of use that would be continued in this alternative. Seasonal restrictions for specific roads are identified on the Alternative 1 Map in the map packet.

Existing Seasonal Restrictions		Alternative 1 Changes in Seasonal Restrictions	
Forest Plan deer winter range seasonal closures Forest Plan deer holding area seasonal closures Existing Forest Orders		None	
Existing Mileage by Season of Use		Alternative 1 Mileage by Season of Use	
Open May 1 to Dec. 31	30 miles	Open May 1 to Dec. 31	30 miles
Open May 1 to Nov. 1	112 miles	Open May 1 to Nov. 1	112 miles
Open Jan. 1 Sep. 15	6 miles	Open Jan. 1 Sep. 15	6 miles
Open all year	2,716 miles	Open all year	2,716 miles

3. **Changes to class of vehicles allowed on existing National Forest Transportation System (NFTS) roads:** No changes to class of vehicles are proposed under Alternative 1. National Forest Transportation System hardened surface roads (i.e. paved and chip sealed) would continue to be “Open to Highway Legal Vehicles Only,” while native surface (i.e. dirt) roads would continue to be “Open to All Vehicles.”

Existing Class of Vehicles Allowed on NFTS Roads		Alternative 1 Changes to Class of Vehicles Allowed on NFTS Roads	
Harden surface open to "Highway Legal Vehicles Only"		None	
Native surface (dirt) open to "All Vehicles"			
Existing Mileage by Class of Vehicles		Alternative 1 Mileage by Class of Vehicle	
Open to "Highway Legal Vehicles Only"	632.8 miles	Open to "Highway Legal Vehicles Only"	632.8 miles
Open to "All Vehicles"	1,896.2 miles	Open to "All Vehicles"	1,896.2 miles

- Motorized trail additions to the National Forest Transportation System and designation of "Open Areas":** No motorized trails would be added to the National Forest Transportation System (NFTS). No additional lands would be designated as "Open Areas."

Alternative 2: Motorized Recreation and Access Opportunities

Alternative 2 responds to the issue raised by the public during scoping of insufficient public motorized access for dispersed recreation. It also responds public concerns about reduced motorized recreation opportunities associated with the proposed action. During scoping, the Tahoe National Forest received numerous site specific suggestions for additional motorized trails and designated "Open Areas" that would improve public access and enhance motorized recreation opportunities. All of the motorized trails site specifically requested by the public was added to the Proposed Action in this alternative as motorized trail additions to the National Forest Transportation System provided they were consistent with law, regulation and policy. In addition, all site specific recommendations for open areas are officially designated as "Open Areas" in this alternative provided they were consistent with law, regulation and policy.

- Prohibition of cross country travel:** This alternative would prohibit motorized vehicle travel off the designated National Forest Transportation System (NFTS) roads, NFTS trails and designated "Open Areas" by the public except as allowed by permit or other authorization. Cross country travel would be prohibited on 801,700 acres. 2,700 acres would be designated as "Open Areas" at Prosser Pits, Eureka Diggings, Greenhorn Area, and Boca, Prosser and Stampede Reservoirs. The following summarizes the amount of cross country travel in this alternative.

Existing Cross Country Travel		Alternative 2 Cross Country Travel	
Un-authorized Use	717,900 acres	Un-authorized Use	0 acres
Prohibited by Forest Order	86,500 acres	Prohibited by Forest Order	801,700 acres
Designated as "Open Areas"	> 100 acres	Designated as "Open Areas"	2,700 acres

- Changes in seasonal restrictions on National Forest Transportation System (NFTS) roads, NFTS motorized trails and designated "Open Areas":** Seasonal restrictions would emphasize motorized recreation opportunities. The Tahoe National Forest Land and Resource Management Plan (LRMP) would be amended to remove the November 1 to May 1 seasonal closure in the Sugar Pine area (Management Area 84 Humbug Sailor) on key winter deer range to improve motorized recreation opportunities. The remaining seasonal restrictions specified in the Tahoe

National Forest LRMP and contained in existing Forest Orders would be continued. The following is a mileage summary of the resulting seasonal restrictions by season of use in this alternative. Seasonal restrictions for specific roads are identified on the Alternative 2 Map in the map packet.

Existing Seasonal Restrictions		Alternative 2 Changes in Seasonal Restrictions	
Forest Plan deer winter range seasonal closures Forest Plan deer holding area seasonal closures Existing Forest Orders		Forest Plan deer winter range seasonal closures removed in Sugar Pine area (Management Area 84 – Humbug Sailor)	
Existing Mileage by Season of Use		Alternative 2 Mileage by Season of Use	
Open May 1 to Dec. 31	30 miles	Open May 1 to Dec. 31	30 miles
Open May 1 to Nov. 1	112 miles	Open May 1 to Nov. 1	113 miles
Open Jan. 1 Sep. 15	6 miles	Open Jan. 1 Sep. 15	6 miles
Open all year	2,716 miles	Open all year	2,787 miles

- Changes to class of vehicles allowed on existing National Forest Transportation roads:** This alternative includes changes in class of vehicles allowed on existing hardened surface National Forest Transportation System (NFTS) roads from *“Highway Legal Vehicles Only”* to *“All Vehicles”* on all roads where there was an identified public need. The following is a mileage summary of the changes to class of vehicle proposed. Specific roads with a change in class of vehicles are also displayed on the Alternative 2 Map in the map packet.

Existing Class of Vehicles Allowed on NFTS Roads		Alternative 2 Changes to Class of Vehicles Allowed on NFTS Roads	
Harden surface open to “Highway Legal Vehicles Only” Native surface (dirt) open to “All Vehicles”		All hardened surface roads changed to open to “All Vehicles” where a public need was identified	
Existing Mileage by Class of Vehicles		Alternative 2 Mileage by Class of Vehicle	
Open to “Highway Legal Vehicles Only”	632.8 miles	Open to “Highway Legal Vehicles Only”	151.6 miles
Open to “All Vehicles”	1,896.2 miles	Open to “All Vehicles”	2,377.4 miles

- Motorized trail additions to the National Forest Transportation System and designation of “Open Areas”:** All motorized trails site specifically requested by the public were added to the Proposed Action as motorized trail additions to the National Forest Transportation System provided they were consistent with law, regulation and policy. In addition, all site specific recommendations for open areas are officially designated as “Open Areas” in this alternative provided they were consistent with law, regulation and policy. The following are some of the criteria used in determining which motorized trails would be added to the National Forest Transportation System and which lands would be designated as “Open Areas.”

Category	Criteria for adding motorized trails to the National Forest Transportation System (NFTS) and designating lands as “Open Areas” in Alternative 2
Public Need	Recommended for addition from public collaboration meetings prior to NOI. Site specifically recommended for addition during scoping on Proposed Action.
Soil/Water	No serious adverse impacts to soil and water resources which could not be mitigated at this time.
Lands	If trail crosses private land, landowner has not expressed opposition to granting public access.
Heritage	No adverse heritage impacts which could not be mitigated except for sites at Eureka Diggings and Boca, Prosser and Stampede Reservoirs.
Roadless Areas	Not used as a criteria.
Wild & Scenic Rivers	Maintains Wild & Scenic River outstanding remarkable values.
California Spotted Owls	Not used as a criteria.
Northern Goshawk	Not used as a criteria.
Lahontan Cutthroat Trout	No adverse effects Lahontan Cutthroat Trout
Recreation	Maximizes motorized recreation opportunities. Consistent with Forest Plan land allocations. Not already a NFTS non-motorized trail. Does not require new trail construction or significant re-routing of existing trail.
Transportation	Not a previously decommissioned NFTS road. Not previously closed by Forest Order.
Safety	No unacceptable public safety risks.

The specific motorized trails and “Open Areas” are displayed on the Alternative 2 Map in the map packet. The motorized trails added to the NFTS providing access to dispersed sites average only 160 feet in length and therefore are not shown on the alternative maps. The following is a mileage summary of the motorized trails to be added to the NFTS and an acreage summary of the lands to be designated as “Open Areas.”

Alternative 2 Motorized Trails Added to the National Forest Transportation System (NFTS) and Lands Designated as “Open Areas”	
Trails open to high clearance trail vehicles	36.3 miles
Trails open to ATVs & Motorcycles	2.9 miles
Trails open to motorcycles	27.1 miles
Motorized trails providing access to dispersed sites (Class of vehicle is the same as the adjacent road or trail)	6.2 miles
Total	72.5 miles
Lands designated as “Open Areas”	Eureka Diggings (27 Acres) Greenhorn Area (60 acres)
Reservoirs designated as “Open Areas” below high water line for shoreline access on dry soils	Prosser, Boca & Stampede (2,589 acres)

Alternative 3: Cross-County Travel Prohibition Only – No Changes to the Existing National Forest Transportation System

Alternative 3 responds to the issues of transportation system management costs, potential adverse effects of motorized roads and trails on the characteristics of inventoried roadless areas, and potential adverse impacts associated with motorized roads and trails on water, soils, sensitive plants, wildlife, and cultural resources. As such, this alternative would prohibit cross country travel and would not add any motorized trails un-authorized for motorized use to the National Forest Transportation System (NFTS). In addition, none of the un-authorized open areas would be designated for motorized use.

1. **Prohibition of cross country travel:** This alternative would prohibit motorized vehicle travel off the designated National Forest Transportation System (NFTS) roads, NFTS trails and designated “Open Areas” by the public except as allowed by permit or other authorization. Cross country travel would be prohibited on 804,400 acres. Less than 100 acres would continue to be designated as an “Open Area” at Prosser Pits. The following summarizes the acreages of cross country travel in this alternative.

Existing Cross Country Travel		Alternative 3 Cross Country Travel	
Un-authorized Use	717,900 acres	Un-authorized Use	0 acres
Prohibited by Forest Order	86,500 acres	Prohibited by Forest Order	804,400 acres
Designated as “Open Areas”	> 100 acres	Designated as “Open Areas”	> 100 acres

2. **Changes in seasonal restrictions on National Forest Transportation System (NFTS) roads, NFTS motorized trails and designated “Open Areas”:** Only those seasonal restrictions as specified in the TNF LRMP and contained in existing Forest Orders would be continued. The following is a mileage summary of the existing seasonal restrictions by season of use that would be continued in this alternative. Seasonal restrictions for specific roads are identified on the Alternative 3 Map in the map packet.

Existing Seasonal Restrictions		Alternative 3 Changes in Seasonal Restrictions	
Forest Plan deer winter range seasonal closures Forest Plan deer holding area seasonal closures Existing Forest Orders		None	
Existing Mileage by Season of Use		Alternative 3 Mileage by Season of Use	
Open May 1 to Dec. 31	30 miles	Open May 1 to Dec. 31	30 miles
Open May 1 to Nov. 1	112 miles	Open May 1 to Nov. 1	112 miles
Open Jan. 1 Sep. 15	6 miles	Open Jan. 1 Sep. 15	6 miles
Open all year	2,716 miles	Open all year	2,716 miles

3. **Changes to class of vehicles allowed on existing National Forest Transportation roads:** No changes to class of vehicles are proposed under Alternative 3. National Forest Transportation System hardened surface roads (i.e. paved and chip sealed) would continue to be “*Open to Highway Legal Vehicles Only,*” while native surface (i.e. dirt) roads would continue to be “*Open to All Vehicles.*”

Existing Class of Vehicles Allowed on NFTS Roads		Alternative 3 Changes to Class of Vehicles Allowed on NFTS Roads	
Harden surface open to “Highway Legal Vehicles Only” Native surface (dirt) open to “All Vehicles”		None	
Existing Mileage by Class of Vehicles		Alternative 3 Mileage by Class of Vehicle	
Open to “Highway Legal Vehicles Only”	633 miles	Open to “Highway Legal Vehicles Only”	633 miles
Open to “All Vehicles”	1,896 miles	Open to “All Vehicles”	1,896 miles

4. **Motorized trail additions to the National Forest Transportation System and designation of “Open Areas”:** No roads, trails or areas would be added to the existing NFTS.

Alternative 4: Proposed Action as Modified by Alternative Submitted by an Environmental Group Coalition

Alternative 4 is based on the Proposed Action contained in the Notice of Intent as modified by an alternative submitted by an environmental group coalition during scoping. It responds to issues of potential adverse effects of motorized roads and trails on the characteristics of inventoried roadless areas, and potential adverse impacts associated with wheeled motorized roads and trails on water, soils, sensitive plants and wildlife resources.

1. **Prohibition of cross country travel:** This alternative would prohibit motorized vehicle travel off the designated National Forest Transportation System (NFTS) roads, NFTS trails and designated “Open Areas” by the public except as allowed by permit or other authorization. Cross country travel would be prohibited on 804,400 acres. Less than 100 acres would continue to be designated as an “Open Area” at Prosser Pits. The following summarizes the acreages of cross country travel in this alternative.

Existing Cross Country Travel		Alternative 4 Cross Country Travel	
Un-authorized Use	717,900 acres	Un-authorized Use	0 acres
Prohibited by Forest Order	86,500 acres	Prohibited by Forest Order	804,400 acres
Designated as “Open Areas”	> 100 acres	Designated as “Open Areas”	> 100 acres

2. **Changes in seasonal restrictions on National Forest Transportation System (NFTS) roads, NFTS motorized trails and designated “Open Areas”:** Seasonal closures specified in the TNF LRMP and contained in existing Forest Orders would be continued. In addition to these existing seasonal closures, wet weather seasonal closures of native surface roads and motorized trails would be added as part of this alternative. These additional wet weather seasonal restrictions are imposed to minimize erosion and protect water quality. Closures could begin earlier or later and end earlier or later than the specified dates, based on forest specialist assessments of field conditions. Any such closures would be handled under a temporary forest order with associated environmental analysis. The following is a mileage summary of the resulting seasonal restrictions

by season of use in this alternative. Seasonal restrictions for specific roads are identified on the Alternative 4 Map in the map packet.

Existing Seasonal Restrictions		Alternative 4 Changes in Seasonal Restrictions	
Forest Plan deer winter range seasonal closures Forest Plan deer holding area seasonal closures Existing Forest Orders		Wet weather seasonal closures added for all native surface roads and motorized trails	
Existing Mileage by Season of Use		Alternative 4 Mileage by Season of Use	
Open Apr. 1 to Dec. 31	0 miles	Open Apr. 1 to Dec. 31	73 miles
Open May 1 to Dec. 31	30 miles	Open May 1 to Dec. 31	2,111 miles
Open May 1 to Nov. 1	112 miles	Open May 1 to Nov. 1	107 miles
Open May 1 to Sep. 15	0	Open May 1 to Sep. 15	6 miles
Open Jan. 1 Sep. 15	6 miles	Open Jan. 1 Sep. 15	0
Open all year	2,716 miles	Open all year	598 miles

3. **Changes to class of vehicles allowed on existing National Forest Transportation System (NFTS) roads:** The Proposed Action in the Notice of Intent included one road being changed from “*Open to Highway Legal Vehicles Only*” to “*Open to All Vehicles.*” No modifications were made to this Proposed Action based on the alternative submitted by the coalition of Environmental Groups. This same road (Faucherie Lake #843-37) is brought forward as proposed change in class of vehicle from “*Open to Highway Legal Vehicles Only*” to “*Open to All Vehicles.*” The following is a mileage summary of the changes to class of vehicle proposed. The specific road with a change in class of vehicle is also displayed on the Alternative 4 Map in the map packet.

Existing Class of Vehicles Allowed on NFTS Roads		Alternative 4 Changes to Class of Vehicles Allowed on NFTS Roads	
Harden surface open to “ <i>Highway Legal Vehicles Only</i> ” Native surface (dirt) open to “ <i>All Vehicles</i> ”		Same as Proposed Action in Notice of Intent, road #843-37 (Faucherie Lake) changed from open to “ <i>Highway Legal Vehicles Only</i> ” to open to “ <i>All Vehicles</i> ”	
Existing Mileage by Class of Vehicles		Alternative 4 Mileage by Class of Vehicle	
Open to “ <i>Highway Legal Vehicles Only</i> ”	632.8 miles	Open to “ <i>Highway Legal Vehicles Only</i> ”	629.4 miles
Open to “ <i>All Vehicles</i> ”	1,896.2 miles	Open to “ <i>All Vehicles</i> ”	1,898.6 miles

4. **Motorized trail additions to the National Forest Transportation System and designation of “Open Areas”:** An alternative was submitted by a coalition of environmental groups during scoping on the Proposed Action as contained in the Notice of Intent. This alternative contained criteria for adding motorized trails to the National Forest Transportation System (NFTS) and designating lands as “Open Areas.” The Forest Service subsequently met with representatives of these environmental groups and refined those criteria. The Proposed Action was then modified based on those refined criteria. The following summarizes the criteria used for adding motorized trails to the National Forest Transportation System (NFTS) and designating lands as “Open Areas” in Alternative 4.

Category	Criteria for adding motorized trails to the National Forest Transportation System (NFTS) and designating lands as “Open Areas” in Alternative 4
Public Need	Recommended for addition from public collaboration meetings prior to NOI. Site specifically recommended for removing from Proposed Action during scoping.
Soil/Water	No serious adverse impacts to soil and water resources which could not be mitigated at this time. No trail gradient greater than 15%
Lands	If trail crosses private land, landowner has not expressed opposition to granting public access.
Heritage	No adverse heritage impacts which could not be mitigated.
Roadless Areas	Not in an Inventoried Roadless Area (IRA) Not in citizen invenotried roadless areas.
Wild & Scenic Rivers	Not in Wild & Scenic River
California Spotted Owls	Not in a California Spotted Owl Protected Activity Center
Northern Goshawk	Not in Northern Goshawk Protected Activity Center
Lahontan Cutthroat Trout	No adverse effects Lahontan Cutthroat Trout
Recreation	Maximizes non-motorized recreation opportunities. Consistent with Forest Plan land allocations. Not already a NFTS non-motorized trail. Does not require new trail construction or signifcant re-routing of existing trail.
Transportation	Not a previously decommissioned NFTS road. Not previously closed by Forest Order.
Safety	No unacceptable public safety risks.

The specific motorized trails and “Open Areas” are displayed on the Alternative 4 Map in the map packet. The motorized trails added to the NFTS providing access to dispersed sites average only 160 feet in length and therefore are not shown on the alternative maps. The following is a mileage summary of the motorized trails to be added to the NFTS and an acreage summary of the lands to be designated as “Open Areas.”

Alternative 4 Motorized Trails Added to the National Forest Transportation System (NFTS) and Lands Designated as “Open Areas”	
Trails open to high clearance trail vehicles	10.0 miles
Trails open to ATVs & Motorcycles	2.9 miles
Trails open to motorcycles	14.1 miles
Motorized trails providing access to dispersed sites (Class of vehicle is the same as the adjacent road or trail)	4.2 miles
Total	31.2 miles
Lands designated as “Open Areas”	None
Reservoirs designated as “Open Areas” below high water line for shoreline access on dry soils	None

Alternative 5: Proposed Action as Modified by Alternative Submitted by Blue Ribbon Coalition

Alternative 5 is based on the Proposed Action contained in the Notice of Intent as modified by an alternative submitted by the Blue Ribbon Coalition during the scoping process. Alternative 5 was developed to address the issue of providing sufficient wheeled motorized public access to TNF lands as well as public concerns about reduced motorized recreation opportunities.

