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Environmental Assessment

West Hoover Travel Management Plan

Bridgeport Ranger District, Humboldt-Toiyabe National Forest
Mono County, California



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TABLE OF CONTENTS

INTRODUCTION2
DOCUMENT STRUCTURE2
BACKGROUND / PURPOSE AND NEED FOR ACTION2
THE PROPOSED ACTION AND ALTERNATIVES2
THE PROPOSED ACTION2
NO ACTION6
ALTERNATIVES CONSIDERED BUT NOT CARRIED FORWARD FOR DETAILED REVIEW6
PUBLIC INVOLVEMENT7
ISSUES9
ENVIRONMENTAL CONSEQUENCES.....10
ANALYSIS QUALIFICATIONS10
RECREATION.....11
WILDERNESS/ROADLESS13
WILDLIFE HABITAT18
SPECIAL USES25
ECONOMICS29
WATERSHED CONDITION29
AIR QUALITY.....32
VISUAL QUALITY34
CONSULTATION AND COORDINATION.....35
LIST OF TRIBES, AGENCIES, AND ORGANIZATIONS CONTACTED35
LIST OF PREPARERS.....36
REFERENCES37



INTRODUCTION

Document Structure

The Forest Service has prepared this Environmental Assessment in compliance with the National Environmental Policy Act. This Environmental Assessment discloses the direct, indirect, and cumulative environmental impacts that would result from the proposed action and alternatives.

Additional documentation may be found in the project planning record located at the Bridgeport Ranger District Office.

BACKGROUND / PURPOSE AND NEED FOR ACTION

The project is needed to address changing patterns of winter recreation use in the area. Population increases in California and Nevada and improvements in snowmobile technology have increased the demand for snowmobiling in the area. The area around the Leavitt Lake Road corridor is high elevation, providing more consistent season-long snowmobiling opportunities than lower elevations. It provides opportunities to enjoy the difficult terrain and open bowls that the newer snowmobiles can negotiate. There are limited places with consistent snow that provide this kind of snowmobiling opportunity.

The purpose of the project is to provide additional snowmobiling opportunities in the area around the Leavitt Lake Road corridor.

THE PROPOSED ACTION AND ALTERNATIVES

The Proposed Action

The proposed action is to revise the Bridgeport Ranger District Travel Plan and amend the Toiyabe Land and Resource Management Plan to provide for snowmobile (motorized vehicles designed for over-snow use with tracks in the rear and skis in the front) use in a 7,000-acre area of the recommended western addition to the Hoover Wilderness Area (West Hoover Addition) around the Leavitt Lake Road corridor (See Proposed Action Map). The closing date would be April 15 of each year unless the Bridgeport District Ranger determines on an annual basis that an earlier or later closing date is appropriate and is consistent with the need to protect resources from potential damage. The closures would be determined on an annual basis as on-the-ground conditions warrant. Implementation of this project is scheduled for the winter of 2005-2006.

Plan Amendment

This project would amend the Toiyabe Land and Resource Management Plan. The Plan currently provides for management of the area under the wilderness management prescription. The Plan would be amended to provide for snowmobile use in the area around the Leavitt Lake Road corridor. The amendment would apply to only this 7,000-acre area.

The Toiyabe Land and Resource Management Plan would be amended as follows:



- Add to footnote 1 on page IV-96: “Except as identified in Recreation MIH code A15.”
- Add Recreation MIH code A15: “Manage a 7,000 acre area of the West Hoover Recommended Addition to the Hoover Wilderness Area to allow for snowmobile use. Ensure that this use does not compromise the long term wilderness character of the area. This 7,000 acre area is around the Leavitt Lake Road corridor.”

Resource Protection Measures

Measures to protect nearby closed areas and other uses would include:

- Enlisting volunteers from both motorized and nonmotorized recreation communities to help with monitoring, enforcement, and public education efforts.
- Cooperating with the Inyo and Stanislaus National Forests, Yosemite National Park, and Mono County to monitor snowmobile use and protect closed areas. This will include continued cooperation on overflights to monitor and protect closed areas.
- Enhancing Forest Service public education efforts through personal contacts, patrols, web site information, and press releases.
- Enhancing signage of boundaries and entrance points, including maps of boundaries, opening and closing dates, potential avalanche danger, U.S. Marine Corps training activities, and descriptions of regulations.
- Continuing Forest Service patrols of the area, including issuing citations for those violating boundaries.

- Requesting that the State of California require more visible snowmobile ID tags.
- Conducting a field review to determine final placement of boundaries below the Pacific Crest Trail (See Map). Request Pacific Crest Trail Association and other public participation in this field review. The Pacific Crest Trail boundaries depicted in this document are conceptual. Actual boundaries could vary when they are laid out on-the-ground.
- Using enforcement related monitoring to determine incursions into closed areas, including the 40,000 acres of the West Hoover Addition that would remain closed to snowmobile use, Yosemite National Park, the Hoover and Emigrant Wilderness Areas, and the Pacific Crest Trail. Any adjustments in snowmobile use needed to address these incursions would be consistent with this decision.
- Using Marine Corps information on the effects of changes in snowmobile use on their training activities. Any adjustments in snowmobile use needed to address these conflicts would be consistent with this decision.

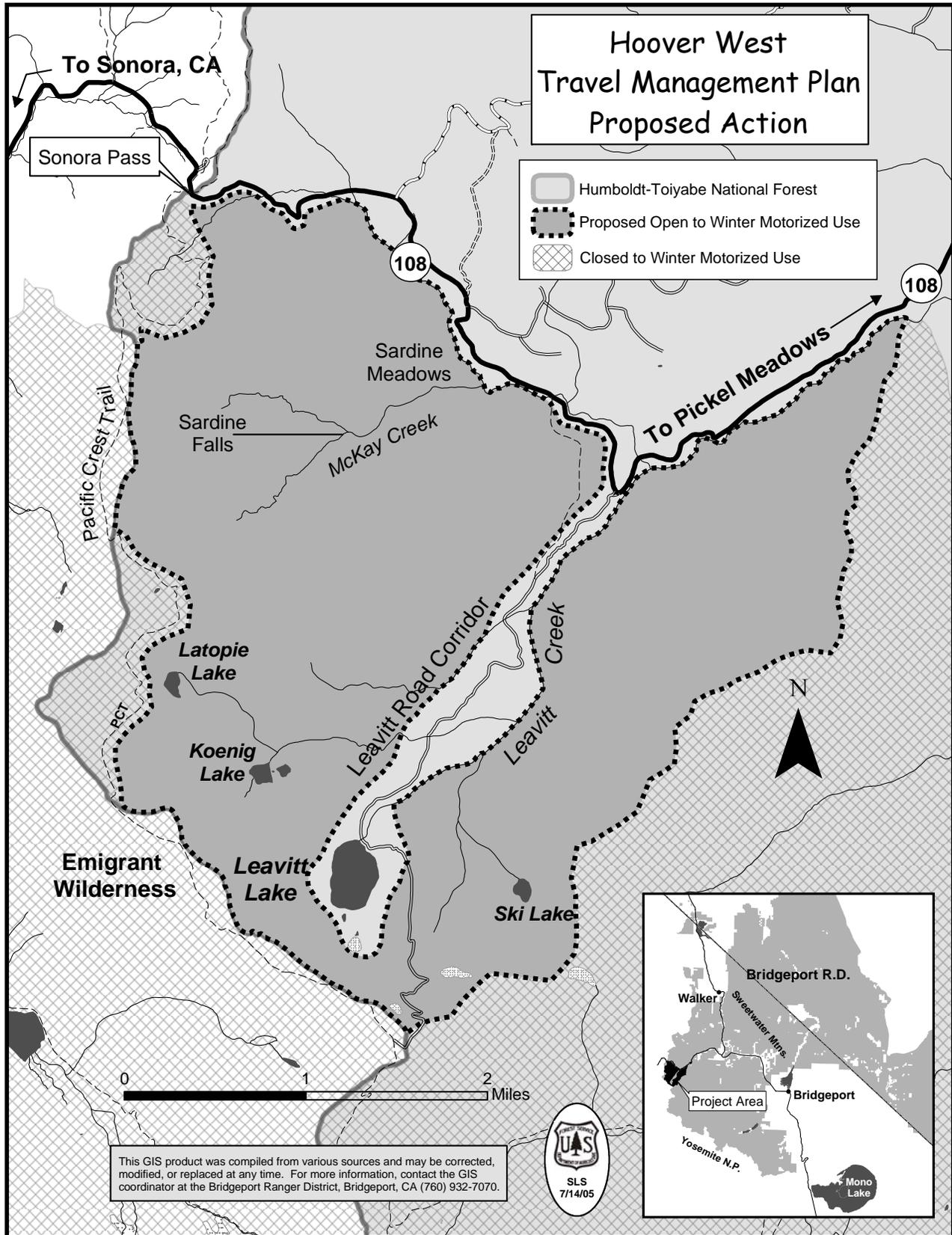
Measures to protect ecosystem integrity would include:

- Using Yosemite toad population monitoring and other resource information from the California Department of Fish and Game Biodiversity Management Plan, the Sierra Nevada Forest Plan Amendment Yosemite Toad Conservation Strategy (In development), other Sierra Nevada Forest Plan monitoring efforts, and



on-the-ground observations of Forest Service personnel to monitor ecosystem integrity, including watersheds, flora, fauna, viewsheds, and soundscapes. Any adjustments in snowmobile use needed to address ecosystem integrity would be consistent with this decision.