1. **Prohibition of cross country travel:** This alternative would prohibit motorized vehicle travel off the designated National Forest Transportation System (NFTS) roads, NFTS trails and designated “Open Areas” by the public except as allowed by permit or other authorization. Cross country travel would be prohibited on 804,400 acres. Less than 100 acres would continue to be designated as an “Open Area” at Prosser Pits. The following summarizes the acreages of cross country travel in this alternative.

Existing Cross Country Travel		Alternative 5 Cross Country Travel	
Un-authorized Use	717,900 acres	Un-authorized Use	0 acres
Prohibited by Forest Order	86,500 acres	Prohibited by Forest Order	804,400 acres
Designated as “Open Areas”	> 100 acres	Designated as “Open Areas”	> 100 acres

2. **Changes in seasonal restrictions on National Forest Transportation System (NFTS) roads, NFTS motorized trails and designated “Open Areas”:** The TNF LRMP would be amended to remove the seasonal closure (November 1 to May 1) in the Sugar Pine area (Management Area 84 Humbug Sailor) on key winter deer range to improve motorized recreation opportunities. The remaining seasonal restrictions specified in the TNF LRMP and contained in existing Forest Orders would be continued. In addition to these seasonal restrictions, Alternative 5 would include wet weather seasonal closures of native surface roads and trails. These additional wet weather seasonal restrictions are imposed to minimize erosion and protect water quality. Closures could begin earlier or later and end earlier or later than the specified dates based on forest specialist assessments of field conditions. Any such closures would be handled under a temporary forest order with associated environmental analysis. The following is a mileage summary of the resulting seasonal restrictions by season of use in this alternative. Seasonal restrictions for specific roads are identified on the Alternative 5 Map in the map packet.

Existing Seasonal Restrictions		Alternative 5 Changes in Seasonal Restrictions	
Forest Plan deer winter range seasonal closures Forest Plan deer holding area seasonal closures Existing Forest Orders		Forest Plan deer winter range seasonal closures removed in Sugar Pine area Wet weather seasonal closures added for all native surface roads and motorized trails	
Existing Mileage by Season of Use		Alternative 5 Mileage by Season of Use	
Open Apr. 1 to Dec. 31	0 miles	Open Apr. 1 to Dec. 31	83 miles
Open May 1 to Dec. 31	30 miles	Open May 1 to Dec. 31	2,495 miles
Open May 1 to Nov. 1	112 miles	Open May 1 to Nov. 1	120 miles
Open May 1 to Sep. 15	0	Open May 1 to Sep. 15	6 miles
Open Jan. 1 Sep. 15	6 miles	Open Jan. 1 Sep. 15	0
Open all year	2,716 miles	Open all year	443 miles

3. **Changes to class of vehicles allowed on existing National Forest Transportation roads:** This alternative includes changes in class of vehicles allowed on existing hardened surface National Forest Transportation System (NFTS) roads from “Highway Legal Vehicles Only” to “All Vehicles” on all roads where there was an identified public need. The following is a mileage summary of the changes to class of vehicle proposed. Specific roads with a change in class of vehicles are displayed on the Alternative 5 Map in the map packet.

Existing Class of Vehicles Allowed on NFTS Roads		Alternative 5 Changes to Class of Vehicles Allowed on NFTS Roads	
Harden surface open to “Highway Legal Vehicles Only” Native surface (dirt) open to “All Vehicles”		All hardened surface roads changed to open to “All Vehicles” where a public need was identified	
Existing Mileage by Class of Vehicles		Alternative 5 Mileage by Class of Vehicle	
Open to “Highway Legal Vehicles Only”	632.8 miles	Open to “Highway Legal Vehicles Only”	151.6 miles
Open to “All Vehicles”	1,896.2 miles	Open to “All Vehicles”	2,377.4 miles

4. **Motorized trail additions to the National Forest Transportation System and designation of “Open Areas”:** An alternative was submitted by the Blue Ribbon Coalition during scoping on the Proposed Action as contained in the Notice of Intent. This alternative contained criteria for adding motorized trails to the National Forest Transportation System (NFTS) and designating lands as “Open Areas.” The Forest Service subsequently met with representatives of the Blue Ribbon Coalition and refined those criteria. The Proposed Action was then modified based on those refined criteria. The following summarizes the criteria used for adding motorized trails to the National Forest Transportation System (NFTS) and designating lands as “Open Areas” in Alternative 5.

Category	Criteria for adding motorized trails to the National Forest Transportation System (NFTS) and designating lands as “Open Areas” in Alternative 5
Public Need	Recommended for addition from public collaboration meetings prior to NOI. Site specifically recommended for addition during scoping on Proposed Action. Dual designate NFTS Maintenance Level 1 and temporary roads as NFTS motorized trails if; 1) Shown on historic quad maps or 2) Are located in the Cal-Ida, French Meadows, Mosquito Ridge or Boca/Prosser/Stampede Reservoir areas
Soil/Water	No serious adverse impacts to soil and water resources which could not be mitigated at this time.
Lands	If trail crosses private land, landowner has not expressed opposition to granting public access.
Heritage	No adverse heritage impacts which could not be mitigated.
Roadless Areas	Not used as a criteria.
Wild & Scenic Rivers	Maintains Wild & Scenic River outstanding remarkable values.
California Spotted Owls	Not used as a criteria.
Northern Goshawk	Not used as a criteria.
Lahontan Cutthroat Trout	No adverse effects Lahontan Cutthroat Trout
Recreation	Maximizes motorized recreation opportunities. Consistent with Forest Plan land allocations. Not already a NFTS non-motorized trail. Does not require new trail construction or significant re-routing of existing trail.
Transportation	Not a previously decommissioned NFTS road. Not previously closed by Forest Order.
Safety	No unacceptable public safety risks.

The specific motorized trails and “Open Areas” are displayed on the Alternative 5 Map in the map packet. The motorized trails added to the NFTS providing access to dispersed sites average only 160 feet in length and therefore are not shown on the alternative maps. The following is a mileage summary of the motorized trails to be added to the NFTS and an acreage summary of the lands to be designated as “Open Areas.”

Alternative 5 Motorized Trails Added to the National Forest Transportation System (NFTS) and Lands Designated as “Open Areas”	
Trails open to high clearance trail vehicles	238.5 miles
Trails open to ATVs & Motorcycles	11.0 miles
Trails open to motorcycles	27.1 miles
Motorized trails providing access to dispersed sites (Class of vehicle is the same as the adjacent road or trail)	6.2 miles
Total	282.8 miles
Lands designated as “Open Areas”	None
Reservoirs designated as “Open Areas” below high water line for shoreline access on dry soils	None

Alternative 6: Preferred Alternative

Alternative 6 is the preferred alternative. It responds to issues of providing motorized public access and recreation opportunities while minimizing impacts to natural resources. It is designed to provide a diversity of road and trail opportunities for experiencing a variety of environments and modes of travel consistent with the National Forest’s recreation role and land capability. Alternative 6 would provide motorized access to dispersed recreation opportunities (camping, hunting, fishing, hiking, horseback riding, etc.) and a diversity of motorized recreation opportunities (4X4 Vehicles, motorcycles, ATVs, passenger vehicles, and so forth). In meeting these resource objectives, this alternative proposes the minimum transportation system needed for safe and efficient travel by the public and for administration, utilization and protection of NFS lands.

1. **Prohibition of cross country travel:** This alternative would prohibit motorized vehicle travel off the designated National Forest Transportation System (NFTS) roads, NFTS trails and designated “Open Areas” by the public except as allowed by permit or other authorization. Cross country travel would be prohibited on 804,400 acres. Less than 100 acres would continue to be designated as an “Open Area” at Prosser Pits. The following summarizes the acreages of cross country travel in this alternative.

Existing Cross Country Travel		Alternative 6 Cross Country Travel	
Un-authorized Use	717,900 acres	Un-authorized Use	0 acres
Prohibited by Forest Order	86,500 acres	Prohibited by Forest Order	804,400 acres
Designated as “Open Areas”	> 100 acres	Designated as “Open Areas”	> 100 acres

2. **Changes in seasonal restrictions on National Forest Transportation System (NFTS) roads, NFTS motorized trails and designated “Open Areas”:** The TNF LRMP would be amended to remove the seasonal closure (November 1 to May 1) in the Sugar Pine area (Management Area 84 Humbug Sailor) on key winter deer range to improve motorized recreation opportunities. The remaining seasonal restrictions specified in the TNF LRMP and contained in existing Forest Orders would be continued. In addition to these seasonal restrictions, Alternative 6 would add wet weather seasonal closures of native surface roads and trails. These additional wet weather seasonal restrictions are imposed to minimize erosion and protect water quality. Closures could begin earlier or later and end earlier or later than the dates based on resource specialist assessments of field conditions. Any such closures would be handled under a temporary forest order with associated environmental analysis. The following is a mileage summary of the resulting seasonal restrictions by season of use in this alternative. Seasonal restrictions for specific roads are identified on the Alternative 6 Map in the map packet.

Existing Seasonal Restrictions		Alternative 6 Changes in Seasonal Restrictions	
Forest Plan deer winter range seasonal closures Forest Plan deer holding area seasonal closures Existing Forest Orders		Forest Plan deer winter range seasonal closures removed in Sugar Pine area Wet weather seasonal closures added for all native surface roads and motorized trails	
Existing Mileage by Season of Use		Alternative 6 Mileage by Season of Use	
Open Apr. 1 to Dec. 31	0 miles	Open Apr. 1 to Dec. 31	77 miles
Open May 1 to Dec. 31	30 miles	Open May 1 to Dec. 31	2,294 miles
Open May 1 to Nov. 1	112 miles	Open May 1 to Nov. 1	112 miles
Open May 1 Sep. 15	0	Open May 1 Sep. 15	6 miles
Open Jan. 1 Sep. 15	6 miles	Open Jan. 1 Sep. 15	0
Open all year	2,716 miles	Open all year	446 miles

3. **Changes to class of vehicles allowed on existing National Forest Transportation roads:** This alternative includes changes in class of vehicles allowed on hardened surface existing National Forest Transportation System (NFTS) roads from *“Highway Legal Vehicles Only”* to *“All Vehicles”* on all roads where there was an identified public need that out weighed potential risks to public safety. Specific roads with a change in class of vehicles are displayed on the Alternative 6 Map in the map packet.

Existing Class of Vehicles Allowed on NFTS Roads		Alternative 6 Changes to Class of Vehicles Allowed on NFTS Roads	
Harden surface open to <i>“Highway Legal Vehicles Only”</i> Native surface (dirt) open to <i>“All Vehicles”</i>		Hardened surface roads changed to open to <i>“All Vehicles”</i> where a public need was identified that out weighed potential risks to public safety	
Existing Mileage by Class of Vehicles		Alternative 6 Mileage by Class of Vehicle	
Open to <i>“Highway Legal Vehicles Only”</i>	632.8 miles	Open to <i>“Highway Legal Vehicles Only”</i>	356.4 miles
Open to <i>“All Vehicles”</i>	1,896.2 miles	Open to <i>“All Vehicles”</i>	2,172.6 miles

4. **Motorized trail additions to the National Forest Transportation System and designation of “Open Areas”:** Alternative 6 proposes to add those motorized trails to the National Forest Transportation system designed to provide a diversity of road and trail opportunities for experiencing a variety of environments and modes of travel consistent with the National Forest’s recreation role and land capability to the National Forest Transportation System.

Category	Criteria for adding motorized trails to the National Forest Transportation System (NFTS) and designating lands as “Open Areas” in Alternative 6
Public Need	Recommended for addition from public collaboration meetings prior to NOI. Site specifically recommended for addition during scoping on Proposed Action. Dual designated NFTS Maintenance Level 1 and temporary roads as motorized trails if located in the Cal-Ida area.
Soil/Water	No serious adverse impacts to soil and water resources which could not be mitigated at this time.
Lands	If trail crosses private land, landowner has not expressed opposition to granting public access.
Heritage	No adverse heritage impacts which could not be mitigated.

Category	Criteria for adding motorized trails to the National Forest Transportation System (NFTS) and designating lands as “Open Areas” in Alternative 6
Roadless Areas	No significant effect to Inventoried Roadless Area (IRA) character.
Wild & Scenic Rivers	Maintains Wild & Scenic River outstanding remarkable values.
California Spotted Owls	No significant cumulative effects to Spotted Owls.
Northern Goshawk	No significant cumulative effects to Northern Goshawks.
Lahontan Cutthroat Trout	No adverse effects Lahontan Cutthroat Trout
Recreation	Provides high quality OHV experiences. Consistent with Forest Plan land allocations. Not already a NFTS non-motorized trail. Does not require new trail construction or significant re-routing of existing trail.
Transportation	Not a previously decommissioned NFTS road. Not previously closed by Forest Order.
Safety	No unacceptable public safety risks.

The specific motorized trails and “Open Areas” are displayed on the Alternative 6 Map in the map packet. The motorized trails added to the NFTS providing access to dispersed sites average only 160 feet in length and therefore are not shown on the alternative maps. The following is a mileage summary of the motorized trails to be added to the NFTS and an acreage summary of the lands to be designated as “Open Areas.”

Alternative 6 Motorized Trails Added to the National Forest Transportation System (NFTS) and Lands Designated as “Open Areas”	
Trails open to high clearance trail vehicles	31.2 miles
Trails open to ATVs & Motorcycles	11.6 miles
Trails open to motorcycles	21.3 miles
Motorized trails providing access to dispersed sites (Class of vehicle is the same as the adjacent road or trail)	6.2 miles
Total	70.3 miles
Lands designated as “Open Areas”	None
Reservoirs designated as “Open Areas” below high water line for shoreline access on dry soils	None

Alternative 7: Proposed Action as identified in Notice of Intent (NOI)

Alternative 7 is the Proposed Action as published in the Notice of Intent in the Federal Register.

1. **Prohibition of cross country travel:** This alternative would prohibit motorized vehicle travel off the designated National Forest Transportation System (NFTS) roads, NFTS trails and designated “Open Areas” by the public except as allowed by permit or other authorization. Cross country travel would be prohibited on 804,400 acres. Less than 100 acres would continue to be designated

as an “Open Area” at Prosser Pits. The following summarizes the acreages of cross country travel in this alternative.

Existing Cross Country Travel		Alternative 7 Country Travel	
Un-authorized Use	717,900 acres	Un-authorized Use	0 acres
Prohibited by Forest Order	86,500 acres	Prohibited by Forest Order	804,400 acres
Designated as “Open Areas”	> 100 acres	Designated as “Open Areas”	> 100 acres

2. **Changes in seasonal restrictions on National Forest Transportation System (NFTS) roads, NFTS motorized trails and designated “Open Areas”:** Only those seasonal restrictions specified in the TNF LRMP and contained in existing Forest Orders would be continued. The following is a mileage summary of the existing seasonal restrictions by season of use that would be continued in this alternative. Seasonal restrictions for specific roads are identified on the Alternative 7 Map in the map packet.

Existing Seasonal Restrictions		Alternative 7 Changes in Seasonal Restrictions	
Forest Plan deer winter range seasonal closures Forest Plan deer holding area seasonal closures Existing Forest Orders		None	
Existing Mileage by Season of Use		Alternative 7 Mileage by Season of Use	
Open May 1 to Dec. 31	30 miles	Open May 1 to Dec. 31	30 miles
Open May 1 to Nov. 1	112 miles	Open May 1 to Nov. 1	112 miles
Open Jan. 1 Sep. 15	6 miles	Open Jan. 1 Sep. 15	6 miles
Open all year	2,716 miles	Open all year	2,760 miles

3. **Changes to class of vehicles allowed on existing National Forest Transportation roads:** The Proposed Action in the Notice of Intent included one road being changed from “*Open to Highway Legal Vehicles Only*” to “*Open to All Vehicles.*” Road # 843-37 (Faucherie Lake) is proposed to change the class of vehicle from “*Open to Highway Legal Vehicles Only*” to “*Open to All Vehicles.*” The following is a mileage summary of the changes to class of vehicle proposed. The specific road with a change in class of vehicle is also displayed on the Alternative 7 Map in the map packet.

Existing Class of Vehicles Allowed on NFTS Roads		Alternative 7 Changes to Class of Vehicles Allowed on NFTS Roads	
Harden surface open to “ <i>Highway Legal Vehicles Only</i> ” Native surface (dirt) open to “ <i>All Vehicles</i> ”		Same as Proposed Action in Notice of Intent, road #843-37 (Faucherie Lake) changed from open to “ <i>Highway Legal Vehicles Only</i> ” to open to “ <i>All Vehicles</i> ”	
Existing Mileage by Class of Vehicles		Alternative 7 Mileage by Class of Vehicle	
Open to “ <i>Highway Legal Vehicles Only</i> ”	632.8 miles	Open to “ <i>Highway Legal Vehicles Only</i> ”	629.4 miles
Open to “ <i>All Vehicles</i> ”	1,896.2 miles	Open to “ <i>All Vehicles</i> ”	1,899.6 miles

4. **Motorized trail additions to the National Forest Transportation System and designation of “Open Areas”:** Alternative 7 would add those motorized trails to the National Forest

Transportation System (NFTS) contained in the Proposed Action as published in the Notice of Intent. The following is a summary of the criteria used in the Proposed Action for selecting which motorized trails would be added to the NFTS in this alternative.

Category	Criteria for adding motorized trails to the National Forest Transportation System (NFTS) and designating lands as “Open Areas” in Alternative 7
Public Need	Recommended for addition from public collaboration meetings prior to NOI.
Soil/Water	No serious adverse impacts to soil and water resources which could not be mitigated at this time.
Lands	If trail crosses private land, landowner has not expressed opposition to granting public access.
Heritage	No adverse heritage impacts which could not be mitigated.
Roadless Areas	No significant effect to Inventoried Roadless Area (IRA) character.
Wild & Scenic Rivers	Maintains Wild & Scenic River outstanding remarkable values.
California Spotted Owls	No significant cumulative effects to Spotted Owls.
Northern Goshawk	No significant cumulative effects to Northern Goshawks.
Lahontan Cutthroat Trout	No adverse effects Lahontan Cutthroat Trout.
Recreation	Provides high quality OHV experiences Consistent with Forest Plan land allocations. Not already a NFTS non-motorized trail. Does not require new trail construction or significant re-routing of existing trail.
Transportation	Not a previously decommissioned NFTS road. Not previously closed by Forest Order.
Safety	No unacceptable public safety risks.

The specific motorized trails and “Open Areas” are also displayed on the Alternative 7 Map in the map packet. The following is a mileage summary of the motorized trails to be added to the NFTS and an acreage summary of the lands to be designated as “Open Areas.”

Alternative 7 Motorized Trails Added to the National Forest Transportation System (NFTS) and Lands Designated as “Open Areas”	
Trails open to high clearance trail vehicles	24.9 miles
Trails open to ATVs & Motorcycles	2.9 miles
Trails open to motorcycles	17.3 miles
Motorized trails providing access to dispersed sites (Class of vehicle is the same as the adjacent road or trail)	0 miles
Total	45.1 miles
Lands designated as “Open Areas”	None
Reservoirs designated as “Open Areas” below high water line for shoreline access on dry soils	None

Environmental Consequences

This section of the summary compares the alternatives by summarizing their environmental consequences. Chapter 3 describes the environmental consequences of the alternatives in detail.

Air Quality

Fugitive Dust (Particulate Matter): To assess the air quality effects from fugitive dust, the alternatives are compared by the number of miles of native surface (dirt) motorized roads, trails and areas available for use. Those alternatives with the greatest amount of native surface roads, trails and areas are expected to contribute the greatest amount of fugitive dust (particulate matter) into the air. Fugitive dust from unpaved roads/trails/areas can add suspended particles into the air especially during summer use when the soils are dry. There is currently no way to know exactly how much particulate matter is being generated on the TNF through use of motorized vehicles or to speculate how much will be produced by alternative in the future. Therefore, it is assumed that the alternatives that provide the greatest number of miles available for use by motorized vehicles will produce the greatest amount of fugitive dust. Refer to Table S-2. All of the action alternatives reduce the potential for fugitive dust. The greatest reduction is Alternative 3; the least reduction is in Alternative 5.

Table S-2. Native Surface Roads, Trails and Areas Open to Motorized Vehicles

Category	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Cross Country Travel							
Acres	717,900	0	0	0	0	0	0
Routes un-authorized for motorized use (miles)	1389	0	0	0	0	0	0
Roads open to all vehicles (miles)	1896	2316	1899	1900	2316	2142	1900
Trails open to high clearance trail vehicles (miles)	189	233	189	203	434	227	214
Trails open to ATVs and motorcycles (miles)	18	20	18	20	29	29	20
Trails open to motorcycles (miles)	128	153	128	142	154	149	145
Unclassified roads/trails on private land (miles)	1585	1584	1585	1585	1574	1584	1584
Open Areas (acres)	<100	2700	<100	<100	<100	<100	<100
Total							
Acres	717,900	2700	<100	<100	<100	<100	<100
Miles	5205	4307	3819	3850	4508	4131	3864

Naturally Occurring Asbestos (NOA): Motorized vehicle users on native surface roads and trails with Naturally Occurring Asbestos (NOA) may have increased potential risks for adverse effects to their health. Asbestos is classified as a known human carcinogen by state, federal, and international agencies. Table S-3 displays the area available for motor vehicle use on lands “most likely” to contain naturally occurring asbestos by alternative. All of the action alternatives reduce the risks to human health and safety associated with exposure to NOA. The greatest reduction is in Alternative 3, the least reduction is in Alternative 5.

Table S-3. Native Surface Roads, Trails and Areas Open to Motorized Vehicles on Lands “Most Likely” to Contain Naturally Occurring Asbestos

Category	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Cross Country Travel							
Area (acres)	1,660	0	0	0	0	0	0
Routes un-authorized for motor vehicle use (miles)	50	0	0	0	0	0	0
Roads open to all vehicles (miles)	33	36	33	33	36	35	33
Trails open to high clearance trail vehicles (miles)	3	4	3	3	8	4	3
Trails open to ATVs and motorcycles (miles)	10	13	10	13	13	13	13
Trails open to motorcycles (miles)	4	4	4	4	4	4	4
Roads on private lands	18	18	18	18	18	18	18
Total							
Area	1,660	0	0	0	0	0	0
Miles	118	76	68	71	79	74	72

Watershed Resources: Geology, Soil, Hydrology

Paleontological resources: Paleontological resources on the Tahoe National Forest include plant and animal fossils and petrified wood. There are six known Paleontological sites currently identified on the Tahoe National Forest. All six of the sites could be impacted by motorized use in Alternative 1 (No Action). All of the action alternatives reduce the number of sites potentially impacted by motorized use. The number of sites potentially impacted by motorized use in each alternative is shown in Table S-4.

Table S-4. Paleontological resources on the Tahoe National Forest potentially impacted by motorized vehicles by alternative

Site	Description	Potential Impacts	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
1	Fossilized mastodon remains	Motorized trail added to NFTS	X				X		
2	Petrified Wood	One existing NFTS road	X	X	X	X	X	X	X
3	Petrified Wood	One existing NFTS Motorized Trail	X	X	X	X	X	X	X
4	Petrified Wood	Motorized trail added to NFTS	X	X			X	X	X
5	Paleo Botanical Fossils	Motorized trail added to NFTS One existing NFTS road	X	X	X	X	X	X	X
6	Paleo Botanical Fossils	One motorized trail un-authorized for motorized use	X						
Total Number			6	4	3	3	5	4	4

Groundwater Resources: Given the scale of this project, there would be little measurable effect of this project to water quality of groundwater resources. All motorized trail additions to the National Forest Transportation System (NFTS) which could impact groundwater resources have mitigation measures specified in Appendix A to reduce or eliminate any potential adverse effects. These mitigation measures for ground water resources are summarized by alternative in Table S-5.

Table S-5. Mitigation measures to protect groundwater resources by alternative

Trail ID	Ground Water Resource	Mitigation Measure Required	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
ARM-13	Spring near trail	None, no impact to spring	X	X			X	X	X
TKN-J5	Seep at beginning of trail	Redirect water flow	X	X			X	X	X
SV-005	Stringer meadows near trail	Barriers placed to protect meadows	X	X			X		
TKS-11	Adjacent to wet meadow complex and several wetlands	Drainage structures and barriers placed to protect meadows	X	X			X	X	X
YRS-SF5	Adjacent wetland	Barriers placed to protect meadows	X	X		X	X	X	X
TKN-003	Begins at wetland	None, no impact to wetland	X	X			X	X	
TKN-J2	Seasonal wetland/vernal pool at the end of the trail	Barriers placed to protect wetland/vernal pool	X	X		X	X	X	X
Eureka Diggings	Seasonal wetlands/vernal pool	None, No impact to wetland/vernal pool	X						
Total Number of Mitigations			8	7	0	2	7	6	5

Abandon Mine Lands (AML): To assess the potential health and safety risks from abandoned mine lands, the alternatives are compared by the number of known, mapped AML sites within 100 feet of roads and motorized trails. There are currently 96 AML sites within 100 feet of roads and motorized trails. Those alternatives with the greatest number of AML sites with 100 feet of roads and motorized trails are expected to have the highest risk to public safety. There is no way of knowing how many people using the roads and motorized trails may be accessing the mine sites. Table S-6 shows the number of AML sites which could have potential public safety concerns related to motorized public access. All the action alternatives reduce motorized access to abandon mine lands.

Table S-6. Number of Abandoned Mine Land (AML) Sites within 100 Feet of Roads and Motorized Trails by Alternative

Alternative	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Number of AML Sites within 100' of roads and motorized trails	96	61	58	61	61	61	61

Soils: Direct impacts to soils that result from this project are limited. There are no new ground disturbing activities proposed with this project. The roads and trails being evaluated in this analysis already exist on the ground. They are compacted and generally lack vegetation. “Higher Risk Route” (native surface roads and motorized trails) density is used to assess the effects of this project on soils on the TNF. The density of “Higher Risk Routes” by major river basin by alternative is shown in Table S-7. The No Action alternative (Alternative 1) has the highest density of “Higher Risk Routes” used by motorized vehicles. All action alternatives would result in lower densities of “Higher Risk Routes” than in the existing condition (Alt. 1).

Table S-7. Density of “Higher Risk Routes” by major river basin and alternative (mi. /sq. mi.)

River Basin	HUC 7 Watershed Acres	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Truckee River	200,500	3.7	3.2	3.0	3.0	3.3	3.1	3.0
Feather River	112,534.28	2.7	2.3	2.0	2.0	2.3	2.2	2.0
<i>North Yuba River</i>	229,995	2.5	1.9	1.5	1.5	2.1	1.6	1.5
<i>Middle Yuba River</i>	126,370	2.8	2.2	2.1	2.1	2.3	2.2	2.1
<i>South Yuba River</i>	170,886	2.7	2.3	2.0	2.0	2.4	2.2	2.0
Subtotal Yuba	527,252	2.6	2.1	1.8	1.8	2.2	2.0	1.8
Bear River	20,108	3.9	3.3	2.8	2.9	3.3	3.3	2.9
<i>North Fork American River</i>	146,533	3.2	2.6	2.3	2.3	2.9	2.5	2.3
<i>Middle Fork American River</i>	133,107	2.2	1.7	1.6	1.6	1.8	1.7	1.6
Subtotal American	279,639	2.6	2.1	1.9	1.9	2.3	2.1	1.9
TNF Total		2.8	2.3	2.1	2.1	2.5	2.2	2.1

Impaired Water Bodies: There are six water bodies on the Tahoe National Forest that are listed as impaired on the EPA’s 303(d) List. These are the Truckee River (sediment); Stampede Lake (pesticides of unknown origin), Donner Lake (PCBs), Kanaka Creek (arsenic), Squaw Creek (sediment and siltation) and Humbug Creek (lead, sediment, etc.). Table S-8 displays the 303(d) listed water bodies, the reason for listing and any potential impacts which may contribute to the reasons for their listing. All the action alternatives either improve the water quality of these impaired water bodies or have no effect on them.

Table S-8. 303(d) listed water bodies, the reason for listing and potential impacts

Impaired Water Body	Pollutant/Stressor	Indicator of Potential Impact	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Humbug Creek	Copper, Mercury, Zinc, Sedimentation & Siltation	National Forest System Native Surface Roads and Trails Open Year Round (Miles)	<1	0	0	0	0	0	0
		National Forest System Native Surface Roads and Trails Open Seasonally (Miles)	0	0	0	0	<1	0	0
		Private Ownership Native Surface Roads and Trails Open Year Round (Miles)	4	4	4	4	4	4	4
Kanaka Creek	Arsenic	Cross Country Travel	Continues	Prohibited	Prohibited	Prohibited	Prohibited	Prohibited	Prohibited
		Abandon Mines	No Change	No Change	No Change	No Change	No Change	No Change	No Change
		Mining, Rock Formations	No Change	No Change	No Change	No Change	No Change	No Change	No Change
Donner Lake	Priority Organics	Transportation Utility Corridor Activity	No Change	No Change	No Change	No Change	No Change	No Change	No Change
		Pesticide Applications	No Change	No Change	No Change	No Change	No Change	No Change	No Change
Stampede Reservoir	Sediment & Siltation	National Forest System Native Surface Roads and Trails Open Year Round (Miles)	<1	0	0	0	0	0	0
		National Forest System Native Surface Roads and Trails Open Seasonally (Miles)	0	0	0	0	<1	0	0
		Private Ownership Native Surface Roads and Trails Open Year Round (Miles)	40	40	40	40	40	40	40
Squaw Creek	Sediment & Siltation	Cross Country Travel	Continues	Prohibited	Prohibited	Prohibited	Prohibited	Prohibited	Prohibited
		National Forest System Native Surface Roads and Trails Open Year Round (Miles)	685	494	434	0	3	3	451
		National Forest System Native Surface Roads and Trails Open Seasonally (Miles)	0	0	0	449	598	488	0
Truckee River	Sediment & Siltation	Private Ownership Native Surface Roads and Trails Open Year Round (Miles)	628	628	628	628	628	628	628
		OHV Open Areas (Number)	4	4	1	1	4	4	4
		Cross Country Travel	Continues	Prohibited	Prohibited	Prohibited	Prohibited	Prohibited	Prohibited

Watershed Connectivity (“Higher Risk Route” Density near Streams): Densities of native surface roads and motorized trails (Higher Risk Routes) within Riparian Conservation Areas (RCAs) serve as a relative measure of watershed connectivity. Connectivity refers to the ease of movement, or rates of exchange, with which water, energy, nutrients, and organisms pass from one area to another, unhindered in the absence of impediments, such as dams, diversions, roads and bridges, large habitat openings, and recreational developments. As ecosystems become fragmented and disconnected, the scale and rate at which essential processes, such as nutrient and energy cycling and gene flow, operate become restricted. The greater the density of “Higher Risk Routes” open to motorized vehicles within RCAs, the greater the potential risk to watershed connectivity. Table S-9 shows the density of High Risk Routes within RCAs by major river basin and alternative. All of the action alternatives improve watershed connectivity. The greatest improvement is in Alternatives 3, 4 and 7. The least improvement is in Alternative 5.

Table S-9. “Higher Risk Route” density in RCAs by river basin and alternative (mi./sq. mi.)

River Basin	HUC 7 Watershed Acres	RCA Acres	Alt. 1 Density	Alt. 2 Density	Alt. 3 Density	Alt. Density	Alt. 5 Density	Alt. 6 Density	Alt. 7 Density
Truckee River	135,794	28,912	3.2	2.5	2.3	2.3	2.5	2.4	2.3
Feather River	57,896	11,091	1.8	1.7	1.2	1.3	1.7	1.5	1.3
North Yuba River	152,490	36,322	1.7	1.2	1.0	1.0	1.5	1.1	1.0
Middle Yuba River	47,291	9549	0.9	0.6	0.5	0.6	0.6	0.6	0.5
South Yuba River	104,205	23,813	1.6	1.5	1.3	1.3	1.5	1.5	1.3
Subtotal Yuba River	303,986	69,684	1.5	1.2	1.0	1.0	1.3	1.1	1.0
Bear River	12,452	3909	1.1	1.0	0.7	0.8	1.1	1.0	0.8
Middle Fork American River	87,674	19,070	1.2	1.2	1.0	1.0	1.3	1.1	1.0
North Fork American River	92,713	20,159	1.5	1.2	1.1	1.1	1.2	1.1	1.1
Subtotal American River	180,387	39,229	1.3	1.2	1.0	1.0	1.2	1.1	1.0
Total TNF	1,174,888	261,738	1.7	1.4	1.2	1.2	1.5	1.4	1.2

Watershed Connectivity (Stream Crossing Density in Riparian Conservation Areas): Another common measure of hydrologic connectivity is stream crossing densities within Riparian Conservation Areas. A higher density of stream crossings in Riparian Conservation Areas (RCAs) has the potential to adversely impact water quality. This analysis focuses on native surface roads and trails open for motorized use previously defined as “Higher Risk Routes.” Surfaced roads, non-motorized trails, over-snow routes, and county and state roads tend to be more stable. Table S-10 shows the density of “Higher Risk Route” stream crossings in RCAs by major river basin. The No Action alternative (Alternative 1) has the greatest density of “Higher Risk Route” stream crossings in RCAs. All action alternatives would result in a lower density of “Higher Risk Route” stream crossings in RCAs than in the existing condition (Alt. 1).

Table S-10. “Higher Risk Route” stream crossing density in RCAs by river basin (mi./sq. mi.)

River Basin	River Basin Acres	RCA Acres	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Truckee River	200,500	40,495	8.4	7.5	6.8	6.9	7.6	7.3	6.9
Feather River	112,534	21,927	13.7	12.6	10.2	10.4	12.6	11.8	10.4
North Yuba River	229,995	55,169	6.7	5.7	3.8	3.8	6.5	4.3	3.8
Middle Yuba River	126,370	24,674	8.4	7.1	6.3	6.3	7.1	7.1	6.3
South Yuba River	170,886	36,943	6.4	5.9	5.0	5.0	5.9	5.6	5.0
Subtotal Yuba River	527,252	116,786	7.0	6.0	4.7	4.7	6.5	5.3	4.7
Bear River	20,112	6,067	6.8	5.3	4.3	4.5	5.3	5.3	4.5
Middle Fork American River	146,533	32,590	6.8	6.5	5.5	5.5	7.0	6.3	5.5
North Fork American River	133,107	29,303	4.3	3.5	3.1	3.1	3.5	3.5	3.1
Subtotal American River	279,639	61,893	5.6	5.1	4.4	4.4	5.3	4.9	4.4
Total TNF	1,946,928	247,169	7.5	6.6	5.4	5.5	6.9	6.1	5.5

Summary Watershed Resource Effects: The prohibition on cross country travel and wet season closures are the two most important actions proposed in this project. Prohibiting cross country travel would limit the expansion of the road and trail related disturbance footprint. Equally as important in limiting the negative effects of motorized travel on soil and watershed resources is the wet season closure. The positive effects of these two actions far outweigh the proposed additions of motorized trails to the National Forest Transportation System or the changes in vehicle class. The order of potential cumulative effect of the alternatives, from highest potential to lowest potential, would be Alternative 1, Alternative 2, Alternative 7, Alternative 3, Alternative 5, Alternative 6, and then Alternative 4.

Terrestrial & Aquatic Species

Black Bear: The black bear is a Management Indicator Species on the Tahoe NF. The Tahoe LRMP describes important bear habitat as all forested types, particularly in the early and late seral vegetation types. California Wildlife Habitat Relationships program (CWHR 2005) describes black bear habitats as dense, mature stands of forest habitats, and black bears feed in a variety of habitats including brushy stands of forest, valley foothill riparian and wet meadows. Habitat requirements include large trees and various cavities and hollows in trees, snags, stumps, logs, uprooted trees, talus slopes, or earth dens. Large undeveloped blocks of habitat, where bears will encounter few humans in the core areas within these blocks, are assumed to be important for black bear. Table S-11 summarizes the overall net effect to black bear from the proposed actions from motorized route additions, prohibition of cross country travel, wet weather restrictions, and seasonal closures. All of the action alternatives benefit black bear habitat. The greatest benefit is in Alternatives 3 and 4; the least benefit is in Alternative 5.

Table S-11. Black Bear - Summary of Overall Net Direct and Indirect Effects

Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Negatively affects black bear habitat where cross country travel continued, including within 19% habitat within 275 meters of existing routes unauthorized to motorized public use	Benefits black bear habitat where cross country travel is prohibited, including within 18% habitat within 275 meters of existing routes unauthorized to motorized public use	Benefits black bear habitat where cross country travel is prohibited, including within 19% habitat within 275 meters of existing routes unauthorized to motorized public use	Benefits black bear habitat where cross country travel is prohibited, including within 19% habitat within 275 meters of existing routes unauthorized to motorized public use	Benefits black bear habitat where cross country travel is prohibited, including within 16% habitat within 275 meters of existing routes unauthorized to motorized public use	Benefits black bear habitat where cross country travel is prohibited, including within 18% habitat within 275 meters of existing routes unauthorized to motorized public use	Benefits black bear habitat where cross country travel is prohibited, including within 19% habitat within 275 meters of existing routes unauthorized to motorized public use

Wolverine and Sierra Nevada red fox: The wolverine and the Sierra Nevada red fox are wide-ranging carnivores that use a variety of vegetation types, but appear to select areas that are relatively free from significant human disturbance. Both the wolverine and the Sierra Nevada red fox are designated by the Regional Forester in the Pacific Southwest Region of the Forest Service as Sensitive Species. Table S-12 summarizes the overall net effect to wolverine and the Sierra Nevada red fox from the proposed actions from motorized route additions, prohibition of cross country travel, wet weather restrictions, and seasonal closures. All of the action alternatives benefit wolverine and red fox habitat. The greatest benefit is in Alternative 3; the least benefit in Alternative 5.