- Using water quality data collected by the Lahontan Water Quality Control Board and others in the West Walker River watershed to determine water quality impacts over time. Any adjustments in snowmobile use needed to address water quality would be consistent with this decision.
- Installing rest rooms or garbage receptacles at the Pickel Meadows Gate trailhead if conditions warrant.
- The Forest Service, in cooperation with the Desert Research Institute, will collect and analyze snow samples in 2005 and 2006 to determine before and after decision contaminant levels in the area. Any adjustments in snowmobile use needed to address snowmobile related contaminants would be consistent with this decision.
- The Forest Service is required to comply with the Clean Air Act. Should the Great Basin Unified Air Quality Control District determine unacceptable levels of air quality, any adjustments in snowmobile use needed to address air quality would be consistent with this decision.





No Action

Under the no action alternative the 7,000 acres would remain closed to snowmobile use. These vehicles could continue to be used on the Sonora Pass Highway pursuant to Caltrans policies and in the Leavitt Lake Road corridor pursuant to the Toiyabe National Forest Land and Resource Management Plan. U.S. Marine Corps training would continue in the Leavitt Lake Road corridor and Sardine Meadows.

Alternatives Considered but not Carried Forward for Detailed Review

Several other alternatives were considered, but not carried forward for detailed review. These are:

- *Open the entire 47,000 acre proposed western addition to the Hoover Wilderness Area to snowmobile use.*

This alternative was not carried forward because it would have a high potential to generate trespass motorized use on the Pacific Crest Trail, into Yosemite, and the Hoover and Emigrant Wilderness Areas. Enforcement would be much more difficult than under the proposed action due to a seven-fold increase in area and a three-fold increase in boundaries with closed areas and a three-fold increase in boundaries with the Pacific Crest Trail.

- *Keep this area closed and provide for snowmobile use in other areas of northern Mono County.*

This alternative was not carried forward because it is outside the scope and does not meet the purpose and need for the proposal. In

addition, all National Forest System Lands in the area are already open to snowmobile use except Wilderness Areas and the proposed western addition to the Hoover Wilderness Area. Compared to the proposed action, most of these areas have much less consistent snowfall and are often unusable for snowmobiles.

- *Exclude use of the McKay Creek drainage and restrict use to only the Leavitt Creek drainage.*

This was not carried forward due to enforcement problems because the boundary between the Leavitt and McKay Creek drainages is not an obvious topographic feature. In addition, this would exclude nearly half of the area from motorized use, including some of the best snowmobiling terrain and thus not meet the purpose and need for the proposal.

- *Close the area to snowmobile use after April 30 when backcountry skiers prize Sierra spring corn snow, and have better access to the area, as well as to protect wildlife.*

This alternative was not carried forward because the proposed action has been modified to include a usual closure date of April 15.

- *Allocate fifty percent of the days to motorized and fifty percent to nonmotorized.*

This alternative was not carried forward because it would be difficult to manage and enforce and limits the ability to meet the purpose and need for the proposal. In addition, nonmotorized use represents only a small portion of overall use of the area during the winter.



- *Designate specific routes for snowmobile use instead of the proposed area.*
- This alternative was not carried forward because it does not meet the purpose and need for the proposed action, which identifies the demand for open bowl opportunities, rather than just trail riding opportunities. In addition, there are already trail opportunities along the Leavitt Lake Road corridor and along the Sonora Pass Highway.
- *Modify the proposed action to eliminate snowmobile use in the Leavitt/Pickel Meadows area near the current trailhead area known as "Peoples Gate."*

This would limit motorized use to the trailhead area and the Sonora Pass Highway corridor in that area. This alternative was not carried forward for detailed analysis because it is outside the scope of the purpose and need and would eliminate motorized use in the Leavitt/Pickel Meadows area, which has always been open to snowmobile use. This would limit the ability to meet the purpose and need to provide for additional snowmobile opportunities.

Public Involvement

Scoping

The proposal was listed in the Schedule of Proposed Actions in January, April, and July, 2005. The proposal was provided to the public and other agencies during scoping in December 2004.

Most of the comments received during the scoping process expressed opposition to snowmobile use. Many other comments

supported snowmobile use. Opponents of snowmobiles thought the area should be managed as wilderness and felt that snowmobiles caused noise, air pollution, and resource damage. Snowmobile proponents felt that their machines caused no resource damage and that there were few areas available for their use. Comments from all perspectives were used to refine the proposed action, purpose and need, and to develop the issues analyzed in this document.

Comments on the Proposed Action

Following refinement of the proposed action and purpose and need, a Notice of Proposed Action was released for public review on March 17, 2005. Legal notice was published in the Mammoth Times on that day and press releases were sent to the Reno Gazette Journal, South Lake Tahoe Tribune, and Sonora Union Democrat. The Forest Service published the Notice on the Humboldt-Toiyabe National Forest website. Thousands of email and standard mail notices were sent to interested parties.

This public outreach effort led to several thousand comments on the Notice of Proposed Action. Most comments opposed opening the area to snowmobile use. Others supported the proposed action and suggested it be expanded to include the entire West Hoover Addition.

Several themes emerged from an analysis of comments on the proposed action (USDA Forest Service, 2005a):

- Policy concerns: Many comments addressed policy concerns, suggesting that the proposed action rewarded illegal use of the National Forest. Others suggested that lack of action by Congress on Wilderness



designation justified more snowmobile use. These policy concerns are addressed in the Decision Notice.

- **Process Concerns:** Other comments focused on process, suggesting that the Forest Service abandon the Environmental Assessment and move directly to an Environmental Impact Statement. Many suggested that an additional public comment period be provided. Others suggested concerns about too many comment periods. These comments were carefully considered, but not adopted because the regulations provide for preparation of Environmental Assessments and the nature of the proposed action points to the need to prepare an Environmental Assessment to determine the potential for significant impact rather than jumping to the conclusion that significant impacts would occur. In regards to the request for a third public comment period, although the regulations require a single comment period only, there have already been two substantial comment periods on this project. Each has generated several thousand comments. These thousands of comments have provided a very clear picture of public concerns related to this project. Therefore, an additional comment period is not warranted.
- **Environmental Impact Concerns:** Many comments identified potential environmental impacts. These included potential impacts to nearby closed areas from trespass snowmobiling. Areas of concern included Yosemite National Park,

the Pacific Crest Trail, the remaining 40,000 acres of the West Hoover Addition, and the Emigrant and Hoover Wilderness Areas. These concerns were carried forward for environmental analysis as part of the wilderness/roadless and recreation issues. Many of the concerns have been addressed through ongoing enhancement of enforcement efforts. Other concerns were addressed through modifications to the proposed action to improve education, enlist volunteers, provide more information, and adjust snowmobile use as needed.

Other comments focused on impacts to furbearers and their habitat, including pine martin, wolverine, Sierra Nevada red fox, and Pacific fisher. Others identified potential impacts to Yosemite toad, which is present in two Critical Aquatic Refuges in the area. Still others identified potential effects to birds, small mammals, and other wildlife. These concerns were carried forward for analysis as part of the wildlife issue in this document and were addressed in the wildlife specialists report (USDA Forest Service, 2005b). They were also addressed through modifications to the proposed action to adjust snowmobile use as needed to protect Yosemite toads and other wildlife.

Many commenters expressed concerns about potential impacts to opportunities for backcountry skiing, and snowshoeing. These concerns were carried forward for analysis as part of the Recreation issue. They were also reflected in a modification of the proposed action to close the area to snowmobiling on April 15



each year. The area would be available for unhampered backcountry skiing and snowshoeing after April 15.