Table S-12. Wolverine and Red Fox - Summary of Overall Net Direct and Indirect Effects

Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Negatively affects red fox and wolverine habitat where cross country travel continued on 717,900 acres, including 6% habitat influenced within 60 meters of existing routes unauthorized to motorized public use.	Benefits red fox and wolverine habitat where cross country travel is prohibited on 715,200 acres, including 6% habitat influenced within 60 meters of existing routes unauthorized to motorized public use.	Benefits red fox and wolverine habitat where cross country travel is prohibited on 717,900 acres, including 6% habitat influenced within 60 meters of existing routes unauthorized to motorized public use.	Benefits red fox and wolverine habitat where cross country travel is prohibited on 717,900 acres, including 6% habitat influenced within 60 meters of existing routes unauthorized to motorized public use.	Benefits red fox and wolverine habitat where cross country travel is prohibited on 717,900 acres, including 4% habitat influenced within 60 meters of existing routes unauthorized to motorized public use.	Benefits red fox and wolverine habitat where cross country travel is prohibited on 717,900 acres, including 6% habitat influenced within 60 meters of existing routes unauthorized to motorized public use.	Benefits red fox and wolverine habitat where cross country travel is prohibited on 717,900 acres, including 6% habitat influenced within 60 meters of existing routes unauthorized to motorized public use.
Has the highest proportion of habitat within the highest route density categories (>4 mi/mi ²) resulting in low habitat security, and the lowest proportion in the lowest density categories (<4 mi/mi ²)	Reduces the proportion of habitat in the highest route density categories (>4 mi/mi ²) and increases the proportion in the lowest density categories (>4 mi/mi ²) by 20% compared to Alternative 1.	Reduces the proportion of habitat in the highest route density categories (>4 mi/mi ²) and increases the proportion in the lowest density categories (>4 mi/mi ²) by 22% compared to Alternative 1.	Reduces the proportion of habitat in the highest route density categories (>4 mi/mi ²) and increases the proportion in the lowest density categories (>4 mi/mi ²) by 18% compared to Alternative 1.	Reduces the proportion of habitat in the highest route density categories (>4 mi/mi ²) and increases the proportion in the lowest density categories (>4 mi/mi ²) by 17% compared to Alternative 1.	Reduces the proportion of habitat in the highest route density categories (>4 mi/mi ²) and increases the proportion in the lowest density categories (>4 mi/mi ²) by 18% compared to Alternative 1.	Reduces the proportion of habitat in the highest route density categories (>4 mi/mi ²) and increases the proportion in the lowest density categories (>4 mi/mi ²) by 18% compared to Alternative 1.

Mule Deer: The mule deer is a Management Indicator Species on the Tahoe NF. The Tahoe LRMP indicates that mule deer use a mix of all successional stages, but the most important mule deer habitat types are early successional types, hardwoods, and shrublands. Most deer on the Tahoe NF migrate seasonally between higher elevation summer range and low elevation winter range. In general, critical winter range, critical summer range, and fawning habitats represent key habitats for deer where heavier use and higher quality habitats for wintering and summer use are expected to occur. Table S-13 summarizes the overall net effect to mule deer from the proposed actions from motorized route additions, prohibition of cross country travel, wet weather restrictions, and seasonal closures. All of the action alternatives benefit mule deer habitat. Alternative 4 provides the greatest benefit.

Table S-13. Mule Deer - Summary of Overall Net Direct and Indirect Effects

Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Allows cross country travel to continue where 380 miles of existing routes unauthorized to motorized public use would continue to adversely affect deer habitats	Benefits deer habitats by prohibiting cross country travel on 369 miles within deer habitats	Benefits deer habitats by prohibiting cross country travel on 380 miles within deer habitats	Benefits deer habitats by prohibiting cross country travel on 374 miles within deer habitats, and receives additional protection from wet weather seasonal restrictions on native surfaced roads	Benefits deer habitats by prohibiting cross country travel on 310 miles within deer habitats, and receives additional protection from wet weather seasonal restrictions on native surfaced roads	Benefits deer habitats by prohibiting cross country travel on 371 miles within deer habitats, and receives additional protection from wet weather seasonal restrictions on native surfaced roads	Benefits deer habitats by prohibiting cross country travel on 374 miles within deer habitats

Oak Woodland and Oak-Conifer Associated Species: Species within the Oak Woodland and Mixed Oak-Conifer Forest Group include mule deer, wild turkey, band-tailed pigeon, Western gray squirrel, and the pallid bat. The mule deer is identified as Management Indicator Species in the Sierra Nevada Forests (Sierra Nevada Forests Management Indicator Species Amendment Record of Decision 2007). See previous section for mule deer MIS analysis. The pallid bat is designated as a Forest Service Sensitive Species by the Regional Forester. Table S-14 summarizes the overall net effect to oak woodland and oak conifer associated species from the proposed actions from motorized route additions, prohibition of cross country travel, wet weather restrictions, and seasonal closures. All of the action alternatives benefit oak woodland and oak-conifer associated species. The greatest benefits are in Alternatives 2, 3, 4 and 7.

Table S-14. Oak and Oak-Conifer Associated Species - Summary of Overall Net Direct and Indirect Effects

Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Negatively affects 65,239 oak and oak-conifer habitat acres where cross country travel would not be prohibited, resulting in the greatest proportion of habitat within the highest motorized route density categories	Benefits 65,239 oak and oak-conifer habitat acres where cross country travel is prohibited, resulting in lowest proportion of habitat in the highest motorized route density categories. Similar to Alts 3, 4, & 7.	Benefits 65,239 oak and oak-conifer habitat acres where cross country travel is prohibited, resulting in lowest proportion of habitat in the highest motorized route density categories. Similar to Alts 2, 4, & 7.	Benefits 65,239 oak and oak-conifer habitat acres where cross country travel is prohibited, resulting in lowest proportion of habitat in the highest motorized route density categories. Similar to Alts 2, 3, & 7.	Benefits 65,239 oak and oak-conifer habitat acres where cross country travel is prohibited, resulting in lower proportion of habitat in the highest motorized route density categories than Alt 1 and slightly higher than 2, 3, 4, & 7. Similar to Alt 6.	Benefits 65,239 oak and oak-conifer habitat acres where cross country travel is prohibited, resulting in lower proportion of habitat in the highest motorized route density categories than Alt 1 and slightly higher than 2, 3, 4, & 7. Similar to Alt 5.	Benefits 65,239 oak and oak-conifer habitat acres where cross country travel is prohibited, resulting in lowest proportion of habitat in the highest motorized route density categories. Similar to Alts 2, 3, & 4.

Fox Sparrow: The fox sparrow was selected as the MIS for shrubland (chaparral) habitat on the west-slope of the Sierra Nevada, comprised of montane chaparral (MCP), mixed chaparral (MCH), and chamise-redshank chaparral (CRC) as defined by the California Wildlife Habitat Relationships System (CWHR) (CDFG 2005). Recent empirical data from the Sierra Nevada indicate that, in the Sierra Nevada, the fox sparrow is dependent on open shrub-dominated habitats for breeding (Burnett and Humple 2003, Burnett et al. 2005, Sierra Nevada Research Center 2007). Table S-15 summarizes the overall net effect to the fox sparrow from the proposed actions from motorized route additions, prohibition of cross country travel, wet weather restrictions, and seasonal closures. All of the action alternatives benefit fox sparrow habitat. The greatest benefits are in Alternatives 3 and 4; the least benefits are in Alternative 5.

Table S-15. Fox Sparrow - Summary of Overall Net Direct and Indirect Effects

Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Negatively affects fox sparrow 39,639 acres of shrubland habitat where cross country travel continued, including within 15% habitat within a 200-meter zone of influence of existing motorized trails un-authorized for motorized use.	Benefits fox sparrow on 39,639 acres of shrubland habitat where cross country travel is prohibited, including within approx. 14% habitat within a 200-meter zone of influence of existing motorized trails un-authorized for motorized use.	Benefits fox sparrow on 39,639 acres of shrubland habitat where cross country travel is prohibited, including within 15% habitat within a 200-meter zone of influence of existing motorized trails un-authorized for motorized use.	Benefits fox sparrow on 39,639 acres of shrubland habitat where cross country travel is prohibited, including within approx. 15% habitat within a 200-meter zone of influence of existing motorized trails un-authorized for motorized use.	Benefits fox sparrow on 39,639 acres of shrubland habitat where cross country travel is prohibited, including within 11% habitat within a 200-meter zone of influence of existing motorized trails un-authorized for motorized use.	Benefits fox sparrow on 39,639 acres of shrubland habitat where cross country travel is prohibited, including within approx. 14% habitat within a 200-meter zone of influence of existing motorized trails un-authorized for motorized use.	Benefits fox sparrow on 39,639 acres of shrubland habitat where cross country travel is prohibited, including within 14% habitat within a 200-meter zone of influence of existing motorized trails un-authorized for motorized use.

Mountain Quail: The mountain quail was selected as the MIS for early and mid seral coniferous forest (ponderosa pine, Sierran mixed conifer, white fir, red fir, and eastside pine) habitat on the Tahoe

NF, as amended by in the Sierra Nevada Forests Bioregional EIS. Early seral coniferous forest habitat is comprised primarily of seedlings (<1” dbh), saplings (1”-5.9” dbh), and pole-sized trees (6”-10.9” dbh). Mid seral coniferous forest habitat is comprised primarily of small-sized trees (11”-23.9” dbh). The mountain quail is found particularly on steep slopes, in open, brushy stands of conifer and deciduous forest and woodland, and chaparral; it may gather at water sources in the summer, and broods are seldom found more that 0.8 km (0.5 mi) from water (CDFG 2005). Mountain quail have the potential to be affected by road and trail-associated factors. Table S-15 summarizes the overall net effect to mountain quail from the proposed actions from motorized route additions, prohibition of cross country travel, wet weather restrictions, and seasonal closures. All of the action alternatives benefit mountain quail habitat. The greatest benefit is in Alternative 3; the least benefit is in Alternative 5.

Table S-16. Mountain Quail - Summary of Overall Net Direct and Indirect Effects

Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Negatively affects 344,961 acres of habitat where cross country travel not prohibited, including within 43% early and mid seral habitat within a 200-meter zone of influence of existing routes motorized trails un-authorized for motorized use.	Benefits mountain quail on 344,961 acres of habitat where cross country travel is prohibited, including within approx.41% within a 200-meter zone of influence of existing motorized trails un-authorized for motorized use.	Benefits mountain quail on 344,961 acres of habitat where cross country travel is prohibited, including within approx.43% within a 200-meter zone of influence of existing motorized trails un-authorized for motorized use.	Benefits mountain quail on 344,961 acres of habitat where cross country travel is prohibited, including within approx.42% within a 200-meter zone of influence of existing motorized trails un-authorized for motorized use.	Benefits mountain quail on 344,961 acres of habitat where cross country travel is prohibited, including within 33% within a 200-meter zone of influence of existing motorized trails un-authorized for motorized use.	Benefits mountain quail on 344,961 acres of habitat where cross country travel is prohibited, including within 41% within a 200-meter zone of influence of existing motorized trails un-authorized for motorized use.	Benefits mountain quail on 344,961 acres of habitat where cross country travel is prohibited, including within 41% within a 200-meter zone of influence of existing motorized trails un-authorized for motorized use.

Blue Grouse (Sooty Grouse): Blue grouse are a Management Indicator Species (MIS) on the Tahoe NF. Blue grouse were chosen to represent mature conifer forests on the Tahoe NF. Blue grouse have the potential to be affected by road and motorized trail-associated factors. The relationship between roads and motorized trails associated factors to population trends of the blue grouse is unknown. Table S-17 summarizes the overall net effect to Blue grouse from the proposed actions from motorized route additions, prohibition of cross country travel, wet weather restrictions, and seasonal closures. All of the action alternatives benefit blue grouse habitat. The greatest benefit is in Alternative 3; the least benefit is in Alternative 5.

Table S-17. Blue (Sooty) Grouse - Summary of Overall Net Direct and Indirect Effects

Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Negatively affects 17,178 acres of habitat where cross country travel not prohibited, including within 11% habitat within a 200-meter zone of influence of existing motorized trails un-authorized for motorized use.	Benefits sooty grouse on 17,178 acres of habitat where cross country travel is prohibited, including within approx.10% habitat within a 200-meter zone of influence of existing motorized trails un-authorized for motorized use.	Benefits sooty grouse on 17,178 acres of habitat where cross country travel is prohibited, including within approx.11% habitat within a 200-meter zone of influence of existing motorized trails un-authorized for motorized use.	Benefits sooty grouse on 17,178 acres of habitat where cross country travel is prohibited, including within approx.10% habitat within a 200-meter zone of influence of existing motorized trails un-authorized for motorized use.	Benefits sooty grouse on 17,178 acres of habitat where cross country travel is prohibited, including within approx.9% habitat within a 200-meter zone of influence of existing motorized trails un-authorized for motorized use.	Benefits sooty grouse on 17,178 acres of habitat where cross country travel is prohibited, including within approx.10% habitat within a 200-meter zone of influence of existing motorized trails un-authorized for motorized use.	Benefits sooty grouse on 17,178 acres of habitat where cross country travel is prohibited, including within approx.10% habitat within a 200-meter zone of influence of existing motorized trails un-authorized for motorized use.

California Spotted Owls: Gaines et al. (2003) reviewed studies on the northern spotted owl and determined that road and trail associated factors that were likely to affect spotted owls were collisions, disturbance at a specific site, physiological response, edge effects, and snag reduction. These same factors are expected to affect the California spotted owl in a similar way based upon available literature (Verner et al. 1992, Seamans 2005, Blakesley 2003). Table S-18 summarizes the overall net effect to California spotted owls from the proposed actions from motorized route additions, prohibition of cross country travel, wet weather restrictions, and seasonal closures. All of the action alternatives benefit California spotted owl habitat.

Table S-18. California Spotted Owl - Summary of Overall Net Direct and Indirect Effects

Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Negatively affects PACs, acres within 0.25 miles of activity centers, and HRCAs, where cross country travel is not prohibited. Increases disturbance and habitat fragmentation.	Benefits PACs, acres within 0.25 miles of activity centers, and HRCAs, where cross country travel is prohibited. Reduces disturbance and habitat fragmentation.	Benefits PACs, acres within 0.25 miles of activity centers, and HRCAs, where cross country travel is prohibited. Reduces disturbance and habitat fragmentation.	Benefits PACs, acres within 0.25 miles of activity centers, and HRCAs, where cross country travel is prohibited. Reduces disturbance and habitat fragmentation.	Benefits PACs, acres within 0.25 miles of activity centers, and HRCAs, where cross country travel is prohibited. Reduces disturbance and habitat fragmentation.	Benefits PACs, acres within 0.25 miles of activity centers, and HRCAs, where cross country travel is prohibited. Reduces disturbance and habitat fragmentation.	Benefits PACs, acres within 0.25 miles of activity centers, and HRCAs, where cross country travel is prohibited. Reduces disturbance and habitat fragmentation.

Northern Goshawk: The northern goshawk is designated as a Forest Service Sensitive Species in Region 5. There are currently 285,695 acres of suitable goshawk habitat on NFS lands within the Tahoe NF as defined by CWHR types 4 M, 4D, 5M, 5D, and 6. Northern goshawk territories are managed on the Tahoe National Forest as Protected Activity Centers (PACs) as prescribed by the Sierra Nevada Forest Plan Amendment (2004). To date, the Tahoe National Forest has 94 known northern goshawk PACs. Collection, habitat loss or fragmentation, disturbance at a specific site, and edge effects were described by Gaines et al. (2003) as being road and trail-associated factors that potentially affect the northern goshawk.

Table S-19 summarizes the overall net effect to northern goshawk from the proposed actions from motorized route additions, prohibition of cross country travel, wet weather restrictions, and seasonal closures. All of the action alternatives benefit northern goshawk habitat. The greatest benefits are in Alternative 3 and 4. The least benefits are in Alternative 5.

Table S-19. Northern Goshawk - Summary of Overall Net Direct and Indirect, Effects

Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Negatively affects 20,036 PAC acres and 10,384 acres within 0.25 miles of activity centers, where cross country travel continues (i.e. 29.4 miles of motorized routes affects 68% of PACs). Increases disturbance and habitat fragmentation.	Benefits 20,036 PAC acres and 10,384 acres within 0.25 miles of activity centers, where cross country travel is prohibited (i.e., reduces impacts of 28 miles of motorized trails un-authorized for motorized use within 64% of TNF PACs). Reduces disturbance and habitat fragmentation.	Benefits 20,036 PAC acres and 10,384 acres within 0.25 miles of activity centers, where cross country travel is prohibited (i.e., reduces impacts of 29.4 miles of motorized trails un-authorized for motorized use, within 68% of TNF PACs). Reduces disturbance and habitat fragmentation.	Benefits 20,036 PAC acres and 10,384 acres within 0.25 miles of activity centers, where cross country travel is prohibited (i.e., reduces impacts of 29.4 miles of motorized trails un-authorized for motorized use within 68% of TNF PACs). Reduces disturbance and habitat fragmentation.	Benefits 20,036 PAC acres and 10,384 acres within 0.25 miles of activity centers, where cross country travel is prohibited (i.e., reduces impacts of 23.6 miles of motorized trails un-authorized for motorized use within 50% of TNF PACs). Reduces disturbance and habitat fragmentation.	Benefits 20,036 PAC acres and 10,384 acres within 0.25 miles of activity centers, where cross country travel is prohibited (i.e., reduces impacts of 28.3 miles of motorized trails un-authorized for motorized use within 64% of PACs). Reduces disturbance and habitat fragmentation.	Benefits 20,036 PAC acres and 10,384 acres within 0.25 miles of activity centers, where cross country travel is prohibited public use (i.e., reduces impacts of 28.6 miles of motorized trails un-authorized for motorized use within 66% of PACs). Reduces disturbance and habitat fragmentation.

American Marten and Pacific Fisher: Martens prefer coniferous forest habitat with large diameter trees and snags, large down logs, moderate-to-high canopy closure, and an interspersed of riparian areas and meadows. Important habitat attributes are: vegetative diversity, with predominately mature forest; snags; dispersal cover; and large woody debris (Allen 1987). Martens selected stands with 40 to 60 percent canopy closure for both resting and foraging and avoided stands with less than 30 percent canopy closure (Spencer et al. 1983). Martens generally avoid habitats that lack overhead cover, presumably because these areas do not provide protection from avian predators (Allen 1982, USDA 1994, Spencer et al. 1983).

The Tahoe NF falls within an area considered to be a distribution gap within the range of the fisher (Zielinski et al. 2005). However, roads can impact fisher in ways similar to the marten through direct mortality and habitat fragmentation. Vehicular collision is a known source of fisher mortality (Heinemeyer 1993 In USDA 2001). Approximately 3.4 percent of 147 radio-collared fishers studied in Massachusetts (York 1996) and Maine (Krohn et al. In USDA 1994) were killed by vehicles. The risk of collision mortality increases with road density, but possibly increases with the density of highways and freeways where vehicle speeds are highest. Table S-20 summarizes the overall net effect to American marten and Pacific fisher from the proposed actions from motorized route additions, prohibition of cross country travel, wet weather restrictions, and seasonal closures. All of the action alternatives benefit American marten and Pacific fisher habitat.

Table S-20. American marten and Pacific fisher - Summary of Overall Net Direct and Indirect Effects

Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Negatively affects between 267,952 and 394,847 acres of marten and fisher habitats within OFEAs, late seral habitat, and Forest Carnivore Network, where motorized cross country travel is not prohibited.	Benefits between 267,952 and 394,847 acres of marten and fisher habitats within OFEAs, late seral habitat, and Forest Carnivore Network, where motorized cross country travel is prohibited.	Benefits between 267,952 and 394,847 acres of marten and fisher habitats within OFEAs, late seral habitat, and Forest Carnivore Network, where motorized cross country travel is prohibited.	Benefits between 267,952 and 394,847 acres of marten and fisher habitats within OFEAs, late seral habitat, and Forest Carnivore Network, where motorized cross country travel is prohibited).	Benefits between 267,952 and 394,847 acres of marten and fisher habitats within OFEAs, late seral habitat, and Forest Carnivore Network, where motorized cross country travel is prohibited.	Benefits between 267,952 and 394,847 acres of marten and fisher habitats within OFEAs, late seral habitat, and Forest Carnivore Network, where motorized cross country travel is prohibited.	Benefits between 267,952 and 394,847 acres of marten and fisher habitats within OFEAs, late seral habitat, and Forest Carnivore Network, where motorized cross country travel is prohibited.
Increases disturbance and habitat fragmentation, with the greatest proportion of motorized route densities >2 mi/mi ² .	Reduces disturbance and habitat fragmentation, by reducing motorized route densities by approx. 10%, compared to Alternative 1.	Reduces disturbance and habitat fragmentation by reducing motorized route densities by approx. 10% compared to Alternative 1.	Reduces disturbance and habitat fragmentation by reducing motorized route densities by approx. 10% compared to Alternative 1.	Reduces disturbance and habitat fragmentation by reducing motorized route densities by approx. 9% compared to Alternative 1.	Reduces disturbance and habitat fragmentation by reducing motorized route densities by approx. 9% compared to Alternative 1.	Reduces disturbance and habitat fragmentation by reducing motorized route densities by approx. 10%, compared to Alternative 1.

Hairy Woodpecker: Many wildlife species depend on snags or dead trees for nesting, roosting, denning, foraging, resting, or shelter. Snag associated species included in this group include both primary and secondary excavators. The hairy woodpecker and pallid bat are species chosen to represent this group, although many other species are snag dependent species including pileated woodpecker, white-headed woodpecker, red-breasted nuthatch, white-breasted nuthatch, and others. In addition, the hairy woodpecker was selected as the MIS on the Tahoe NF, as amended by the Sierra Nevada Forest Bioregion EIS, for the ecosystem component of snags in green forests. Medium (diameter breast height between 15 to 30 inches) and large (diameter breast height greater than 30 inches) snags are most important. The hairy woodpecker uses stands of large, mature trees and snags of sparse to intermediate density; cover is also provided by tree cavities (CDFG 2005). Mature timber and dead snags or trees of moderate to large size are apparently more important than tree species (Siegel and DeSante 1999). Table S-21 summarizes the overall net effect to hairy woodpecker from the proposed actions from motorized route additions, prohibition of cross country travel, wet weather restrictions, and seasonal closures. All of the action alternatives benefit hairy woodpecker habitat.

Table S-21. Hairy Woodpecker - Summary of Overall Net Direct and Indirect Effects

Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Negative impact – cross country travel not prohibited on 637,148 hairy woodpecker habitat acres, affecting 6% hairy woodpecker habitat within a 60 meter zone of influence of existing motorized trails un-authorized for motorized use.	Positive Impact – cross country travel prohibited on 63,148 hairy woodpecker habitat acres, including within 6% hairy woodpecker habitat within a 60 meter zone of influence of existing motorized trails un-authorized for motorized use.	Positive Impact – cross country travel prohibited on 63,148 hairy woodpecker habitat acres, including within 6% hairy woodpecker habitat within a 60 meter zone of influence of existing motorized trails un-authorized for motorized use.	Positive Impact – cross country travel prohibited on 63,148 hairy woodpecker habitat acres, including within 6% hairy woodpecker habitat within a 60 meter zone of influence of existing motorized trails un-authorized for motorized use.	Positive Impact – cross country travel prohibited on 63,148 hairy woodpecker habitat acres, including within 5% hairy woodpecker habitat within a 60 meter zone of influence of existing motorized trails un-authorized for motorized use.	Positive Impact – cross country travel prohibited on 63,148 hairy woodpecker habitat acres, including within 6% hairy woodpecker habitat within a 60 meter zone of influence of existing motorized trails un-authorized for motorized use.	Positive Impact – cross country travel prohibited on 63,148 hairy woodpecker habitat acres, including within 6% hairy woodpecker habitat within a 60 meter zone of influence of existing motorized trails un-authorized for motorized use.

Bald Eagles: On July 9, 2007, USDI Fish and Wildlife Service in a Final Rule announced that the bald eagle would be removed (delisted) from the Federal List of Endangered and Threatened Wildlife in the lower 48 states. Official delisting of the bald eagle occurred 30 days from the date the Final Rule. The bald eagle will continue to be protected by the Bald and Golden Eagle Protection Act and Migratory Bird Treaty Act. Upon delisting, the bald eagle was placed on the Regional Forester’s list of Sensitive Species.

Bald eagles nest near or adjacent to large bodies of water. Within the Tahoe National Forest, twelve bald eagle breeding territories have been identified within the Tahoe NF boundary including National Forest System lands and private lands in recent years. Eight bald eagle territories with recent nesting activity are located on National Forest System lands. Four territories occur on private land at Donner Lake, Fordyce Lake, Spaulding Reservoir, and Milton Reservoir. Table S-22 summarizes the overall net effect to bald eagles from the proposed actions from motorized route additions, prohibition of cross country travel, wet weather restrictions, and seasonal closures. All of the action alternatives benefit bald eagle habitat. The greatest benefits are in Alternatives 4 and 6; the least benefits are in Alternative 5.

Table S-22. Bald Eagle - Summary of Overall Net Direct and Indirect Effects

Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Negative impacts to bald eagle where cross country travel is not prohibited, on 814 to 3,299 acres including on 3.6 miles of existing motorized trails un-authorized for motorized use.	Prohibition of cross country travel benefits bald eagle on 814 to 3,299 acres, including on 3.5 miles of existing motorized trails un-authorized for motorized use.	Prohibition of cross country travel benefits bald eagle on 814 to 3,299 acres, including on 3.6 miles of existing motorized trails un-authorized for motorized use.	Prohibition of cross country travel benefits bald eagle on 814 to 3,299 acres, including on 3.6 miles of existing motorized trails un-authorized for motorized use; and reduced effects from wet weather restrictions.	Prohibition of cross country travel benefits bald eagle on 814 to 3,299 acres, including on 2.8 miles of existing motorized trails un-authorized for motorized use; and reduced effects from wet weather restrictions.	Prohibition of cross country travel benefits bald eagle on 814 to 3,299 acres, including on 3.6 miles of existing motorized trails un-authorized for motorized use; and reduced effects from wet weather restrictions.	Prohibition of cross country travel benefits bald eagle on 814 to 3,299 acres, including on 3.5 miles of existing motorized trails un-authorized for motorized use.

Willow Flycatchers: On the Tahoe NF, the willow flycatcher (*Empidonax traillii* ssp. *traillii* and *E.t. brewsteri*) is designated by the Regional Forester as a Sensitive species. In California, the willow flycatcher is a rare to locally uncommon, summer resident in wet meadow and montane riparian habitats at 600-2500 m (2000-8000 ft) in the Sierra Nevada and Cascade Range (CWHR 2005). Willow flycatcher populations in the Sierra Nevada are considered to be at risk (USDA Forest Service 2001). Historically, willow flycatchers were once common throughout the Sierra Nevada. The current distribution of the willow flycatcher has been drastically reduced compared to historic distributions. A ten year demographic analysis indicate the Sierra Nevada willow flycatcher populations are continuing to decline. With the exception of a few sites, the majority of areas where willow flycatchers have been located support low numbers of breeding territories, and some as low as 1-2 pairs of breeding individuals. Table S-23 summarizes the overall net effect to willow flycatcher from the proposed actions from motorized route additions, prohibition of cross country travel, wet weather restrictions, and seasonal closures. All of the action alternatives benefit willow flycatcher habitat. The greatest benefits are in Alternatives 3 and 4, while the least benefit is in Alternative 5.

Table S-23. Willow Flycatcher - Summary of Overall Net Direct and Indirect Effects

Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Negative effect from continued cross country travel on 22 willow flycatcher meadows on 3.8 miles of existing motorized trails un-authorized for motorized use with continued cross country travel on 3,075 acres.	Benefits willow flycatcher on 3,075 acres, including within 21 meadows on 3.7 miles of existing motorized trails un-authorized for motorized use where cross country travel is prohibited.	Benefits willow flycatcher on 3,075 acres, including within 23 meadows on 3.9 miles of existing motorized trails un-authorized for motorized use where cross country travel is prohibited.	Benefits willow flycatcher 3,075 acres, including within 22 meadows on approx. 3.9 miles of existing motorized trails un-authorized for motorized use.	Benefits willow flycatcher on 3,075 acres, including within 20 meadows on 3.6 miles of existing motorized trails un-authorized for motorized use where cross country travel is prohibited.	Benefits willow flycatcher on 3,075 acres, including within 21 meadows on 3.7 miles of existing motorized trails un-authorized for motorized use where cross country travel is prohibited.	Benefits willow flycatcher on 3,075 acres, including within 22 meadows on 3.8 miles of existing motorized trails un-authorized for motorized use where cross country travel is prohibited.

Great Grey Owls: The Tahoe NF LRMP as amended by the SNFPA ROD (2004) provides management direction to establish and maintain Protected Activity Centers (PACs) to include the forested area and adjacent meadow around all known great gray owl nest stands. The desired condition for meadow vegetation in great gray owl PACs supports a sufficiently large meadow vole population to provide a food source for great gray owls through the reproductive period. Although the Tahoe NF does not currently support known great gray owl nesting pairs, potentially suitable great gray owl meadows were analyzed to determine potential impacts from the Tahoe NF Travel Management Project. Table S-24 summarizes the overall net effect to great grey owl from the proposed actions from motorized route additions, prohibition of cross country travel, wet weather restrictions, and seasonal closures. All of the action alternatives benefit great grey owl habitat. The greatest benefit are in Alternative 3; the least benefits are in Alternative 5.

Table S-24. Great Gray Owl - Summary of Overall Net Direct and Indirect Effects of the Alternatives

Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Negative effect where cross country travel not prohibited on 21 meadows 5.6 miles and within 3,165 acres of meadow habitat.	Positive Effect – Cross country travel Prohibited on 3,165 acres, including within 18 meadow on 5.7 miles.	Positive Effect – Cross country travel. Prohibited on 3,165 acres, including within 21 meadow on 5.8 miles.	Positive Effect – Cross country travel. Prohibited on 3,165 acres, including within 20 meadow on 5.7 miles.	Positive Effect – Cross country travel. Prohibited on 3,165 acres, including within 17 meadow on 5.3 miles.	Positive Effect – Cross country travel. Prohibited on 3,165 acres, including within 18 meadow on 5.7 miles.	Positive Effect – Cross country travel. Prohibited on 3,165 acres, including within 19 meadow on 5.7 miles.

Greater Sandhill Crane: The greater sandhill crane is a California State Threatened species and is listed as Sensitive on the Region 5 Forester’s Sensitive Species List (UDSA Forest Service 1998). California pairs of sandhill cranes generally nest in wet meadow, shallow lacustrine, and fresh emergent wetland habitat, with nests constructed of large mounds of water plants over shallow water (Zeiner et al. 1990, California Department of Fish and Game 1994). Studies in California during 1988 showed water depths averaging 2.3 inches (California Department of Fish and Game 1994). Open meadow habitats are also used (Littlefield 1989). On dry sites, nests are scooped-out depressions lined with grasses (Zeiner et al. 1990). In the Tahoe National Forest, a breeding population of approximately 12 pair occur within Carman Valley, Kyburz Flats, and Perazzo Meadow on the Sierraville Ranger District (Tahoe NF Biological Evaluation). In addition, sandhill cranes are known to breed in the Sardine Valley area on private land north of Stampede Reservoir. Table S-25 summarizes the overall net effect to sandhill crane from the proposed actions from motorized route additions, prohibition of cross country travel, wet weather restrictions, and seasonal closures. All of the action alternatives benefit greater sandhill crane habitat. The greatest benefits are in Alternatives 3, 4, 5, 6 and 7. The least benefits are in Alternative 5.

Table S-25. Sandhill Crane - Summary of Overall Net Direct and Indirect Effects of the Alternatives

Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Negative effect at Kyburz, Perazzo, and Carman Valley, and Stampede Reservoir where cross country travel continued.	Positive effect at Kyburz, Perazzo, and Carmen Valley where cross country travel prohibited, but negative effects at Stampede Reservoir.	Positive effect at Kyburz, Perazzo, and Carmen Valley where cross country travel prohibited.	Positive effect at Kyburz, Perazzo, and Carmen Valley where cross country travel prohibited.	Positive effect at Kyburz, Perazzo, and Carmen Valley where cross country travel prohibited.	Positive effect at Kyburz, Perazzo, and Carmen Valley where cross country travel prohibited.	Positive effect at Kyburz, Perazzo, and Carmen Valley where cross country travel prohibited.

Yellow Warbler: The yellow warbler was selected as the MIS for riparian habitat in the Sierra Nevada. The Sierra Nevada Forest MIS Report and the Tahoe NF Motorized Project-level MIS Report are incorporated by reference. The yellow warbler is usually found in riparian deciduous habitats in summer (cottonwoods, willows, alders, and other small trees and shrubs typical of low, open-canopy riparian woodland) (CDFG 2005). Yellow warbler is dependent on both meadow and non-meadow riparian habitat in the Sierra Nevada (Siegel and DeSante 1999). On the Tahoe NF, CWHR montane riparian habitat (MRI) provides suitable habitat for the yellow warbler. Table S-26 summarizes the overall net effect to the

yellow warbler from the proposed actions from motorized route additions, prohibition of cross country travel, wet weather restrictions, and seasonal closures. All of the action alternatives benefit yellow warbler habitat. The greatest benefits are in Alternatives 3, 4 and 7; the least benefits in Alternative 5.

Table S-26. Yellow Warbler - Summary of Overall Net Direct and Indirect Effects

Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Negative effect on 10 acres of yellow warbler habitat.	Positive effect on 9.6 acres of yellow warbler habitat.	Positive effect on 10 acres of yellow warbler habitat.	Positive effect on 10 acres of yellow warbler habitat.	Positive effect on 9.4 acres of yellow warbler habitat.	Positive effect on 9.6 acres of yellow warbler habitat.	Positive effect on approx. 10 acres of yellow warbler habitat.

Lahontan cutthroat trout: The Lahontan cutthroat trout (LCT) was listed by the U.S. Fish and Wildlife Service (USFWS) as an endangered species in 1970 (Federal Register Vol. 35, p. 13520). The listing was reclassified to threatened status in 1975 to facilitate recovery and management efforts and authorize regulated angling (Federal Register Vol. 40, p. 29864). Currently, no Critical Habitat has been designated for the LCT (USFWS 1995). Table S-27 summarizes the overall net effect to Lahontan cutthroat trout from the proposed actions from motorized route additions, prohibition of cross country travel, wet weather restrictions, and seasonal closures. All of the action alternatives benefit LCT habitat. The greatest benefits are in Alternatives 4, 5 and 6. The least benefits are in Alternatives 2, 3 and 7.

Table S-27. LCT 7th Field Watersheds – Summary of Direct, Indirect, and Cumulative Effect of Proposed Actions as Measured by Native Surfaced, Motorized Stream Crossings

Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Cross country travel continues on 2,141 LCT RCA acres, including on 10 stream crossings unauthorized to motorized use. Motorized travel on 39 native surfaced, crossings. No additional protection to occupied LCT streams from wet weather restrictions.	Cross country travel prohibited on 2,141 LCT RCA acres, including on 9 stream crossing unauthorized to motorized use. 30 NFTS native surfaced, crossings available for motorized use. No additional protection to occupied LCT streams from wet weather restrictions.	Cross country travel prohibited on 2,141 LCT RCA acres, including on 10 stream crossings unauthorized to motorized use. 29 NFTS native surfaced, crossings available for motorized use. No additional protection to occupied LCT streams from wet weather restrictions.	Cross country travel prohibited on 2,141 LCT RCA acres, including on 10 stream crossing unauthorized to motorized use. 29 NFTS native surfaced, crossings available for motorized use. Reduced sedimentation risk to occupied LCT streams from wet weather restrictions.	Cross country travel prohibited on 2,141 LCT RCA acres, including on 9 stream crossing unauthorized to motorized use. 30 NFTS native surfaced, crossings available for motorized use. Reduced sedimentation risk to occupied LCT streams from wet weather restrictions.	Cross country travel prohibited on 2,141 LCT RCA acres, including on 9 stream crossing unauthorized to motorized use. 30 NFTS native surfaced, crossings available for motorized use. Reduced sedimentation risk to occupied LCT streams from wet weather restrictions.	Cross country travel prohibited on 2,141 LCT RCA acres, including on 10 stream crossing unauthorized to motorized use. 29 NFTS native surfaced, crossings available for motorized use. No additional protection to occupied LCT streams from wet weather restrictions.

Lahontan Lake tui chub: The Lahontan Lake tui chub (*Gila bicolor pectinifer*) is listed as Sensitive on the Region 5 Forester’s Sensitive Species List (USDA Forest Service 1998). The Lahontan Lake tui chub are a cyprinid subspecies found in Lake Tahoe and Pyramid Lake (Nevada) which are connected to each other by the Truckee River and in nearby Walker Lake (Nevada). The actual presence of the Lahontan Lake tui chub on the Tahoe NF has not been confirmed or verified. Although presence has not been confirmed, this analysis assumes the species is present within Boca, Stampede and Prosser

Reservoirs. Therefore, the analysis for this species was conducted within the three 7th field watersheds within the Prosser Creek Reservoir HUC7, Stampede Reservoir HUC7, and Boca Reservoir HUC7, which includes the three reservoirs and the streams and tributaries that drain into and out of them. In addition, to assess a broader and more inclusive analysis of potential indirect effects, RCA route density and stream crossing density were analyzed within twelve 7th field watersheds which include the three reservoirs and the streams and tributaries that flow into these reservoirs. Table S-28 summarizes the overall net effect to Lahontan lake tui chub from the proposed actions from motorized route additions, prohibition of cross country travel, wet weather restrictions, and seasonal closures. All of the action alternatives benefit Lahontan lake tui chub habitat. The greatest benefits are in Alternatives 4, 5 and 6. The least benefits are in Alternative 5.