Other commenters were concerned about impacts to watersheds, including soil erosion caused by snowmobile use over bare ground and snow and water contamination from snowmobile related pollutants. These concerns were carried forward for analysis under the watershed issue and resulted in a modification to the proposed action to adjust snowmobile use as needed to protect water quality. Watershed concerns are also reflected in the April 15 closure date to protect resources from potential damage.

These public comments and interdisciplinary team analyses were used to develop this environmental assessment by focusing analysis on the issues outlined below and providing information to help further refine the proposed action.

Issues

The following is a list of issues developed to guide the impact analysis for the proposed action:

Recreation: What impacts would the project have on both motorized and nonmotorized recreation opportunities in the area, including the Pacific Crest Trail?

Wilderness/Roadless: How would wilderness and roadless characteristics, including those on nearby closed areas such as Yosemite National Park and the Emigrant and Hoover Wilderness Areas be affected by the project?

Wildlife: What affects to wildlife habitat would occur, particularly to Yosemite toad habitat?

Special Uses: Would the project affect use of the area by the Marine Corps Mountain Warfare Training Center?

Watershed: What are the potential impacts from the proposed travel management plan to water quality, soils, vegetation, and other watershed conditions?

Economics: What impacts would the proposal have on businesses in adjacent communities?

Air Quality: Would air quality be affected by the proposal?

Scenery: Would scenic quality be affected by the proposal?



ENVIRONMENTAL CONSEQUENCES

Analysis Qualifications

The analysis of environmental consequences of the proposed action is primarily related to projections of future snowmobile use in the project area under the no action alternative and under the proposed action. Many factors can influence snowmobile use. These include weather, snowpack, access and parking, fuel prices, publicity, acres available here and in other parts of the Sierra, enforcement, type of terrain, technology changes, and population growth. One recent trend has been an increase in snowmobile use by snowboarders.

Under the proposed action, we anticipate a short-term boost in snowmobile use associated with publicity related to the decision. This will be followed by a leveling in use as the effect of short-term publicity wears off and enforcement of boundaries continues to be enhanced. This is consistent with our experience in the area during the winter of 2003/2004 when widespread publicity generated an increase in use. In 2004/2005, use leveled off as publicity decreased and enforcement increased.

Other factors undoubtedly influenced the level of use in 2004/2005, including a much greater snowpack locally and minimal snowpack in Oregon and Washington. This had the effect of increasing use from those states while decreasing use locally. Locals took advantage of high snowpack levels by using the Sweetwater Mountains and other areas that have not been available in low snow years.

Under the no action alternative, we anticipate a leveling or decrease in

snowmobile use in the short term as the effects of recent publicity fade and enforcement continues to be enhanced. In addition, it is likely that some use would be displaced to areas currently open to snowmobiling north of the Sonora Pass Highway, in the primary Marine Corps training area.

Following these short-term adjustments, we anticipate a gradual increase in snowmobile use under both the proposed action and no action alternatives. This would be related primarily to overall population growth in California, Nevada, and neighboring states. Under the proposed action this long term increase would occur in both the project area the Leavitt Lake Road corridor, and the Marine training area north of the Sonora Pass Highway. Under no action it would be limited to the Leavitt Lake Road corridor and the Marine training area north of the Sonora Pass Highway.

In the long term, this projected increase could reach a level where a shortage of parking levels it off or where it begins to conflict with Marine Corps training activities or causes damage to the ecosystem. Adjustments in snowmobile use to address conflicts or ecosystem damage would limit future increases in use.



Figure 1: Snowmobiles near the Peoples Gate staging area on the Sonora Pass Highway.



Recreation

Affected Environment

The project area has been closed to motorized use by special order since 1981. During the summer, the area has been used by hikers, backpackers, fishermen, and campers. Pacific Crest Trail through-hikers and day-hikers pass through the area. During the winter, snowmobilers have often trespassed into the area, with some knowing it was illegal and others being unaware that the area was closed. Many commenters during the scoping and review of the proposed action processes stated that they skied or snowshoed in the area, but Forest Service personnel have noted only a few skiers or snowshoers. Most skiing use was noted in the Pickel Meadows area that is more easily accessible than the project area. Some skiing use was noted in the spring, when access on the Sonora Pass Highway is opened to highway traffic by Caltrans. Commenters stating they used the area for skiing and snowshoeing noted conflicts with snowmobiling, resulting in fear and discomfort, as well as incompatibility. Commenters stating they used the area for snowmobiling noted few skiers or any user conflicts. Forest Service law enforcement personnel have noted few user conflicts (USDA Forest Service, 2005c).

Demand for snowmobiling in the area has increased in the past few years in part due to closures of other areas formally available for snowmobiling. These include portions of the Carson Ranger District and the Inyo National Forest. Use levels over the last two years have amounted to about seven trucks/trailers with about 20 snowmobiles on weekdays and about 35 trucks/trailers with about 100 snowmobiles on weekend days (USDA Forest Service, 2005c).

During the winter of 2003-2004 a popular riding area was from the Sonora Pass Highway through the Leavitt Lake Road corridor and then westward to closed areas through Koenig Lake, over the bowls above Sardine Falls, and returning to the highway corridor at the top of Sonora Pass.

During the 2003-2004 season, law enforcement personnel contacted about 400 snowmobilers in the area. Of those 19 were issued citations and warnings for California State Green Sticker Violations. Most contacts were educational in nature, informing snowmobilers that the West Hoover Addition was closed to snowmobile use.

In the 2004-2005 season there was increased enforcement and a major increase in legal areas available due to the heavy snow accumulations. Snowmobiles were dispersed throughout the Bridgeport Ranger District into the Sweetwater Mountains and other areas. Snowmobiles in the Sonora Pass area concentrated on legal areas in the Leavitt Lake Road corridor and areas north of the Sonora Pass Highway, in the Marine Corps training area.

Trespass into closed areas continued. Most of the incursions were due to lack of education. During the 2004-2005 season, 170 riders were contacted and educated about the closed area. Of the 170 riders contacted, 18 violation notices were issued for either expired or no California State Green Stickers. Forty warnings to first time violators were issued for intrusions into the West Hoover Addition. No second time violators were found. Fifty warnings were issued for filming without a permit. Eight incident reports were written for intrusions into the Emigrant Wilderness. Four incident reports were written for intrusions into the Hoover Wilderness.



The Pacific Crest National Scenic Trail follows a course just outside the project area. The Pacific Crest National Scenic Trail, by law, is a nonmotorized trail in all seasons. The trail is of national significance, importance and value. Pacific Crest Trail users generally perceive the trail as offering an opportunity to get away from the sights and sounds of man, a “wilderness” or “primitive” type opportunity (USDA Forest Service, 1982. p. 13).

Environmental Consequences

No Action

Under the no action alternative, recreation use would be similar to what is currently seen. Some trespass snowmobiling into the West Hoover Addition, Yosemite National Park, Emigrant and Hoover Wilderness Areas, and the Pacific Crest Trail would be expected, but this would decline over time as enforcement of the special order prohibiting motorized travel in the area continues to be enhanced. Some of this use could be displaced to the Marine Corps training area north of the Sonora Pass Highway, which would remain open to snowmobile use. Backcountry skiing and snowshoeing could increase in areas closed to snowmobiling as enforcement is enhanced.

Proposed Action

With the lifting of the closure to snowmobiles, an additional 7,000 acres would be available for winter semi-primitive motorized recreation opportunities. Because the area has attractive snow conditions, use by snowmobilers would likely increase in the project area.

Due to the terrain, it’s likely that the project area would be attractive to the more experienced snowmobilers with more powerful machines. Less experienced

snowmobilers would likely continue to enjoy the Leavitt Lake Road corridor. As use increases, trash and human waste accumulations would likely increase. The greatest problems would likely occur at the Pickel Meadows road closure. If this reaches the point where trash disposal or rest rooms are needed, the proposed action provides for installing needed facilities.

There could be some displacement of visitors seeking a nonmotorized winter recreation experience within the project area. One commenter noted:

“For those few hardy individuals who travel as far as the West Hoover area in search of solitude and quiet, the proposed action would allow for snowmobile riders to zoom all across the area.”

Impacts to non-motorized recreation would be reduced after April 15 each year when the area would be closed to snowmobile use. This would be a prime season for nonmotorized recreation due to snow conditions. One commenter urged that the Forest Service:

“Close [the area to snowmobiles] for use by backcountry skiers in the spring months when backcountry ski use dramatically increases to take advantage of Sierra ‘corn’ snow.”

Primitive and semi-primitive nonmotorized winter recreation opportunities would continue to be available on the adjacent 40,000 acres of the West Hoover Addition that would remain closed to snowmobile use.

The proposed action would result in snowmobile use near the Pacific Crest Trail. The sights, sounds, and smells of these machines would detract from the non-motorized recreation opportunities along the trail.



Wilderness/Roadless

Affected Environment

The 7,000 acre project area represents 15 percent of the 47,000 acre West Hoover Addition. The California Wilderness Act of 1984 directed the Forest Service to evaluate the area and report to Congress as to its suitability as wilderness. In 1986 the Forest Service recommended the entire West Hoover Addition to Congress for designation as wilderness in its Toiyabe Land and Resource Management Plan.

The Plan directs that the area be managed with a wilderness prescription. The area had been closed to motorized and mechanized vehicles, including snowmobiles, five years earlier when a special order had been signed by the Forest Supervisor.

Wilderness Character

Wilderness areas are where “earth and community of life are untrammled by man, where man himself is a visitor who does not remain.” Wilderness values include:

- Natural Integrity (Integrity of environmental conditions): Outside the Leavitt Lake Road corridor, the area has been little affected by human influences. There is one user-created road that runs from the Leavitt Lake Road to Koenig Lake and one primitive mining access road from Leavitt Lake south to the Emigrant Wilderness Area. Overall, the natural integrity of the project area is high.
- Apparent Naturalness (A measure of the modification of the area by human activities): Outside the Leavitt Lake Road corridor, the only management modifications are trails and a primitive mining access road.

No other facilities have been constructed, and none are planned for the future. Overall, the apparent naturalness of the project area is high.

- Remoteness: Since the entire area is within three miles of either the Leavitt Lake Road or the Sonora Pass Highway, it does not meet the remoteness criteria for primitive recreation opportunities (USDA Forest Service. 2000 p. 3-213). However, during the winter the area feels quite remote. This is due in large part to the extensive travel time required by ski or snowshoe to reach the area due to the distance from the trailhead at Pickel Meadows. During the summer, much of the area feels quite remote. Leavitt Lake Road provides access to Leavitt Lake itself, and parts of the area are easier to reach. The area still feels remote, due to the distance from major development, and to the rugged road from Sonora Pass Highway to Leavitt Lake. Overall, the remoteness of the area under consideration is high.
- Solitude: During the summer, once a visitor leaves the trailhead at Leavitt Lake, the likelihood of encountering others is low. Other than dispersed camping in the vicinity of Leavitt Lake, and the Leavitt Lake Road, there are no developments in or near the project area. On developed trails, including the Pacific Crest Trail, a visitor would not be likely to encounter more than one or two others. Off the trails, a visitor would not be likely to encounter anyone else. During the winter, the opportunities for solitude are present,



although snowmobiling and Marine Corps training activities are evident in the Leavitt Lake Road corridor and can be heard on occasion from much of the project area. In addition, Marine Corps training occurs in the Sardine Meadows area and trespass snowmobiling occurs in much of the project area.

Nevertheless, overall opportunities for solitude within the project area are quite high when snowmobiles and Marine Corps training are not present.

- **Primitive Recreation:** The ability to meet nature on its own terms and the isolation from evidence of man are all outstanding qualities of this area. The area is bounded by high elevation peaks and lower elevations are forested, with streams coursing through. The area is used currently by skiers, snowshoers, hikers, backpackers, horseback riders, llama packers, fishermen, hunters and the Marine Corps. Overall, opportunities for primitive recreation in the project area are quite high.
- **Special Features:** The area is unique geologically, transitioning from the classic granite Sierra Nevada peaks to a more volcanic-appearing area. There are two Critical Aquatic Refuges located within the project area. They were established for the protection of the Yosemite toad.
- **Manageability:** The project area includes 15 percent of the West Hoover Addition, which has been recommended for inclusion in the National Wilderness Preservation System. The cherry-stemmed road to Leavitt Lake, and Leavitt Lake itself, introduce complications to the area's

manageability. This road nearly bisects the project area. The eastern part of the project area is contiguous with the bulk of the West Hoover Addition and the western part of the project area is contiguous with the Emigrant Wilderness. Overall, manageability of the area as wilderness is high.

Roadless Character

The 7,000-acre project area is 15 percent of the West Hoover Addition roadless area. This 47,000 acre roadless area includes the headwaters of the West Walker River. The area includes many of the features that define the character of roadless areas:

- **Soil, Water and Air Resources:** As noted in the air quality and watershed sections of this document, soil, water, and air quality in the area is relatively pristine.
- **Sources of Public Drinking Water:** None of the creeks in the area are used for public drinking water, although downstream, the West Walker River feeds aquifers that are used for drinking water in Antelope Valley.
- **Diversity of Plant and Animal Communities/TES Species Habitat:** Other than Yosemite toad and potential Great Grey Owl habitat, plant and animal communities found in the area are relatively common in the high Sierra Nevada.
- **Primitive, Semi-Primitive Non-Motorized and Semi-Primitive Motorized Classes of Recreation:** One of the values of roadless areas lies in their unique primitive, semi-primitive non-motorized and semi-primitive motorized recreation



opportunities. Activities such as snowmobiling that are prohibited in designated Wilderness and not readily available in more developed areas can occur on these lands (USDA Forest Service, 2000 pg 3-208). The area does not meet the remoteness criteria for primitive recreation since it is within three miles of the Leavitt Lake Road and the Sonora Pass Highway (USDA Forest Service, 2000 pg. 3-213), consequently opportunities for primitive recreation are limited. In addition, snowmobile intrusions into the area somewhat compromise the opportunities to find primitive recreation settings, especially around the perimeter of the area along the Leavitt Lake Road corridor. Opportunities for semi-primitive non-motorized recreation in the project area are high. The ability to meet nature on its own terms, the size of the area (>2,500 acres), and the limited evidence of man are all qualities of this area. The area is bounded to the west, south, and east by high elevation peaks and ridges. Lower elevations are forested, with streams coursing through. It is bounded on the north by the Sonora Pass Highway and is nearly bisected by the Leavitt Lake Road corridor. It is an area of natural beauty and is used currently by skiers, snowshoers, hikers, backpackers, horseback riders, llama packers, fishermen, and hunters. Opportunities for semi-primitive motorized recreation are limited by the current closure to snowmobiling although some snowmobilers have trespassed into the closed area.

- Reference Landscapes for Research, Study or Interpretation: Although no Research Natural Areas are located in the project area, the Rainbow Canyon Research Natural Area is about five miles to the southeast. The project area contains two Critical Aquatic Refuges for the protection of Yosemite toads. There are unique and representative characteristics contained within this area that make it valuable for research and study. The area has remained in a roadless and relatively pristine state, considering that a state highway exists to the north of the area; the Marine Corps use the Leavitt Lake Road corridor, Sardine Meadows and Koenig and Latopie Lakes for training; and the area has been subject to trespass snowmobiling.
- Landscape Character and Scenic Integrity: As discussed in the Visual Resources section, the area has high scenic integrity. This area represents the northern extension of the Sierra Crest escarpment. The natural beauty dominates over any minor modifications by man (USDA Forest Service, 1986 p. C-12).
- Traditional Cultural Properties and Sacred Sites: The Bridgeport Paiute Indian Colony was consulted on this project. Other than a general need for inventories in the area, no specific issues of concern to the tribe were identified with this project. (USDA Forest Service, 2005d).
- Other Locally Identified Unique Characteristics: The Marine Corps has identified the area as possessing unique characteristics needed for their training activities. The Pacific



Crest Trail, Emigrant and Hoover Wilderness Areas, and Yosemite National Park are located outside the project area, but near its boundaries.

Environmental Consequences

No Action

Under the no action alternative, the natural integrity of the area would be maintained at current levels and the apparent naturalness of the area would be maintained at a high level. Snowmobiles would not be seen within the area recommended for wilderness, but would continue to be present in the Leavitt Lake Road corridor, which nearly bisects the area. The sound of snowmobiles would be evident in parts of the area due to use along the Leavitt Lake Road corridor. Apparent naturalness would also be affected by the noise and sight of Marine Corps training activities in the Leavitt Lake Road corridor and Sardine Meadows. This would include winter troop transports, helicopters, live ammunition fire, and avalanche control explosions.

Remoteness of the area would continue at its current level. Solitude of the area would be maintained at the current level, which includes hearing the sounds of snowmobiles and Marine Corps training from the Leavitt Lake Road corridor and Sardine Meadows. Opportunities for primitive recreation would be unchanged from current conditions. There would be no effect on the scenic and geologic special features of the area. Manageability of the area as wilderness would remain high as the Pacific Crest Trail would continue to have a large non-motorized corridor, and snowmobile trespass activity could be more effectively monitored and enforced along the Leavitt Lake Road corridor. Overall roadless characteristics would not be affected, although enhanced enforcement would

likely decrease trespass snowmobile use of the area.