Table S-28. Lahontan Lake Tui Chub 7th Field Watersheds – Summary of Direct, Indirect, and Cumulative Effect of Proposed Actions as Measured by Native Surfaced, Motorized Stream Crossing Numbers

Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Cross country travel continues on 9,689 tui chub RCA acres, including on 42 native surfaced crossings unauthorized to motorized use. 117 native surfaced, stream crossings (75 NFTS, 42 unauthorized) No additional protection to tui chub habitat from wet weather restrictions.	Cross country travel prohibited on 9,689 tui chub RCA acres, including on 36 native surfaced crossings unauthorized to motorized use. 81 NFTS stream crossings available to motorized use. Motorized impacts from Open Reservoir Areas potentially increase sedimentation risk to tui chub habitat within Prosser, Stampede, and Boca reservoirs. No additional protection to tui chub habitat from wet weather restrictions.	Cross country travel prohibited on 9,689 tui chub RCA acres, including on 42 native surfaced crossings unauthorized to motorized use. 75 NFTS stream crossings available to motorized use. No additional protection to tui chub habitat from wet weather restrictions.	Cross country travel prohibited on 9,689 tui chub, RCA acres including on 39 native surfaced crossings unauthorized to motorized use. 78 NFTS stream crossings available to motorized use. Reduced sedimentation risk to tui chub habitat from wet weather restrictions.	Cross country travel prohibited on 9,689 tui chub, including on 34 native surfaced crossings unauthorized to motorized use. 83 NFTS stream crossings available to motorized use. Reduced sedimentation risk to tui chub habitat from wet weather restrictions.	Cross country travel prohibited on 9,689 tui chub, including on 36 native surfaced crossings unauthorized to motorized use. 81 NFTS stream crossings available to motorized use. Reduced sedimentation risk to tui chub habitat from wet weather restrictions.	Cross country travel prohibited on 9,689 tui chub, including on 39 native surfaced crossings unauthorized to motorized use. 78 NFTS stream crossings available to motorized use. No additional protection to tui chub habitat from wet weather restrictions.

Red-legged Frog: The U. S Fish and Wildlife Service listed the California red-legged frog (*Rana aurora draytonii*) (CRLF) as federally threatened in 1996. The western portion of the Tahoe National Forest falls within the Sierra Nevada recovery unit (Recovery Unit #1) (USDI Fish and Wildlife Service 2002). The Plumas and Tahoe National Forests share Core Area #2 Yuba River-South Fork Feather River located in Yuba County (USDI Fish and Wildlife Service 2002). This core area includes a portion of the North Yuba River around New Bullards Bar Reservoir. Recovery actions would be focused within core areas. No critical habitat is designated on the Tahoe National Forest (USDI Fish and Wildlife Service 2001) (Federal Register 66 (49): 14626-14758).

There are no known occupied California red-legged frog sites on lands administered by the Tahoe NF. Proposed motorized route and area additions to the NFTS do not directly, indirectly, or cumulatively impact the California red-legged frog. None of the proposed route or area additions would adversely affect any occupied California red-legged frog sites adjacent to or within the boundary of the Tahoe NF.

Foothill Yellow-Legged Frog: The foothill yellow-legged frog (*Rana boylei*) (FYLF) is listed as Sensitive on the Region 5 Forester’s Sensitive Species List (USDA Forest Service 1998). Foothill yellow-legged frogs are associated with streams in a variety of habitats including riparian, mixed conifer, and wet meadow types (Stebbins 1985). To varying degrees depending on life stage, their habitat requirements are closely linked to seasonal variation in stream habitats and comprise 3 categories: breeding and rearing habitat, non-breeding active-season habitat; and over wintering habitat. Breeding and rearing habitat is located in gently flowing water. Foothill yellow-legged frogs breed at locations with substrates and channel shapes that provide suitable velocities and depths over a relatively broad range of discharge volumes (Kupferberg 1996a). These frogs prefer partial shade, shallow riffles, and cobble sized or greater substrate (Hayes and Jennings 1988). Occasionally, this species is also found in other riparian habitats, including moderately vegetated backwaters, isolated pools, (Hayes and Jennings 1988, pers. obs.), slow moving rivers with mud substrates (Fitch 1938). During breeding and summer, FYLF are rarely encountered far from permanent water. During the winter, frogs have been observed in abandoned rodent burrows and under logs as far as 100 meters from a stream (Zeiner et al. 1988). Table S-29 summarizes the overall net effect to foothill yellow legged frog from the proposed actions from motorized route additions, prohibition of cross country travel, wet weather restrictions, and seasonal closures. All of the action alternatives benefit FYLF habitat. The greatest benefits are in Alternatives 4, 5 and 6. The least benefits are in Alternative 2.

Table S-29. Foothill Yellow-legged Frog 7th Field Watersheds – Summary of Direct, Indirect, and Cumulative Effect of Proposed Actions as Measured by Native Surfaced, Motorized Crossings

Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Motorized cross country travel continues on 34,092 RCA acres, including on 228 native surfaced, stream crossings unauthorized for motorized use. Continued use on 639 motorized crossings (411 NFTS, 228 unauthorized). No additional protection to FYLF habitats from wet weather seasonal restrictions.	Motorized cross country travel prohibited on 34,092 RCA acres, including on 139 native surfaced, stream crossings. 500 NFTS native surfaced, crossings available for motorized use. No additional protection to FYLF habitats from wet weather seasonal restrictions.	Motorized cross country travel prohibited on 34,092 RCA acres, including on 228 native surfaced, stream crossings 411 NFTS native surfaced, crossings available for motorized use. No additional protection to FYLF habitats from wet weather seasonal restrictions.	Motorized cross country travel prohibited on 34,092 RCA acres, including on 221 native surfaced, stream crossings 418 NFTS native surfaced, crossings available for motorized use. Reduced sedimentation risk to FYLF habitats from wet weather seasonal restrictions.	Motorized cross country travel prohibited on 34,092 RCA acres, including on 96 native surfaced, stream crossings 543 NFTS native surfaced, crossings available for motorized use. Reduced sedimentation risk to FYLF habitats from wet weather seasonal restrictions.	Motorized cross country travel prohibited on 34,092 RCA acres, including on 194 native surfaced, stream crossings 445 NFTS native surfaced, crossings available for motorized use. Reduced sedimentation risk to FYLF habitats from wet weather seasonal restrictions.	Motorized cross country travel prohibited on 34,092 RCA acres, including on 225 native surfaced, stream crossings 414 NFTS motorized crossings available for motorized use. No additional protection to FYLF habitats from wet weather seasonal restrictions.

Mountain Yellow-legged Frog: The mountain yellow-legged frog (MYLF) is listed as Sensitive on the Region 5 Forester's Sensitive Species List (USDA Forest Service 1998). Mountain yellow-legged frogs occur in the Sierra Nevada from 4,500 feet to over 12,000 feet elevation (Jennings and Hayes 1994). Previously the mountain yellow-legged frog in the Sierra Nevada was considered to be one species; *Rana muscosa*. Recent genetic studies indicate mountain yellow-legged frogs in the Sierra Nevada are comprised of two species: *R. sierrae*, with a distribution in the northern and central Sierra Nevada, and *R. muscosa*, with a distribution in the southern Sierra Nevada and southern California. The contact zone for these two newly recognized species is in the vicinity of Mather Pass and the Monarch Divide, Fresno County (Vredenburg et al. 2007).

Mountain yellow-legged frogs in the Sierra Nevada inhabit high mountain lakes, ponds, tarns, and streams, largely in areas that were glaciated (Zweifel 1955, In Lannoo 2005). Mountain yellow-legged frogs are seldom far from water, although they have been observed moving overland to disperse to other pond habitats. Typically, mountain yellow-legged frogs prefer well illuminated, sloping banks of meadow streams, riverbanks, isolated pools, and lake borders with vegetation that is continuous to the water's edge (Martin 1992, Zeiner et al. 1988). Vredenburg et al. (2004) found that *R. muscosa (sensu stricto)* tended to use still water habitats more frequently than *R. sierrae*, but it is unclear whether this difference is the result of still water habitat being more frequent within the former's geographic range or an actual phylogenetic difference in habitat selection behavior.

The Tahoe National Forest database has records for mountain yellow-legged frogs in 79 locations. Most of these observations were of individual frogs. Only 49 of these sightings are considered recent (Since 1980). Mountain yellow-legged frogs have been observed in both stream and pond habitats on the forest. The largest populations observed in recent surveys (1993-2002) were those containing 5 adults (Lyon Bog, Rattlesnake Creek, and Poorman Creek). The species appears to have disappeared from a significant number of historic locations within the Tahoe National Forest and is in very low abundance where it still persists. Table S-30 summarizes the overall net effect to mountain yellow-legged frog from the proposed actions from motorized route additions, prohibition of cross country travel, wet weather restrictions, and seasonal closures. All of the action alternatives benefit MYLF habitat. The greatest benefits are in Alternatives 4, 5 and 6. The least benefits are in Alternative 2.

Table S-30. Mountain Yellow-legged Frog 7th Field Watersheds – Summary of Direct, Indirect, and Cumulative Effect of Proposed Actions as Measured by Native Surfaced, Motorized Crossings

Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Motorized cross country travel continues on 22,717 RCA acres, including on 84 native surfaced, stream crossings.	Motorized cross country travel prohibited on 22,717 RCA acres, including on 42 native surfaced, stream crossings.	Motorized cross country travel prohibited on 22,717 RCA acres, including on 84 native surfaced, stream crossings.	Motorized cross country travel prohibited on 22,717 RCA acres, including on 83 native surfaced, stream crossings.	Motorized cross country travel prohibited on 22,717 RCA acres, including on 41 native surfaced, stream crossings.	Motorized cross country travel prohibited on 22,717 RCA acres, including on 69 native surfaced, stream crossings.	Motorized cross country travel prohibited on 22,717 RCA acres, including on 10 native surfaced, stream crossings.
Motorized use continues on 383 native surfaced, crossings (299 NFTS and 84 unauthorized)	358 NFTS crossings available for motorized use.	299 NFTS crossings available for motorized use.	300 NFTS crossings available for motorized use.	359 NFTS crossings available for motorized use.	331 NFTS crossings available for motorized use.	300 NFTS crossings available for motorized use.
No additional protection to MYLF habitats from wet weather seasonal restrictions.	No additional protection to MYLF habitats from wet weather seasonal restrictions.	No additional protection to MYLF habitats from wet weather seasonal restrictions.	Reduced sedimentation risk to MYLF habitats from wet weather seasonal restrictions.	Reduced sedimentation risk to MYLF habitats from wet weather seasonal restrictions.	Reduced sedimentation risk to MYLF habitats from wet weather seasonal restrictions.	No additional protection to MYLF habitats from wet weather seasonal restrictions.

Northwestern Pond Turtle: The northwestern pond turtle (*Clemmys marmorata marmorata*) (NWPT) is listed as Sensitive on the Region 5 Forester’s Sensitive Species List (USDA Forest Service 1998). The northwestern pond turtle ranges approximately from the American River northward to the vicinity of Puget Sound with an elevational distribution from sea level to 6,000 feet (Stebbins 1972, In Lannoo 2005). Recent genetic studies support the traditional morphological subdivision of the western pond turtle into the northern subspecies, *Clemmys marmorata marmorata* (northwestern pond turtle), and the southern subspecies, *Clemmys marmorata pallida* (Gray 1995).

Habitat for the NWPT, historically, occurs in a variety of both permanent and intermittent aquatic habitats west of the Sierra-Cascade crest. This turtle is often restricted to areas near the banks or in quiet backwaters where the current is relatively slow and basking sites and refugia are available. Currently most populations exist in smaller streams, usually in montane areas. These streams may be either permanent or intermittent, but permanent streams support larger populations. Western pond turtles occur in a variety of water courses directly or indirectly modified by man, such as reservoirs, canals, excavated farm ponds, and mill ponds. This species is considered omnivorous. Aquatic plant material, beetles and aquatic invertebrates have been reported among their food (Stebbins 1972 and Nussbaum et al. 1983, In Lannoo 2005). Northwestern pond turtles have been observed at less than 20 locations within the Tahoe NF. Five of these locations are on National Forest system land and the remaining are on private land or on Bureau of Land Management administered lands. All the Tahoe NF reported sightings are from the Yuba River drainage associated with pond habitat. Table S-31 summarizes the overall net effect to NWPT from the proposed actions from motorized route additions, prohibition of cross country travel, wet weather restrictions, and seasonal closures. All of the action alternatives benefit NWPT habitat. The greatest benefits are in Alternatives 4, 5 and 6. The least benefits are in Alternative 2.

Table S-31. Northwestern Pond Turtle 7th Field Watersheds – Summary of Direct, Indirect, and Cumulative Effect of Proposed Actions as Measured by Native Surfaced, Motorized Crossings

Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Motorized cross country travel continues on 7,986 RCA acres, including on 44 native surfaced, stream crossings.	Motorized cross country travel prohibited on 7,986 RCA acres, including on 34 native surfaced, stream crossings.	Motorized cross country travel prohibited on 7,986 RCA acres, including on 44 native surfaced, stream crossings	Motorized cross country travel prohibited on 7,986 RCA acres, including on 42 native surfaced, stream crossings	Motorized cross country travel prohibited on 7,986 RCA acres, including on 20 native surfaced, stream crossings	Motorized cross country travel prohibited on 7,986 RCA acres, including on 34 native surfaced, stream crossings	Motorized cross country travel prohibited on 7,986 RCA acres, including on 44 native surfaced, stream crossings
Motorized use continues on 121 native surfaced, crossings (77 NFTS and 44 unauthorized)	87 NFTS crossings available for motorized use.	77 NFTS crossings available for motorized use.	79 NFTS crossings available for motorized use.	101 NFTS crossings available for motorized use.	87 NFTS crossings available for motorized use.	77 NFTS crossings available for motorized use.
No additional protection to NWPT habitats from wet weather seasonal restrictions.	No additional protection to NWPT habitats from wet weather seasonal restrictions.	No additional protection to NWPT habitats from wet weather seasonal restrictions.	Reduced sedimentation risk to NWPT habitats from wet weather seasonal restrictions.	Reduced sedimentation risk to NWPT habitats from wet weather seasonal restrictions.	Reduced sedimentation risk to NWPT habitats from wet weather seasonal restrictions.	No additional protection to NWPT habitats from wet weather seasonal restrictions.

Great Basin ramshorn snail: The Great Basin ramshorn snail (GBRS) is listed as Sensitive on the Region 5 Forester’s Sensitive Species List (USDA Forest Service 1998). The Great Basin ramshorn snail occurs in a highly restrictive distribution but is locally abundant. Historically, the Great Basin ramshorn snail occurred within the lakes and larger, slow streams in and around the northern Great Basin. In California the snail was known to occur in six local drainages in which the species probably survives in four of these drainages.

The Great Basin ramshorn snail occurs in larger lakes and slow rivers including larger spring sources and spring-fed creeks. These snails characteristically burrow in soft mud and may be invisible even when abundant (Taylor 1981). The Great Basin ramshorn snail can occur with *Pisidium ultramontanum*, *Lanx klamathensis*, or several other endemic mollusks (Frest and Johannes 1993). It also occurs with *Juga acutifilosa* and *Fluminicola seminalis*. Habitat requirements include cold highly oxygenated water, muddy substrate, and slow stream flow. Springs are preferred, but the snail will use river margins. Soft sediments are preferred. Threats to snails have been attributed to water diversions and water pollution. Mitigations for fish species, such as adding spawning gravels, may harm this species by smothering soft mud habitats. Table S-32 summarizes the overall net effect to wolverine and the Sierra Nevada red fox from the proposed actions from motorized route additions, prohibition of cross country travel, wet weather restrictions, and seasonal closures. All of the action alternatives benefit GBRS habitat. The greatest benefits are in Alternatives 4, 5 and 6 while the least benefit is in Alternative 2.

Table S-32. Great Basin ramshorn snail 7th Field Watersheds – Summary of Direct, Indirect, and Cumulative Effect of Proposed Actions as Measured by Native Surfaced, Motorized Crossings

Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Motorized cross country travel continues on 12,359 RCA acres, including on 74 native surfaced, stream crossings.	Motorized cross country travel prohibited on 12,359 RCA acres, including on 44 native surfaced, stream crossings.	Motorized cross country travel prohibited on 12,359 RCA acres, including on 74 native surfaced, stream crossings.	Motorized cross country travel prohibited on 12,359 RCA acres, including on 69 native surfaced, stream crossings.	Motorized cross country travel prohibited on 12,359 RCA acres, including on 40 native surfaced, stream crossings.	Motorized cross country travel prohibited on 12,359 RCA acres, including on 45 native surfaced, stream crossings.	Motorized cross country travel prohibited on 12,359 RCA acres, including on 67 native surfaced, stream crossings.
Motorized use continues on 281 native surfaced, crossings (207 NFTS and 74 unauthorized)	237 NFTS crossings available for motorized use.	207 NFTS crossings available for motorized use.	212 NFTS crossings available for motorized use.	241 NFTS crossings available for motorized use.	236 NFTS crossings available for motorized use.	214 NFTS crossings available for motorized use.
No additional protection to GBRS habitats from wet weather seasonal restrictions.	No additional protection to GBRS habitats from wet weather seasonal restrictions.	No additional protection to GBRS habitats from wet weather seasonal restrictions.	Reduced sedimentation risk to GBRS habitats from wet weather seasonal restrictions.	Reduced sedimentation risk to GBRS habitats from wet weather seasonal restrictions.	Reduced sedimentation risk to GBRS habitats from wet weather seasonal restrictions.	No additional protection to GBRS habitats from wet weather seasonal restrictions.

Recreation

Off Highway Vehicle Recreation Opportunities: For environmental consequences the alternatives will be compared in general for all Off Highway Vehicle (OHV) recreation. The alternatives are listed in order of which alternative provides the most OHV opportunities descending to the least OHV opportunities. Alternative 1 provides the most OHV recreation opportunities followed by Alternative 5, 2, 6, 7, 4, and the least opportunities provided by Alternative 3. Tables S-33 through S-36 summarizes the OHV opportunities by alternative.

Table S-33. Miles of OHV Trail Opportunities by Alternatives

Route Type	Time of Year	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Trail open to high clearance trail vehicles	All Year	184.5	226.9	184.5				208.2
Trail open to high clearance trail vehicles	Seasonally	5.3	6.5	5.3	203.3	434.1	227.1	6.4
Subtotal		189.8	233.3	189.8	203.3	434.1	227.1	214.6
Trails open to ATVs and motorcycles	All Year	17.5	20.4	17.5	0.0	0.0	0.0	20.4
Trails open to ATVs and motorcycles	Seasonally	0.0	0.0	0.0	20.4	29.3	29.3	0.0
Subtotal		17.5	20.4	17.5	20.4	29.4	29.4	20.4
Trails open to motorcycles	All Year	126.6	152.4	126.6	0.0	0.0	0.0	143.9
Trails open to motorcycles	Seasonally	0.8	0.8	0.8	141.6	154.3	148.6	144.7
Subtotal		127.4	153.2	127.4	141.6	154.3	148.6	144.7
Un-authorized routes remaining open		1388.9	0	0	0	0	0	0
Total All Routes		1,596.2	253.7	207.3	223.7	463.5	256.5	235.0

Table S-34. Miles of OHV Road Opportunities by Alternative

Class of Vehicles Allowed	Time of Year	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Roads open to all vehicles	All Year	1786.1	2174.6	1786.1	0	229.9	75.6	1789.7
Roads open to all vehicles	Seasonally	110.1	141.4	110.3	1899.7	2086.4	2065.6	110.0
Subtotal		1,896.2	2315.9	1,896.2	1899.7	2316.3	2141.2	1899.7
Roads open to highway legal vehicles only	All Year	601.7	213	601.7	598.3	213.1	369.9	598.3
Roads open to highway legal vehicles only	Seasonally	31.1	0	31.1	31.1	0	18	31.1
Subtotal		632.8	213.1	632.8	632.8	213.1	387.9	629.4

Table S-35. Acres of OHV Open Area Opportunities by Alternative

Area	Type of Use	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Prosser Pits	Open Area	27	27	27	27	27	27	27
Greenhorn Creek	Open Area	27	27					
Eureka Diggings	Open Area	60	60					
Boca, Prosser, and Stampede Reservoirs	Shoreline access on dry soils	2,589	2,589					
Total Acres		2,703	2,703	27	27	54	27	27

Table S-36. Acres Used for OHV Cross Country Travel by Alternative

Type of Use	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Closed by Forest Order	86,500	804,400	804,400	804,400	804,400	804,400	804,400
Un-authorized use occurs seasonally	156,500	0	0	0	0	0	0
Un-authorized use occurs year round	561,400	0	0	0	0	0	0

Non-motorized Recreation Opportunities: There are several areas where non-motorized users are concerned about OHV use directly or indirectly affecting their activities through noise and trail wear and tear. The key areas of concern identified are East and West Yuba areas, Castle Peak area, Grouse Ridge Closure Area, and TKN-M1. In East and West Yuba the non-motorized public is interested in seeing trails available for hiking that are not heavily used by motor vehicles or mountain bikes. Alternatives 3 and 4 meet this need the best by not providing additional motorized trails in the East and West Yuba Area. Mountain bike use on certain trails in East Yuba is so heavy that motorcycle use is limited because of the constant stopping and slowing down to allow mountain bikes to pass. In the Castle Peak area, both motorized and non-motorized users are drawn to the scenic qualities and the opportunity for solitude. Some routes in alternatives 2, 5, 6 and 7 are proposed for addition in the Grouse Ridge area. TKN-M1 is a 3.6 mile trail currently used by mountain bikes and motorcycles. Under all alternatives except alternative 3, it is proposed to be designated as a motorcycle trail. Table S-37 displays the non-motorized recreation opportunities by alternative.