Proposed Action

Wilderness Characteristics

- **Natural Integrity:** Snowmobile use has little lasting impact on the natural features or landscape. As a transitory winter use it leaves few visible signs of past use. Since snowmobiles would be restricted to the season when the area is covered by snow, there should be no lasting impact to the natural integrity of the project area.
- **Apparent Naturalness:** During the summer when motorized use would not be allowed, the apparent naturalness of the area would remain very high. During the winter, the apparent naturalness would be impacted by motorized use. Snowmobile tracks would be evident on many areas, the sound of snowmobiles would be heard in much of the project area and the smell of exhaust would be present when snowmobiles are using the area. Due to snowmobile high marking and use for snowboarding access, snowmobiles would be visible in much of the project area, although on a temporary basis. These impacts are transitory in nature, and cause minimal physical changes to the ground. The occasional broken tree top would indicate snowmobile activity, but would not affect the overall apparent naturalness of the area.
- **Remoteness:** The remoteness of the area would be less during the winter



due to the presence of additional snowmobiles.

- Solitude: Opportunities for solitude within the project area would be reduced. During the winter snowmobiles would be encountered routinely. Because of high marking, there would be little opportunity for a visitor seeking solitude to escape the sights and sounds of motorized use. These affects would be transitory and would not affect the capability of the area to provide solitude should it be designated as wilderness. Opportunities for solitude would remain quite high during periods when snowmobiles and Marine Corps training are not present. There would be fewer of these periods than under current conditions. During the summer, the opportunities for solitude would be unchanged from current conditions.
- Opportunities for Primitive Recreation: There would be a reduction in the opportunities for primitive recreation in the 7,000 acre project area, mostly due to the limited compatibility of snowmobiling with skiing and snowshoeing. While visitors would still be able to enjoy non-motorized access, the experience would be reduced for many by the tracks, sights, noise, and smell of snowmobile activity. These affects would be transitory and would not affect the capability of the area to provide opportunities for primitive recreation should it be designated as wilderness. Skiers and snowshoers would need to travel farther away from the Leavitt Lake Road corridor

area into the Emigrant Wilderness or the remaining 40,000 acres of the West Hoover Addition to find untracked conditions and areas away from machine noise and activity. During the summer, the opportunities for primitive recreation would be unchanged from current conditions.

- Special Features: There would be little or no impact to the geologic or scenic integrity of the area (See Visual Quality analysis). Due to the proposed closure of the area during the spring, there would be little effect on the integrity of the Critical Aquatic Refuges in the project area (See Wildlife analysis).
- Manageability: Under the Proposed action, manageability of the area will be reduced. Once snowmobiles are allowed to access the ridge above Leavitt Lake, it will be hard to keep them from entering the Emigrant Wilderness as well as other nearby areas closed to motorized use, including Yosemite National Park, the Hoover Wilderness, the remaining closed areas of the West Hoover Addition, and the Pacific Crest Trail. This would reduce the manageability of all these areas. This would not affect the manageability of the area should it be designated as wilderness since the designation would close it to snowmobile use.

Overall, this project is likely to diminish some of the wilderness characteristics on a short term transitory basis. There would be minimal affect to the long term wilderness qualities should Congress decide to designate the area as wilderness. There would be no effect on the Forest Service



recommendation to Congress that this area be designated as wilderness.

Roadless Characteristics:

- Soil, Water and Air Resources: As noted in the air quality and watershed sections of this document, soil, water, and air quality in the area would be only minimally affected by the proposed action.
- Sources of Public Drinking Water: None of the creeks in the area are used for public drinking water.
- Diversity of Plant and Animal Communities/TES Species Habitat: As noted in the wildlife section, wildlife would be only minimally affected by the proposed action.
- Primitive, Semi-Primitive Non-Motorized and Semi-Primitive Motorized Classes of Recreation: Under the proposed action, there would be an increase in winter semi-primitive motorized recreation opportunities on 7,000 acres of desirable snowmobiling terrain. There would be some decrease in the opportunities for primitive and semi-primitive recreation opportunities, mostly due to the limited compatibility of snowmobiling with skiing and snowshoeing. This would occur until April 15 each year as conditions warrant. After that period closures to snowmobiling would provide opportunities for primitive and semi-primitive recreation opportunities.
- Reference Landscapes for Research, Study or Interpretation: No Research Natural Areas are located in the project area, and there would be no effect on the nearby Rainbow

Canyon Research Natural Area. The project area would remain in a roadless and relatively pristine state with little effect on its ability to serve as a reference landscape.

- Landscape Character and Scenic Integrity: Under the proposed action, this area would be open to snowmobiling. As discussed in the Visual Resources section of this document, such use would affect landscape character and scenic integrity on a short term transitory basis only. There would be no long term effect.
- Traditional Cultural Properties and Sacred Sites: None are known to occur in the area.
- Other Locally Identified Unique Characteristics: As noted in the Special Uses section, little effect on Marine Corps training is anticipated. Some trespass snowmobiling could continue to occur on the nearby Pacific Crest Trail, Emigrant and Hoover Wilderness Areas, and Yosemite National Park, however provisions are in place to adjust the proposed action should monitoring indicate the need to do so and it is expected that enhanced enforcement and education measures would reduce the amount of trespass.

Wildlife Habitat

Affected Environment

Wildlife species abundance and distribution are mainly a function of climate, topography, and vegetation. Vegetation within the project area varies with elevation and aspect, ranging from mixed conifer, lodgepole and aspen at the lower- to mid-



elevations to sub-alpine at the higher elevations. Wildlife species potentially found within the project area during the winter months can include Yosemite toad, great gray owl and pine marten. These species can initiate nesting, hibernate, or forage within the project area during the winter and spring. Nearby areas provide habitat for northern goshawks and mountain yellow-legged frogs. Macroinvertebrates inhabit water bodies throughout the area. The area also provides habitat for a variety of mammals, including mule deer and rodents as well as numerous bird species.

Most wildlife issues for this area are directly related to noise disturbance from snowmobiles and human presence, which can result in wildlife dispersal or avoidance of an area. During the winter months forage availability is low and the environment is harsher, causing naturally increased stress levels in non-hibernating wildlife that remain in the area instead of migrating to lower elevations.

Currently, wildlife species would be affected by snowmobile use and Marine Corps training activity in the Leavitt Lake Road corridor, Sardine Meadows, and the area north of the Sonora Pass Highway. Marine Corps training includes the use of over snow vehicles as well as hunting animals with primitive methods, such as rocks and snares, during their survival, evasion, resistance, escape training. This hunting is done under a permit issued by the California Department of Fish and Game.

Aquatic Habitats

Yosemite toads are found in the project area. The Yosemite toad has been identified as a candidate for listing as a Threatened or Endangered species under the Endangered Species Act, but is not listed at this time. It was also identified as a “species at risk” in

the 2004 Sierra Nevada Forest Plan Amendment.

Yosemite toads use meadow habitats surrounded by lodgepole pine or whitebark pine. They are most likely to be found in areas with thick meadow vegetation or patches of low willows. Yosemite toads use rodent burrows for overwintering and probably for temporary refuge during the summer. Breeding habitat includes the edges of wet meadows and slow-flowing streams (Jennings and Hayes 1994). Tadpoles have also been observed in shallow ponds and shallow areas of lakes. Tadpoles typically reach metamorphosis within 40 to 50 days after fertilization. Tadpoles are not known to overwinter (Jennings and Hayes 1994).

From 1976-1978 Kagarise (1980) studied the natural history and mating system of Yosemite toads near Tioga Pass, Mono County, California. The lakes within Tioga Pass Meadow that Kagarise studied were at about 10,000 feet elevation. Kagarise (1980) found that first spring emergence from winter hibernation ranged from end of April through beginning of June pending on weather conditions. Yosemite toads migrated about 600 feet over snow packs to breeding sites (Kagarise 1980). The elevation of Leavitt Lake is about 9,000 feet.

In 2001 California Department of Fish and Game found Yosemite toads near Latopie Lake, Koenig Lake, Leavitt Lake, and Sardine Meadows. Critical Aquatic Refuges have been established in these areas for the protection of the Yosemite toad.

The California Department of Fish and Game has adopted a Biodiversity Management Plan for this area that includes surveys of Yosemite toads every two years for the first 10 years, then once every 10 years thereafter (CDF&G, 2004 pgs 13 & 25).