Table S-37. Non-motorized recreation opportunities

Trail Category	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Trails open to motorized and non motorized users	334.7	407.0	334.7	365.3	617.8	405.1	379.7
Trails open only to non-motorized users	286.3	1,111.1	1,183.3	1,152.8	900.2	1,112.9	1,138.3
Trails open only to hikers and equestrians (No mountain bikes allowed)	145.1	145.1	145.1	145.1	145.1	145.1	145.1
Un-authorized trails open to motorized and non-motorized users	897.0	0	0	0	0	0	0

Changes in Class of Vehicles: Alternatives 2 and 5 provide the best OHV opportunities by providing an additional 481.2 miles of roads where unlicensed vehicles can operate. Without these changes, it would be more difficult for unlicensed vehicles to drive without transporting their OHV by trailer. Alternative 6 increases opportunities for unlicensed vehicles an additional 276 miles. The remaining alternatives; 1, 3, 4 and 7 do not provide significant additional opportunities for unlicensed vehicles and therefore provide less OHV opportunities. Table S-38 displays the amount of mileage changed from “Open to Highway Legal Vehicles Only” to Open to All Vehicles.”

Table S-38. Changes in class of vehicles from “Open to Highway Legal Vehicles Only” to “Open to all Vehicles”

Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
0 miles	481.2 miles	0 miles	3.4 miles	481.2 miles	276.4 miles	3.4 miles

Transportation

Public Safety: Alternatives 2 and 5 present the greatest risks to public safety, as they contain the most miles where motorized mixed use would occur on roads with either high crash severities or high crash probabilities or both. Alternative 6 follows with some roads evaluated as having high crash severities and no roads with high probabilities. It also has fewer roads that are inconsistent with the CVC than alternatives 2 and 5. The remaining alternatives, 1, 3, 4, and 7, all have less than 3.4 miles of road with a change in class from “Open to Highway Legal Vehicles Only” to “Open to All Vehicles.” Table S-39 displays the risks to public safety by alternative.

Table S-39. Summary comparison of alternatives with respect to public safety

	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Miles of passenger car roads changed to high clearance roads	0	285.6	0	3.4	285.6	285.6	3.4
Miles of routes unauthorized for motor vehicles added as trails	0	66.3	0	27.0	276.6	64.1	45.1
Miles of Passenger Car Road with Change in Allowed Classes of Vehicles from “Highway Legal Only” to “All Vehicles”	0	481.2	0	3.4	481.2	276.4	3.4
Miles of passenger car roads with high crash severity MMU	0	247.7	0	0	247.7	86.1	0
Miles of passenger car roads with high crash probability MMU	0	28.0	0	0	28.0	0	0
Number of MMU roads consistent with California Vehicle Code	0	80	0	1	80	69	1
Number of MMU roads not consistent with California Vehicle Code	0	12	0	0	12	9	0

Affordability: All alternatives require over \$20 million annually to fully maintain the road and trail system. Alternatives 1, 3, 4, and 7 all cost the most at over \$28 million because little or no roads will be downgraded from passenger car to high clearance. Continuing to maintain these roads for passenger cars presents a significant expense. Alternatives 2, 5, and 6 all cost approximately \$23 million annually to maintain, or approximately \$5 million less than the other alternatives.

Wet weather seasonal restrictions on roads will decrease road maintenance needs, but the amount is difficult to quantify. Based on the Tahoe National Forest road equipment operator’s field experience, if a road is bladed in the fall and motorized vehicles do not use the road again until late spring, the road will not need to be bladed the following year. Therefore, under ideal conditions, the blading frequency could be increased from annually to once every two years. The affordability of the different alternatives is summarized in Table S-40.

Table S-40. Summary comparison of alternatives with respect to affordability

	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Total estimated cost (millions)	\$28.2	\$22.8	\$28.3	\$28.2	\$23.1	\$22.7	\$28.3

Roadless Areas

The Tahoe National Forest has eleven inventoried roadless areas totaling 200,675 acres including private land in holdings. These inventoried roadless areas were identified in the late 1970s during the Roadless Area Review and Evaluation (RARE I and RARE II). The character and amount of roads, private land, and motorized trails varies greatly by roadless area. Both Castle Peak and Duncan Canyon inherited roads through land purchase or exchange that were built while in private ownership. The Middle Yuba has a lot of private land and road access to private land. East and West Yuba have some primitive 4WD routes and several motorcycle system and non-system trails. The North Fork of the American has one private access road and two minor user created roads in the entire 50,669 acres.

Motorized use in generally has an adverse effect on roadless character. Conversely, reducing the amount of motorized use within a roadless area has a positive effect on roadless character. All of the routes currently being considered for motorized use already are available motorized use. The effect of this motorized use is already part of the existing situation. Prohibiting motorized use on these routes will improve the roadless character within the Inventoried Roadless Areas (IRA). All of the action alternatives improve the roadless character of Inventoried Roadless Areas by reducing the amount of roads and trails available for motorized use. Routes prohibited to motorized use will be available for non-motorized use. This non-motorized use, especially by mountain bikes and equestrians, can also adversely affect roadless character, but to a significantly lesser degree than motorized use. Table S-41 summarizes the total effects on all roadless areas cumulatively.

Table S-41. Total Roads/Trails/Areas in Inventoried Roadless Areas by Alternative

Road and Trail Category	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Cross Country Travel							
Acres	109,103	0	0	0	0	0	0
Motorized trails un-authorized for motorized use	54.1	0	0	0	0	0	0
National Forest Transportation System Roads	33.7	33.7	33.7	33.7	33.7	33.7	33.7
Subtotal NFS Motorized Trails	95.6	104.4	95.6	95.6	111	103.5	102.9
State, County or other jurisdiction roads	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Roads/trails on private land	22.6	22.3	22.6	22.6	22.3	22.3	22.3
Total Motorized	206.4	160.9	152.3	152.3	167.5	160.0	159.4
Total Non-Motorized	152.3	197.7	206.4	206.4	191.1	198.7	199.3

Wild & Scenic Rivers

The North Fork of the American Wild River is a federally designated Wild and Scenic River. With a Wild classification it excludes motorized vehicle use. The South Yuba River is recommended for federal designation with a recreation and scenic classification. The South Yuba River is presently a State designated river with recreation and scenic classification. The interagency South Yuba River Management Plan directs that motorized use remain on designated routes and precludes cross country travel. The North Yuba River, its tributary Canyon Creek, and Sagehen are recommended for federal designation. Motorized trails are not automatically excluded from these river corridors but effects to outstandingly remarkable values and river classifications need to be evaluated. All of the action alternatives maintain or enhance the outstandingly remarkable values of each Wild and Scenic River. Tables S-42 through S-46 summarizes the amount of roads and trails within Wild and Scenic Rivers by alternative.

Table S-42. Miles of Roads and Trails within the North Fork American River by Alternative

	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Gross Country Travel							
Acres	0	0	0	0	0	0	0
Motorized trails un-authorized for motorized use	0	0	0	0	0	0	0
Roads open to all vehicles	0	0	0	0.1	0.1	0.1	0
Seasonal Closure							
Roads open to all vehicles	0.1	0.1	0.1	0	0	0	0.1
Open Year Around							
Subtotal NFS Roads	0.1						
Open Year Around	17.0	17.0	17.0	17.0	17.0	17.0	17.0
Trails open only to non-motorized users	17.0						
Open Year Around							
Subtotal Non-Motorized	17.0						

Table S-43. Miles of Roads and Trails within the North Yuba River by Alternative

	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Gross Country Travel							
Acres	10,634	0	0	0	0	0	0
Motorized trails un-authorized for motorized use	10.3	0	0	0	0	0	0
Roads open to highway legal vehicles only	9.8	5.9	9.8	9.8	5.9	7.9	9.8
Open Year Around							
Roads open to all vehicles	0.0	0.0	0.0	0.0	3.8	3.8	0.0
Seasonal Closure							
Roads open to all vehicles	3.5	7.4	3.5	3.5	3.6	1.5	3.5
Open Year Around							
Subtotal NFS Roads	13.3						
Seasonal Closure	0.0	0.0	0.0	2.7	2.7	2.7	0.0
Trails open to high clearance trail vehicles	2.7	2.7	2.7	2.7	0.0	0.0	2.7
Open Year Around							
Trails open to ATV's and motorcycles	0.0	0.0	0.0	0.7	0.7	0.7	0.0
Seasonal Closure							
Trails open to ATV's and motorcycles	0.7	0.7	0.7	0.0	0.0	0.0	0.7
Open Year Around							
Trails open to motorcycles	0.0	0.0	0.0	2.4	2.4	2.4	0.0
Seasonal Closure							
Trails open to motorcycles	2.4	2.4	2.4	0.0	0.0	0.0	2.4
Open Year Around							
Subtotal NFS Motorized Trails	5.9						

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	Open Year Around	43.9	43.9	43.9	43.9	43.9	43.9	43.9	43.9
State, County or other jurisdiction roads	Open Year Around	43.9	43.9	43.9	43.9	43.9	43.9	43.9	43.9
Roads/trails on private land	Open Year Around	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3
	Total Motorized	85.7	75.4						
Roads/trails closed to motorized users	Seasonal Closure	0.0	10.3	10.3	10.3	10.3	10.3	10.3	10.3
Trails open only to non-motorized users	Open Year Around	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Trails open only to hikers and equestrians (No mountain bikes allowed)	Open Year Around	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
	Subtotal Non-Motorized	9.7	20.0						

Table S-44. Miles of Roads and Trails within Sagehen Creek by Alternative

	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Cross Country Travel							
Acres	2,165	0	0	0	0	0	0
Motorized trails –un-authorized for motorized use	4.8	0	0	0	0	0	0
Roads open to highway legal vehicles only							
Seasonal Closure	2.0	0.0	2.0	2.0	0.0	0.0	2.0
Roads open to highway legal vehicles only							
Open Year Around	0.1	0.0	0.1	0.1	0.0	0.0	0.1
Seasonal Closure	0.0	2.0	0.0	7.6	9.7	0.0	0.0
Open Year Around	7.6	7.7	7.6	0.0	0.0	0.0	7.6
Subtotal NFS Roads	9.7						
Seasonal Closure	0.0	0.0	0.0	0.2	0.2	0.2	0.0
Open Year Around	0.2	0.2	0.2	0.0	0.0	0.0	0.2
Subtotal NFS Motorized Trails	0.2						
Open Year Around	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Total Motorized	16.1	11.3	11.3	11.3	11.3	11.3	11.3
Seasonal Closure	0.2	4.9	5.0	5.0	4.9	5.0	5.0
Subtotal Non-Motorized	0.2	4.9	5.0	5.0	4.9	5.0	5.0
Closed	0.4	0.4	0.4	0.4	0.4	0.4	0.4

Table S-45. Miles of Roads and Trails within Canyon Creek by Alternative

	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Gross Country Travel							
Acres	0	0	0	0	0	0	0
Motorized trails un-authorized for motorized use	2.4	0	0	0	0	0	0
Roads open to highway legal vehicles only	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Roads open to all vehicles	0.0	0.0	0.0	1.4	1.4	1.4	0.0
Roads open to all vehicles	1.4	1.4	1.4	0.0	0.0	0.0	1.4
Subtotal NFS Roads	1.5						
Trails open to high clearance trail vehicles	0.0	0.0	0.0	1.7	1.7	1.7	0.0
Trails open to high clearance trail vehicles	1.7	1.7	1.7	0.0	0.0	0.0	1.7
Trails open to motorcycles	2.2	2.2	2.2	2.2	2.2	2.2	2.2
Subtotal NFS Motorized Trails	3.8						
Total Motorized	7.7	5.3	5.3	5.3	5.3	5.3	5.3
Roads/trails closed to motorized users	0.0	2.4	2.4	2.4	2.4	2.4	2.4
Subtotal Non-Motorized	0.0	2.4	2.4	2.4	2.4	2.4	2.4

Table S-46. Miles of Roads and Trails within South Yuba River by Alternative

	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Gross Country Travel							
Acres	3,161	0	0	0	0	0	0
Motorized trails available for motorized use	2.4	0	0	0	0	0	0
Roads open to highway legal vehicles only	0.3	0.0	0.3	0.3	0.0	0.0	0.3
Seasonal Closure							
Roads open to highway legal vehicles only	4.1	2.3	4.1	4.1	2.3	2.7	4.1
Open Year Around							
Roads open to all vehicles	0.0	0.3	0.0	0.7	1.3	1.3	0.0
Seasonal Closure							
Roads open to all vehicles	0.7	2.5	0.7	0.0	1.5	1.1	0.7
Open Year Around							
Subtotal NFS Roads	5.1						
Seasonal Closure	0.0	0.0	0.0	0.8	1.3	1.3	0.0
Trails open to high clearance trail vehicles	0.8	1.3	0.8	0.0	0.0	0.0	0.8
Open Year Around							
Subtotal NFS Motorized Trails	0.8	1.3	0.8	0.8	1.3	1.3	0.8
Open Year Around	4.4	4.4	4.4	4.4	4.4	4.4	4.4
State, County or other jurisdiction roads	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Roads/trails on private land							
Total Motorized	19.2	17.3	16.9	16.9	17.3	17.3	16.9
Open Year Around	9.6	9.6	9.6	9.6	9.6	9.6	9.6
Trails open only to non-motorized users	9.6	1.9	2.4	2.4	1.9	1.9	2.4
Roads/trails closed to motorized users							
Subtotal Non-Motorized	19.3	11.5	12.0	12.0	11.5	11.5	12.0
Open Year Around							

Adjacent Ownerships

Motorized Trails Crossing Private Land: Several of the unauthorized routes under consideration for addition to the National Forest System of roads and trails also cross private lands. For the portion of these roads and trails on National Forest System lands to be added to the National Forest System, permission must first be obtained from the private landowner to grant public access across the portion on their lands. Once this permission is obtained, the portion of the roads and/or trails on National Forest System lands would be added to the National Forest Transportation System and be made available for public access. Prior to the permission being obtained, public use of the portion of these roads and trails on National Forest System lands would be prohibited. If the landowner is unwilling to give permission for public access, these routes would not be added to the National Forest System and public use would be prohibited. Routes which crossed lands owned by Sierra Pacific Industries (SPI) were excluded from this consideration unless the Forest Service already has a right of way or easement since they have indicated they are unwilling to encourage use by motorized vehicles by the public on their land. Table S-47 summarizes the number of roads and trails by alternative which would have the portion on National Forest System lands added to the National Forest Transportation System once permission from the private land owner is obtained for public access across the portion on their lands.

Table S-47. Roads and Trails Crossing Private Land Potentially Open to Wheeled Motorized Vehicles by Alternative

Number of Routes Crossing Private Land	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
	43	9	0	5	43	7	7

Private Land Interface: Private land interface situations may occur when National Forest System lands are adjacent to private lands that have been, or may be, developing for recreation, rural, residential, urban or commercial uses. When National Forest road and trail management objectives differ from our neighbors, the potential for mutual conflicts exist. Generally these private land interface situations arise adjacent to private lands where the land owners have conflicting road and trail management objectives and different perceptions about how National Forest System roads and trails adjacent or near their property should be managed. All of the action alternatives reduce the number of miles of roads and trails open to wheeled motorized vehicles within ¼ mile private land. The largest decrease is Alternative 3. The smallest decrease is in Alternative 5. In addition, all of the action alternatives prohibit cross country travel within ¼ mile of private land which will reduce the proliferation of additional unauthorized routes. Alternatives 4, 5 and 6 impose wet weather restrictions on all native surface roads and trails which limit their use to the summer months. Table S-48 summarizes the miles of roads and trails within ¼ mile of private land.

Table S-48. Miles of roads and trails for each alternative within ¼ mile of private land

Road/Trail Category	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Cross Country Travel							
Acres	273,700	0	0	0	0	0	0
Routes un-authorized for motorized use (miles)	517.3	0	0	0	0	0	0
NFTS Roads	653.0	653.0	653.0	653.0	653.3	653.0	653.0
NFTS Motorized Trails	58.5	79.1	58.5	67.9	113.7	76.6	70.3
State, County or other jurisdiction roads	219.3	219.3	219.3	219.3	219.3	219.3	219.3
Total Motorized	1449.1	952.4	931.8	941.2	987.4	949.9	943.6
Roads/trails closed to motorized users	7.0	503.7	524.3	514.9	468.7	506.2	512.5
Trails open only to non-motorized users	77.3	77.3	77.3	77.3	77.3	77.3	77.3
Trails open only to hikers and equestrians (No mountain bikes allowed)	38.6	38.6	38.6	38.6	38.6	38.6	38.6
Total Non-Motorized	122.8	619.6	640.1	630.8	584.6	622.1	628.4

Social Economic

Employment and Income: The employment and labor income effects stemming from current motorized and non-motorized activities occurring on the Tahoe National Forest were estimated. The economic effects of all other types of recreation combined on the Tahoe NF have also been reported for comparison purposes. Economic effects tied to motorized and non-motorized activities were estimated to address the economic impact issue tied directly to Travel Management. Table S-49 summarizes the estimated employment and income associated with recreation in the local economy.

Predictions about changes in recreational use that may occur on the Forest are difficult to make and would be highly speculative. The Forest Service believes that under all action alternatives, levels of use would be relatively static although the use patterns may change. For example, even though the overall number of available roads and trails is reduced in all of the action alternatives, the same levels of use would simply become more concentrated in those areas. However, motor vehicle use is already concentrated in many areas of the Forest at this time, so this effect may not be realized either during implementation; but at some point some users would no longer attain the experience they desire and would likely seek other areas off-forest. The point at which this would occur is speculative.