Potential habitat for mountain yellow-legged frogs exists within the project area, however, in 2001 California Department of Fish and Game surveyed the entire project area and did not find any of the frogs. The Department has adopted a Biodiversity Management Plan for this area, which identifies sites suitable for mountain yellow-legged frog restoration (CDF&G 2004, pg 25). The Biodiversity Management Plan does not identify any sites within the project area that are suitable for mountain yellow-legged frog restoration. The mountain yellow-legged frog has been identified as a candidate for listing as a threatened or endangered species under the Endangered Species Act, but is not listed at this time. It was also identified as a species at risk in the 2004 Sierra Nevada Forest Plan Amendment. Habitat consists of lakes, ponds, tarns, and streams from 4,500 to over 12,000 ft. (Stebbins 1985 pgs 86 & 87).

Freshwater benthic macroinvertebrates are animals without backbones that are larger than ½ millimeter or about the size of a pencil dot. These animals live on rocks, logs, sediment, debris, and aquatic plants during some period in their life. The benthos include crustaceans such as crayfish, mollusks such as clams and snails, aquatic worms and the immature forms of aquatic insects such as stonefly and mayfly nymphs. Because of their abundance and position as "middleman" in the aquatic food chain, macroinvertebrates play a critical role in the natural flow of energy and nutrients. As macroinvertebrates die, they decay, leaving behind nutrients that are reused by aquatic plants and other animals in the food chain. Macroinvertebrates are found within the project area.

Bird Habitat

Although the last recorded sighting for great gray owls was in 1960, the Sardine

Meadows area includes a great gray owl Protected Activity Center. Surveys for the great gray owl ended in 1982.

Potential foraging habitat also occurs for the northern goshawk and a survey was conducted about five miles southeast of the project area in better habitat. However, no goshawks were detected during this survey.

Habitat for a wide variety of other birds exists in the area. This includes birds identified as management indicator species and neotropical migratory birds (USDA Forest Service 2005b).

Mammal Habitat

Subnivean species are small animals that live under the snow during the winter. Within the project area they can include shrews, voles, pocket gophers and mice. Subnivean mammals are often active both day and night and are active throughout the year. They spend most of their time in or on the ground, and, during winter, they are most often found under the snow. Ecologically, these mammals are important prey species for a wide variety of birds and mid-sized carnivores, such as great gray owls and pine martens.

Forest carnivore surveys were conducted in 1993 and in 2003. The only forest carnivore found in 1993 was a single American marten. No forest carnivores were found in 2003. Potential habitat does occur for American marten within the project area.

There is no wintering mule deer habitat present within the project area. Mule deer are migratory in this area and are only present during the summer months. Mule deer do not occupy this area in the winter when snowmobiles are present.

There is no suitable fawning habitat within the project area. Fawning typically occurs northeast of the project area, behind the



Marine Corps Mountain Warfare Training Center (USDA Forest Service, 2005b).

Plants

There is potential habitat for several Forest Sensitive plant species in the project area including slender, dainty, and upswept moonwort, star draba, Marsh’s bluegrass, and Masonic Mountain jewel flower. There is also habitat for Spjut’s bristle moss, which was identified in the Sierra Nevada Framework as a special interest species.

Environmental Consequences

No Action

In the Leavitt Lake Road corridor, snowmobile use could level off or decline slightly in the short term, but increase gradually over the long term. Marine Corps training would continue in the corridor under this alternative. This would result in continued potential wildlife displacement and avoidance of this corridor.

The Sonora Pass Highway and areas north would remain open to snowmobiling and likely see an increase in use as enforcement of closed areas increases south of the Highway. Potential wildlife displacement and avoidance could increase north of the Highway. In the rest of the project area, enhanced enforcement would likely result in a decline in trespass snowmobiling, decreasing potential wildlife displacement and avoidance.

Aquatic Habitat

Snowmobiling and Marine Corps training would continue in the Critical Aquatic Refuge by Leavitt Lake. If this activity is affecting Yosemite toad habitat or potential mountain yellow-legged frog habitat, it would continue to do so under this alternative.

In the Sardine Meadows Critical Aquatic Refuge, trespass snowmobiling would likely decline as enforcement is enhanced. Marine Corps training activities would continue. If this activity is affecting Yosemite toad habitat, it would continue to do so under this alternative, but to a lesser extent. The remaining Yosemite toad habitat and potential mountain yellow-legged frog habitat, near Latopie and Koenig Lake, would likely see a decrease in snowmobile use as enforcement is enhanced, decreasing any potential for impacts to their habitat.

If current levels of snowmobiling and Marine Corps training are affecting macroinvertebrates, it would continue to do so under this alternative.

Bird Habitat

Great gray owl activity would continue to be affected by snowmobile use in the Leavitt Lake Road corridor and along the Sonora Pass Highway and by continued Marine Corps training activities, particularly in Sardine Meadows.

If this alternative results in displacing snowmobile use north of the Sonora Pass Highway, an occupied northern goshawk protected activity center could be affected by increased noise and disturbance.

No changes in habitat for management indicator bird species or neotropical migratory birds would occur

Mammal Habitat

Subnivean mammal habitat would continue to be affected by snow compaction and carbon dioxide accumulation along the Leavitt Lake Road and Sonora Pass Highway.

Continued use of the Sonora Pass Highway and the Leavitt Lake Road for snowmobiling and Marine Corps training would include



disturbance to pine martin habitat during foraging along groomed trails and travel corridors, which may lead to displacement or avoidance of the area.

The activities under this alternative would not have an impact on mule deer winter ranges. Fawning occurs outside of the proposed dates for snowmobiling use and mainly occurs northeast of the project area near the Marine Corps Mountain Warfare Training Center. There will be no direct or indirect effects of the proposed action on mule deer or their habitat within the project area.

Plants

Although habitat is present in the project area for several Forest Sensitive plants as well as one special interest plant, all of these species are dormant during the winter months when snowmobiling activity would be occurring. Damage to potential habitat for these species could also cause an effect by snowmobiles trampling exposed meadows or riparian areas where many of these species occur. Under the no action alternative, it is assumed that snowmobiles will continue to use the area although that use is expected to decline over time.

Proposed Action

Under the proposed action alternative, snowmobile use would likely increase over time within this area. Snowmobiling would be legal within the Leavitt Lake and surrounding areas as well as the Leavitt Lake Road corridor and Sonora Pass Highway and areas north of Sonora Pass Highway.

Increased snowmobiling throughout the 7,000 acre project area could increase disturbance to wildlife found in this area. This increase in snowmobiling would occur during the winter months when forage

availability is low and the environment is harsher. This increased use within the project area can lead to increased stress on wildlife species. The proposed closure date of April 15 would limit potential impacts in the spring, when more wildlife or plant species would be present in the area or emerging.

Aquatic Habitat

No adverse impacts to Yosemite toads during the spring breeding season are expected to occur as a result of implementing the proposed action because the closing date for snowmobile use would be April 15 of each year unless the Bridgeport District Ranger determines on an annual basis that another closing date is appropriate and consistent with the need to protect resources from potential damage. On April 15, based on Kagarise's (1980) study, Yosemite toads should still be hibernating. The closure date could vary on an annual basis if on-the-ground conditions warrant.

Direct, indirect, and cumulative effects to Yosemite toads and to potential habitat for mountain yellow-legged frogs could potentially occur as a result of snowmobile exhaust pollutants accumulating in the snow. Exhaust pollutants may initially persist on the surface of the snow, but as the snow melts the exhaust pollutants could dissipate or melt into nearby water sources, potentially increasing exposure to toads and other aquatic organisms. Investigations have shown increases in some contaminants in water exposed to snowmobile exhaust (Adams 1974. pg 367). Accumulation may also occur in sediments (Lazrus et al. 1970. pg 58). Responses of Yosemite toads to potentially increased concentrations of exhaust pollutants may result in increases in mortality rates. On a cumulative basis, Yosemite toads could also be affected by



pollutants from the current level of snowmobile and Marine Corps vehicle use as well as habitat damage from summertime use of vehicles around Leavitt Lake, resulting in further potential mortality in this area.

The discussion of these impacts is somewhat speculative in nature because there do not appear to be any studies that directly link the effects of snowmobile exhaust pollutants to Yosemite toads. To determine if snow concentrations of exhaust pollutants do increase as a result of implementing the proposed action, snow samples would be collected before and after implementation of the proposed action. Toad populations within the project area would also be monitored and based on monitoring results adjustments in snowmobile use could be made, limiting the potential for adverse impacts.

No adverse impacts to Yosemite toads are expected to occur as a result of erosion or directly driving over Yosemite toad vegetative habitat. Because the closing date for snowmobile use would be April 15 of each year unless the Bridgeport District Ranger determines on an annual basis that another closing date is appropriate and consistent with the need to protect resources from potential damage, snowmobiles should not be driving over exposed soil or fully exposed Yosemite toad vegetative habitat. During the open season snowmobiles may drive over the top and damage the tops of individual willows, but no measurable impacts to the overall general habitat are expected.

No adverse impacts to Yosemite toads or mountain yellow legged potential habitat are expected to occur as a result of snowmobiles driving across open water on Leavitt, Latopie, or Koenig Lake. Driving across open water has the potential to pollute the

water with snowmobile exhaust and spilled oil and/or gas, and to stir up sediments on the bottom of the lakes. This could result in mortality of Yosemite toads. Because the closing date for snowmobile use would usually be April 15 of each year, Leavitt, Latopie, and Koenig Lakes should still be covered by ice.

Impacts to macroinvertebrates would likely be site specific and concentrated to a relatively small area, such as a snowmobile fuel spill. Several mechanisms of recolonization are available to macroinvertebrates: (1) migration from the deeper hyporheic zone to surface substrates; (2) upstream movements; (3) downstream drift from upstream or tributary areas; and (4) aerial recolonization by adults of many insects (Wallace 1990 pg 611). Should any site specific areas be affected by the proposed action macroinvertebrates would likely recolonize the area. Consequently, the proposed action would not likely jeopardize the continued existence of a viable population of macroinvertebrates.

Bird Habitat

A great gray owl PAC is located within the Sardine Meadows area near the Sonora Pass Highway. If any great gray owls were to occupy this site in the future, increased snowmobile use as well as continuing Marine Corps training could overlap slightly with the owls' courtship period, which can begin as early as April 10 (USDA Forest Service, 2005e). There is current noise and human presence in the area from Marine Corps training and trespass snowmobiling and the cumulative impacts of this activity, in conjunction with projected increased in snowmobiling could make the area less attractive to potential nesting or foraging great gray owls.



Due to the lack of suitable nesting habitat in the area, no impacts to northern goshawk are anticipated.

Habitat for management indicator species and neotropical migratory birds could be affected by snowmobiles damaging exposed vegetation. This impact is expected to be minimal and not result in reductions in the number of birds or loss of their habitat (USDA Forest Service, 2005b).

Mammal Habitat

Subnivean mammal habitat would continue to be affected by snow compaction and carbon dioxide accumulation along the Leavitt Lake Road corridor and the Sonora Pass Highway. Snowmobile use in the 7,000 acre project area could affect subnivean species. These affects would be minimal due to the expected dispersed nature of snowmobiling, which would not result in a major increase in snow compaction (see watershed analysis).

Some effects to marten habitat may occur indirectly from snow compaction; however, the effects are expected to be minor and would not limit marten from occupying the area. Furthermore, no changes to important components of marten habitat, such as canopy cover or down woody debris, will occur from the proposed action.

Under this alternative it is assumed that snowmobile use would increase throughout the project area. Due to this increased use, disturbance to pine marten would also increase. This disturbance would include displacement or avoidance of pine marten from this area.

On a cumulative basis Marine Corps training activities may include trampling to exposed vegetation and noise disturbance. American marten may be present during these activities and may be displaced due to

disturbance caused by noise and human presence.

The activities under this alternative would not have an impact on mule deer winter ranges, and mule deer are not present within this area during winter. Fawning occurs outside of the proposed dates for snowmobiling use and mainly occurs northeast of the project area near the Mountain Warfare Training Center (MWTC). Under the proposed action there will be no direct or indirect effects on mule deer within the project area, therefore there will be no effect on population levels.

Although some trampling of browse vegetation may currently occur, it is expected this disturbance would have no affect on mule deer fawning habitat due to the high levels of snow which cover the most important browse species such as bitterbrush and sagebrush.

Plants

Although habitat is present in the project area for several Forest Sensitive plants as well as one special interest plant, all of these species are dormant during the winter months when snowmobiling activity would be occurring. Damage to potential habitat for these species could also cause an effect by snowmobiles trampling meadows or riparian areas where many of these species occur. However, snowmobiles would be authorized within the project area only during the winter months until April 15th or when the Bridgeport District Ranger determines on an annual basis that a later closing date is consistent with the need to protect resources from potential damage.



Special Uses

Affected Environment

The U.S. Marine Corps has an interagency agreement with the U.S. Forest Service to use the Leavitt Lake area and Sardine Meadows for Mountain Warfare training during winter months. Leavitt Bowl provides the unique opportunity to train military forces in terrain and climate that closely approximates that found in Afghanistan and Korea. The altitude, terrain, and weather patterns in Leavitt Bowl also allow the Marine's Mountain Warfare Training Center (MWTC), stationed at nearby Pickel Meadow, to begin winter and cold weather training earlier than would be possible in the 46,000 acres of training area north of Sonora Pass Highway (MWTC Map).

Normal training activities that occur in the Leavitt Lake Road corridor and immediate lake vicinity are the Scout Skiers Course, including skiing and snowshoe movement of troops, basic bivouac, and small arms fire with up to fifty personnel during a two day course four times over the winter.

The Engineers Course consists of skiing and snowshoe movement, basic bivouac, ice breaching, avalanche initiation with small TNT charges, and small arms fire for up to 30 personnel for four days four times each winter.

The Survival Course consists of deploying shelters and ice fishing. Up to thirty personnel are on site for 4½ days three times each winter.

The Mountain Leaders Course consists of basic bivouac, skiing and snowshoeing, ice breaching, cold water immersion, small arms fire and avalanche initiation with small TNT charges for up to 40 personnel for two three-day periods three times each winter.

The Reserve Unit Operations Course consists of basic bivouac, skiing and snowshoeing, and expedient shelter for up to 500 personnel for seven days occasionally when the U.S. Marine Corps Reserve units conduct training at MWTC.

Activities that occur outside the Leavitt Lake Road corridor including Sardine Meadows, are conducted in conjunction with the above training courses. Training in these areas is predominantly foot traffic on snowshoes or skis and consists of activities associated with the Scout Skiers Course, Engineers Course, including avalanche initiation and ice breaching at Latopie and Koenig Lakes, Survival Course, Mountain Leaders Course, and Reserve Unit Operations.

Training support also includes use of BV-206, which are tracked over-snow transport vehicles, on the Leavitt Lake Road and area surrounding the lake. The vehicles are limited to the Leavitt Lake Road corridor on groomed snow or road surfaces due to mechanical limitations and rollover risks. Snowmobiles are permitted outside the Leavitt Lake Road corridor for medical safety support and casualty evacuation.

Aviation activity in the area consists of troop helicopter landings and simulated close air support. Helicopter landings occur within the Lark Landing Zone, located within the Leavitt Lake Road corridor, and in Kiwi and Robin Landing Zones, located just south of Sonora Pass Highway adjacent to Sardine Meadows.

Avalanche initiation occurs for troop safety, as well as for instruction in the hazards and use of avalanches in military operations. Small TNT charges utilizing non-electric blasting caps are employed on suitable slopes within Leavitt Bowl. Avalanches are initiated under supervision of certified instructors and do not occur in Sardine