Seasonal closures on native surface (dirt) 2 roads and system trails in Alternatives 4, 5 and 6 are likely to have some level of impact to the local economy. Yet, this effect, again, is nearly immeasurable in relationship to the overall economy in the area. Any potential effects would likely impact gas stations, convenience stores, and other retail stores in local communities.

Table S-49. Total Employment and Labor Income Effects

	Employment Effects (full and part time jobs)	Labor Income (2008 dollars)
Non-Motorized Recreation Use	245.5	\$4,492,972
Motorized Recreation Use	69.1	\$1,334,614
All Other Recreation Use	1061.9	\$19,782,041
Total for Area	1,376.6	\$25,609,626.2

American Indian Rights and Interests: Tribal input provided to the Forest Service during pre-scoping and scoping for this EIS identified a goal for providing appropriate access to sacred sites, ceremonial sites, and traditional use areas. Access to traditional use areas is not presently quantifiable in the absence of baseline inventories. Therefore, the factor used to assess the consequences of the alternatives is the total miles of roads and trails open to wheeled motorized vehicles and season of use. The “Heritage Resources” section of this summary describes consequences to traditional cultural resources that are also heritage resources, such as archaeological sites, sacred sites, and traditional cultural properties.

Table S-50 displays the total miles of roads and trail open to wheeled motorized use by class of vehicle. Alternative 5 provides the greatest opportunity for wheeled motorized use on the Tahoe National Forest. However the seasonal wet weather restrictions associated with Alternative 5 reduce its overall level of access. Alternatives 3, 4, 6 and 7 provide lower levels of access in terms of total miles. Access in Alternatives 4 and 6 is reduced even further due to the implementation of wet weather seasonal restrictions.

Table S-50. Summary evaluation of consequences to American Indians based on access

Class of Vehicle	Season of Use	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Roads Open to Highway Legal Vehicles Only	All Year	31	0	31	31	0	18	31
Roads Open to Highway Legal Vehicles Only	Seasonal Restriction	602	213	598	598	213	370	598
Roads Open to All Vehicles	All Year	110	141	110	1,900	2,086	2,066	110
Roads Open to All Vehicles	Seasonal Restriction	1,786	2,175	1,789		230	76	1,790
Trails Open To High Clearance Trail Vehicles	All Year	5	6	5	203	434	227	6
Trails Open To High Clearance Trail Vehicles	Seasonal Restriction	184	227	184				208
Trails Open to ATVs and Motorcycles	All Year				20	29	29	
Trails Open to ATVs and Motorcycles	Seasonal Restriction	18	20	18				20
Trails Open to Motorcycles	All Year	1	1	1	142	154	149	1
Trails Open to Motorcycles	Seasonal Restriction	127	152	127				144

Community Needs for Fuelwood: Fuel wood supplies are critical to rural people in California with low incomes. Data about fuel wood demand and supply in Tahoe National Forest counties are not available at present. Just outside the Region, in Trinity County, California, however, more than 70 percent of households rely on wood heating for their home (Celia Danks, Hayfork GIS Center, Hayfork, CA, personal communication April 1999). Smoke from domestic wood stoves may worsen local air quality during the winter and early spring that in turn may damage the health of children and elderly people nearby. Most individuals use wheeled motorized vehicles to gather personal use fire wood. Those alternatives which provide the largest miles of roads open to wheeled motor vehicles for the longest

period will provided the greatest opportunity for fuel wood gathering. Table S-51 summarizes the amount of roads available for fuelwood gathering with motorized vehicles.

Table S-51. Miles of roads available for fuel wood gathering opportunities by time of year

Access for Fuel wood Gathering Opportunities (miles)								
Class of Vehicle	Season of Use	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Roads Open to Highway Legal Vehicles Only	All Year	31	0	31	31	0	18	31
Roads Open to Highway Legal Vehicles Only	Seasonal Restriction	602	213	598	598	213	370	598
Roads Open to All Vehicles	All Year	110	141	110	1,900	2,086	2,066	110
Roads Open to All Vehicles	Seasonal Restriction	1,786	2,175	1,789		230	76	1,790

Plant Communities

Aquatic and Riparian Plant Communities: Riparian vegetation is found near water sources at all elevations, while aquatic vegetation is found within the water. The SNFPA (2004) identified aquatic/riparian ecosystems as special aquatic features and defined them as small, irregularly distributed aquatic/riparian habitats. These ecosystems have significantly greater biodiversity than adjacent uplands (Kondolf et al. 1996), providing habitat for both aquatic and terrestrial plant and animal species. They are a critical component of biodiversity within the arid lands of the western United States and their importance is amplified by the small amount of land they occupy (Caicco 1998, Goebel et al. 2003). These ecosystems are also important for rare or endemic plant and animal species including rare or endemic invertebrate species (Erman 1996, Erman and Erman 1990).

Sensitive and watchlist species dependent on aquatic/riparian plant communities benefit most when the health of the aquatic/riparian ecosystem is maintained or improved. Motorized vehicle use negatively impacts these plant communities by changing the pattern of water flow, reducing vegetative cover, compacting soil, causing erosion, depositing petroleum products/sediment thereby reducing water quality, and introducing invasive non-native plants (weeds). Table S-52 summarizes the number of perennial and intermittent water crossings by alternative. All of the action alternatives reduce the number of motorized water crossings. The greatest reduction is in Alternative 3, the lowest reduction is in Alternative 5. Table S-53 summarizes the miles of motorized use within 100 feet of riparian vegetation. All of the action alternatives reduce the mileage of motorized trails within 100 feet of riparian vegetation. The largest reduction is Alternative 3; the lowest reduction is in Alternative 5.

Table S-52. Number of Perennial and Intermittent Water Crossings by Alternative*

	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Perennial Stream Crossings							
Existing NFTS roads and motorized trails	670	670	670	670	670	670	670
Private and other jurisdiction roads	630	630	630	630	630	630	630
Cross country travel (motorized trails un-authorized for motorized use)	355	0	0	0	0	0	0
Additions to the NFTS	0	19	0	9	59	18	9
Total Motorized	1655	1319	1300	1309	1359	1318	1309
Intermittent Stream Crossings							
Existing NFTS roads and motorized trails	790	790	790	790	790	790	790
Private and other jurisdiction roads	520	520	520	520	520	520	520
Cross country travel (motorized trails un-authorized for motorized use)	373	0	0	0	0	0	0
Additions to the NFTS	0	16	0	9	68	19	10
Total Motorized	1683	1326	1309	1319	1378	1329	1320

Table S-53. Miles of Motorized use on NFS Lands within 100 Feet of Riparian Vegetation by Alternative

Alternative	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Cross country travel (acres)	73,500	0	0	0	0	0	0
Motorized trails un-authorized for motorized use	114	0	0	0	0	0	0
Existing NFTS roads and motorized trails	172	172	172	172	172	172	172
Private/other jurisdiction roads	59	59	59	59	59	59	59
Additions to the NFTS	0	6	0	3	19	7	3
Total Motorized	345	237	231	234	250	238	234

Serpentine Plant Communities: Serpentine (ultra mafic soils) are looked upon as significant segments of the worldwide fabric of diversity (Kruckeberg 1984). The vegetation growing on serpentine areas can be highly distinctive. Many serpentine areas are sparsely vegetated and dry, while others are relatively productive and support mixed conifer and yellow pine communities. Plants that exist on serpentine soil have adapted to the unusual chemical composition of the soil. Many species have evolved that are specific to serpentine soil (such species are known as endemics). Several endemic serpentine sensitive and watchlist plant species only occur on serpentine soil.

Motorized vehicle use impacts these plant communities by reducing vegetative cover, creating disturbed soils that are subject to erosion, and introducing weeds. Many serpentine habitats are open terrain lacking vegetation (Kruckeberg 1984). In addition to impacting vegetation, motorized vehicle use within serpentine habitats can create health hazards for users since inhaling serpentine dust can introduce asbestos fibers into the lungs (ibid). These habitats are limited (less than 1 percent of the earth) (Brooks 1987). Table S-54 summarizes the miles of motorized use within serpentine plant communities. All of the action alternatives reduce the amount of motorized use within serpentine plant communities. The largest reduction is Alternative 3; the lowest reduction is in Alternative 5.

Table S-54. Miles of Motorized use within Serpentine Plant Communities by Alternative

Alternative	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Existing NFTS roads and motorized trails	48	48	48	48	48	48	48
Private/other jurisdiction roads	12	12	12	12	12	12	12
Cross country travel (acres)	13,400	0	0	0	0	0	0
Motorized trails un-authorized for motorized use (miles)	35	0	0	0	0	0	0
Additions to the NFTS	0	4	0	2	4	3	3
Total Motorized	94	64	59	62	64	63	63

Older Forest Plant Communities: In this analysis, older forest is described as occurring in the red fir/upper montane forest and mixed-conifer forest. Other vegetation types exist that also have older trees, but mixed conifer and red fir are the primary types of older forest analyzed in this document. For more information about old forests, refer to the SNFPA (2001). There are about 353,631 acres of older forest on TNF system lands, of which 29,900 acres are currently, impacted by NFTS motorized roads/trails/areas and motorized trails un-authorized for motorized use. There are about 1,088 miles of NFTS and 627 miles of motorized trails un-authorized for motorized use located in older forest plant communities.

Motorized vehicle use impacts older forest plant communities in several ways. The most significant impacts may be to underground mycelia and mycorrhizal networks. Motorized vehicle use disturbs the litter/duff/soil organics, reduces soil shade/moisture, and creates openings. Openings created by motorized trails un-authorized for motorized use may break the mycelial network. Reductions in leaf litter and organic material in soils affects the amount of nutrients and water available to plants dependent on mycorrhizal associations and fungi. Creation of bare soil also increases the risk of weed introduction and spread. Table S-55 summarizes the miles of motorized use within older forest plant communities. All of the action alternatives reduce the amount of motorized use within older forest plant communities. The largest reduction is Alternative 3; the lowest reduction is in Alternative 5.

Table S-55. Miles of Motorized Use within Older Forest Plant Communities by Alternative

Alternative	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Existing NFTS roads and motorized trails	1,088	1,088	1,088	1,088	1,088	1,088	1,088
Private/other jurisdiction roads	220	220	220	220	220	220	220
Cross country travel (acres)	330,200	0	0	0	0	0	0
Motorized trails un-authorized for motorized use (miles)	627	0	0	0	0	0	0
Additions to the NFTS	0	36	0	17	141	33	22
Total Motorized Use	1934	1344	1308	1325	1449	1341	1330

Oak Woodland Plant Communities: California’s oak woodlands are largely privately owned and are estimated to cover about 10 million acres (Ewing et al. in Bartolome and Standiford 1992). They provide shelter and food for wildlife, wood and fuel for humans, and feed for livestock (Jimerson and Carothers 2002). Oak woodlands contain some of the highest species diversity found in California native plant communities (Jimerson and others in Jimerson and Carothers 2002). The TNF manages about 13,886

acres oak woodland. There are about 40 miles of NFTS and 19 miles of motorized trails un-authorized for motorized use located in oak woodland plant communities.

Motorized vehicles impact these ecosystems on TNF lands by introducing and spreading weeds, damaging native vegetation, increasing soil erosion and fragmenting habitats. The TNF does not have any rare plants or fungi that are entirely dependent on oak woodlands. Table S-56 summarizes the miles of motorized use within oak woodland plant communities. All of the action alternatives reduce the amount of motorized use within oak woodland plant communities. The largest reduction is Alternative 3; the lowest reduction is in Alternative 5.

Table S-56. Miles of Motorized Use within Oak Woodland Plant Communities by Alternative

Alternative	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Existing NFTS roads and motorized trails	22	22	22	22	22	22	22
Private/other jurisdiction roads	19	19	19	19	19	19	19
Cross country travel (acres)	13,500	0	0	0	0	0	0
Motorized trails un-authorized for motorized use	19	0	0	0	0	0	0
Additions to NFTS	0	0	0	0	2	0	0
Subtotal Motorized	60	41	41	41	43	41	41

Forest Edges and Openings: Forests of all ages contain edges and openings. Plants dependent on edges and openings within forested plant communities are not considered habitat specific. Forest edges and openings occur in all plant communities. Therefore the number of acres of forested edge and openings on TNF system lands overlaps with the acreages in the other plant communities discussed. There are 1,708 miles of NFTS and 925 miles of motorized trails un-authorized for motorized use within forest edges and opening plant communities. Forest edge and openings are constantly being created as trees and other vegetation dies. Forest edge and opening plant communities are lost as vegetation grows into them. In this analysis, sensitive species with potential habitat within forest edge and openings include: *Astragalus webberi*, *Calochortus clavatus* var. *avius*, *Clarkia biloba* ssp. *brandegeae*, *Fritillaria eastwoodiae*, *Lewisia kelloggii* ssp. *hutchisonii*, *Lewisia kelloggii* ssp. *kelloggii*, *Lupinus dalesiae*, *Penstemon personatus*, and *Phacelia stebbinsii*. Watchlist species with potential habitat within edge and opening plant communities include: *Androsace occidentalis* var. *simplex*, *Erigeron petrophilus* var. *sierrensis*, and *Lilium humboldtii* ssp. *humboldtii*.

Motorized vehicle use impacts these habitats by increasing the risk of weed introduction and spread, reducing plant cover, increasing erosion, reducing photosynthetic ability by covering vegetation with dust, changing water flow patterns, and compacting soil. Table S-57 summarizes the miles of motorized use within forested plant communities. All of the action alternatives reduce the amount of motorized use within forested plant communities. The largest reduction is Alternative 3; the lowest reduction is in Alternative 5.

Table S-57. Miles of Motorized Use within Forested Plant Communities* by Alternative

Alternative	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Existing NFTS roads and motorized trails	1,708	1,708	1,708	1,708	1,708	1,708	1,708
Private/other jurisdiction roads	289	289	289	289	289	289	289
Cross country travel (acres)	498,700	0	0	0	0	0	0
Motorized trails un-authorized for motorized use	925	0	0	0	0	0	0
Additions to the NFTS	0	43	0	16	191	45	26
Subtotal Motorized	2922	2040	1997	2013	2188	2042	2023

High Elevation Openings and Rocky Areas: Some plants only grow in openings at high elevations (generally 6,000 feet and above). Trees may be present in the area, but they do not form closed canopy situations. The TNF manages 43,240 acres of high elevation openings and rocky areas. There are 79 miles of NFTS and 36 miles of motorized trails un-authorized for motorized use in these plant communities. Sensitive species with potential habitat within these types of plant communities include: *Arabis rigidissima* var. *demota*, *Erigeron miser*, *Eriogonum umbellatum* var. *torreyanum*, *Lewisia longipetala*, and *Tauschia howellii*. Watchlist species that have potential habitat within these types of plant communities include: *Asplenium trichomanes-ramosum*, *Claytonia megarhiza* and *Tonestus eximius*.

These habitats are generally steep and have highly erosive soils/rock outcrops/rocky openings. When motorized vehicle use occurs near or within the habitat itself, damage to the habitat can be severe. The plants dependent on these plant communities do not appear to compete well with other vegetation. Therefore, weed introduction and/or spread is a significant risk. These plant communities are already subject to natural erosion and have a short growing period. Any disturbance increases erosion risk and can cause significant impacts to the soil and water components of the habitat. Table S-58 summarizes the miles of motorized use within high elevation opening and rocky areas. All of the action alternatives reduce the amount of motorized use within high elevation opening and rocky areas. The largest reduction is Alternative 3; the lowest reduction is in Alternative 5.

Table S-58. Miles of Motorized Use within High Elevation Opening and Rocky Areas by Alternative

Alternative	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Existing NFTS roads and motorized trails	79	79	79	79	79	79	79
Private/other jurisdiction roads	26	26	26	26	26	26	26
Cross country travel (acres)	28,800	0	0	0	0	0	0
Motorized trails un-authorized for motorized use	36	0	0	0	0	0	0
Additions to the NFTS	0	3	0	0	3	3	2
Total Motorized	141	108	105	105	108	108	107

Noxious Weed Infestations: Sierra Nevada region biodiversity is at increased risk due to alterations in human uses, fire regimes, and climatic change and changes brought about by weed invasion (D'Antonio et al. 2004). Climate changes may result in massive geographical shifts in locations of sites that provide environments for native plants. Opportunities for replacement of native species with weeds will be enhanced (Franklin 2003). In general terms, Tahoe National Forest (TNF) system lands are considered

weed free, with most weed occurrences located along roads and/or in highly disturbed areas such as landings. The lower elevations on the westside of the forest currently contain the worst weed infestations and provide the entry points for many weeds into the TNF. It is a major “source” for weeds that are moving upslope into coniferous forests. Motorized vehicle use is known to enhance weed introduction in a number of ways (Trombulak and Frissell 2000) including increasing weed introduction by moving weed seed and plant parts from place-to-place in the mud/soil on their tires, and/or on the vehicle body.

Implementation of Alternative 1 carries the highest risk of weed introduction into sensitive/watchlist species occurrences and watchlist plant communities since it allows motorized vehicle use on the greatest amount of NFS land. All of the action alternatives reduce the risk of weed introduction into sensitive/watchlist species occurrences and watchlist plant communities. The largest reduction is in Alternative 3, the lowest reduction is in alternative 5.

Native Plant Habitat Fragmentation: Many acres of TNF system lands are considered fragmented with other ownership lands embedded within and adjacent to the Forest. These inholdings are managed by other Federal agencies (such as BLM), private individuals and corporations, the states of California and Nevada, and local municipalities and agencies of municipalities. The presence of these inholdings affects the current condition and future outlook of TNF system lands. For example, most of the lower elevation, westside oak woodland plant communities are in private ownership and are experiencing rapid development as home sites. The existence of developed land adjacent to NFS land often increases the amount of human activity on the NFS land and increases the risk of un-authorized (for public) use, and weed introduction/spread onto NFS lands. The natural resources located on inholding lands can be managed much differently than NFS lands. For example, inholdings can influence plant communities/habitats by reducing the connectivity of plant communities (habitat). Connectivity is desired for many species of plant (and animals). Connectivity is often described in terms of large geographic areas of particular vegetation types (such as mixed conifer) that are not fragmented by roads, development or other disturbances. The largest geographic areas other than wilderness on TNF system lands are the inventoried roadless areas. Wilderness, special interest areas (SIAs), and research natural areas (RNAs) also provide some native plant connectivity and are briefly described below. Table S-59 summarizes the miles of motorized use within Inventoried Roadless Areas. All of the action alternatives reduce the amount of motorized use within Inventoried Roadless Areas. The largest reduction is Alternative 3; the lowest reduction is in Alternative 5.

Table S-59. Total Miles of Motorized Use in Inventoried Roadless Areas by alternative

Alternative	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Existing NFTS roads and motorized trails	129	129	129	129	129	129	129
Private/other jurisdiction roads	23	23	23	23	23	23	23
Cross country travel (acres)	109,100	0	0	0	0	0	0
Motorized trails un-authorized for motorized use (miles)	54	0	0	0	0	0	0
Additions to the NFTS	0	9	0	0	16	8	7
Subtotal Motorized	206	161	152	152	168	160	159

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