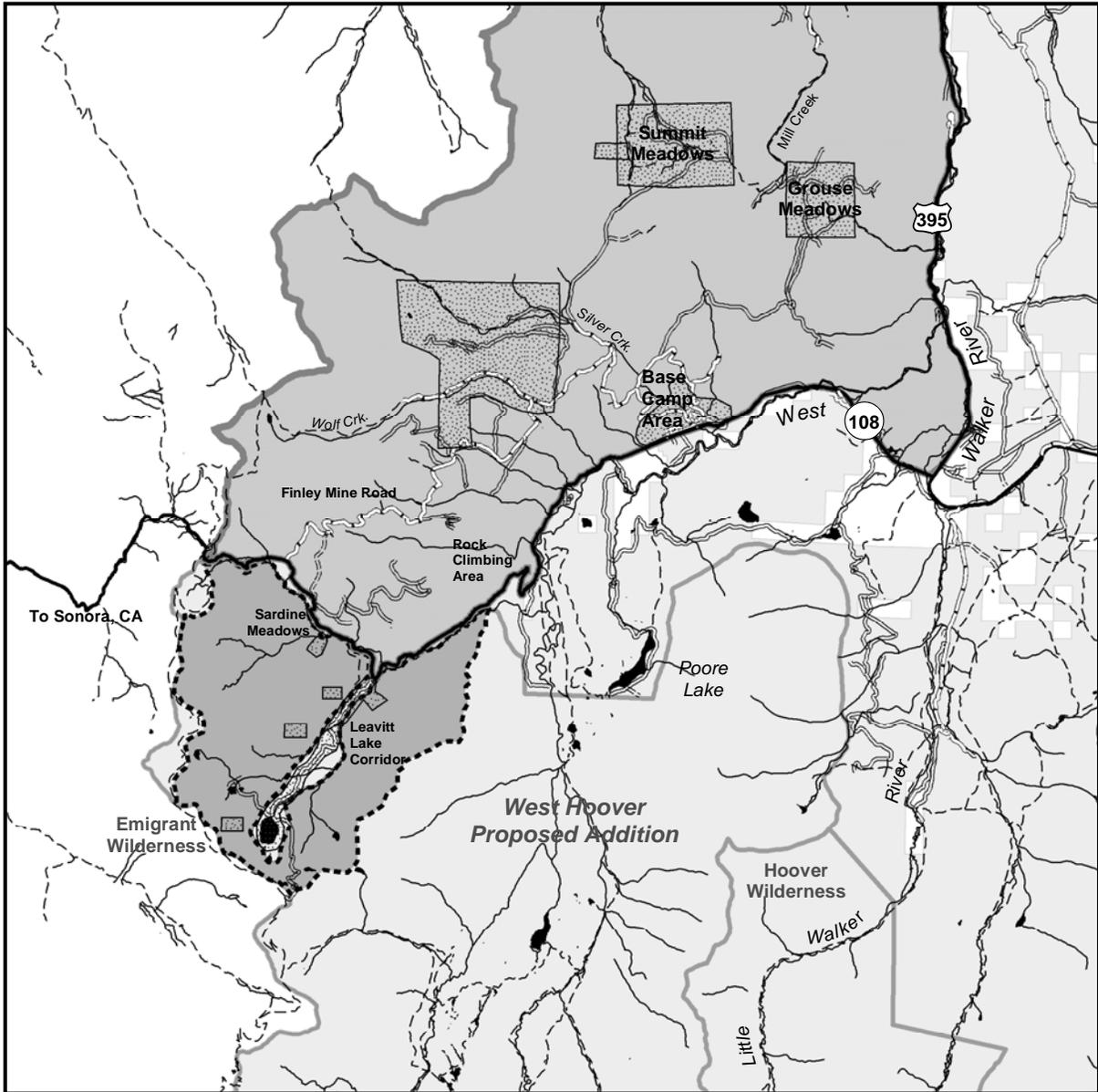


Meadows. There are three small arms live fire ranges in Leavitt Bowl and Sardine Meadows used only during winter.

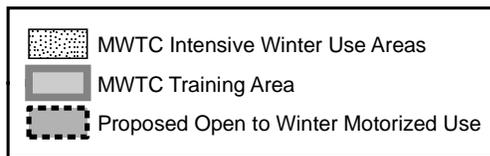
All activities are conducted outside the boundaries of the Wilderness areas. Special training for small groups occasionally is conducted in the surrounding proposed wilderness, approved by the Forest Service on a case-by-case basis.

During active operations, the Marine Corps posts travel safety warnings and stations sentries to warn the public of hazardous training activities. To date, there have not been any mishaps with training activities and recreational activities occurring in the same vicinity. The Marines have rescued lost, stuck, and injured snowmobilers in the area in the past on many occasions.

Winter training also occurs in the training area north of Sonora Pass Highway. Summit and Grouse Meadows and the areas surrounding Wolf and Silver Creeks are the main winter training areas for large battalions as well as smaller units. Snowmobile use by recreationists occurs in all three of the training areas, according to MWTC Operations officers. Snowmobile use has also been noted in the Mill Creek area north of Grouse Meadows. The main access for recreationists on snowmobiles is the Finley Mine Road north of Sonora Pass Highway near Sonora Pass.



Hoover West Travel Management Plan



US Marine Corps
Mountain Warfare
Training Center
(MWTC)



This GIS product was compiled from various sources and may be corrected, modified, or replaced at any time. For more information, contact the GIS coordinator at the Bridgeport Ranger District, Bridgeport, CA (760) 932-7070.





Environmental Consequences

The alternatives would affect Marine Corps training activities in three primary areas: 1) The Leavitt Lake Road corridor, which is currently open to snowmobiling and would continue to be open under either alternative; 2) Sardine Meadows, which is currently closed to snowmobiling and would continue to be closed under no action, but would be open to snowmobiling under the proposed action; and 3) Marine Training Areas north of the Sonora Pass Highway, which are currently open to snowmobiling and would continue to be open under either alternative. Few, if any impacts are anticipated to Marine Corps avalanche initiation and ice breaching at Koenig and Latopie Lakes.

No Action

Leavitt Lake Road Corridor. Under the no action alternative snowmobile use in the Leavitt Lake Road corridor is expected to level off or decrease slightly in the short term and increase gradually over the long term. This would likely result in minimal effects on Marine Corps training activities.

Sardine Meadows. The Sardine Meadows area is currently closed to snowmobiling, but trespass use does occur in areas used by the Marine Corps. It is expected that enhanced enforcement would decrease trespass snowmobile use in the area over time, therefore decreasing the potential for conflicts with Marine Corps training activities in Sardine Meadows.

North of the Sonora Pass Highway. It is expected that increased enforcement coupled with the limited area legally available for snowmobile use south of the Sonora Pass Highway would increase snowmobile use north of the Highway. This area is currently open to snowmobiling and would continue to be open under this alternative. Increased

snowmobile use north of the Sonora Pass Highway would increase the potential for conflicts with Marine Corps training north of the Highway.

Proposed Action

Leavitt Lake Road Corridor. This corridor is currently open to snowmobile use and would continue to be open under the proposed action. Snowmobile use is expected to level off or decrease in the short term due to the availability of additional legal use areas. This would decrease the potential for interference with Marine Corps training activities in the short term. Over the long term, use in the Leavitt Lake Road corridor would likely increase, therefore increasing the potential for conflict with Marine Corps training activities.

Sardine Meadows. This area is currently closed to snowmobile use, but experiences some trespass. Under the Proposed action, this area would be opened to legal snowmobiling. Use is expected to increase in both the short and long term. As public snowmobile use increases, so does the potential for interference with Marine Corps training activities. Should use increase to the point where public snowmobiling adversely impacts the ability of the Marine Corps to train its troops, the proposed action provides for adjustments in snowmobile management.

North of Sonora Pass Highway. This area is currently open to snowmobiling and would continue to be open under the Proposed Action. Little change in snowmobile use is expected to occur, primarily because of the availability of areas south of the Highway for snowmobile use. Therefore, the potential for interference with Marine Corps training activity would not change.



Economics

Affected Environment

Several commenters mentioned the importance of snowmobiling to the economy of Bridgeport and other communities in the area. Others indicated that nonmotorized recreation was important to the economy. The Bridgeport Chamber of Commerce web site lists two pack stations, two sporting goods stores, three fishing guides, two grocery/general stores, two gas stations, sixteen motels/cabins/RV parks, and eleven eating places. Most of these cater primarily to anglers during the summer and many are closed during the winter. Winter customers are particularly important to businesses open year round because their purchases help offset the capital investment expenses in property and equipment that are incurred to serve peak business levels during the summer.

Seasonal economic concerns are evident in Mono County’s Job Creation Plan (Mono County, 1999. p. 18, 19):

“One of the most challenging economic issues currently facing Mono County communities is the seasonal nature of most of their target tourist activities. Vacationing motorists, fishermen, and campers overwhelm certain parts of the county during the summer, and then abandon them during the other seasons of the year.”

“If the county and the local communities are going to invest resources in new business creation, they will get the largest return on their overall investment by focusing on new activities for the off season. . . . In summer communities, this means finding new cold-season activities that will draw visitors, such as ice fishing, cross country skiing, snowmobiling and ice climbing”

Mono County has a population of about 11,000 residents of which only about eight percent live in the Bridgeport area (Mono County, 1999. p. 4). About half live in

Mammoth Lakes. Of the major private business employers in Mono County that operate in the winter, none are located in Bridgeport (California Employment Development Department, 2005). Therefore, while business generated from winter recreation in the Sonora Pass area, both motorized and non motorized, is unlikely to affect the overall level of economic activity in Mono County, it is likely important to some individual businesses in Bridgeport.

Environmental Consequences

No Action

Under the no action alternative, snowmobile use could level off or decline. There could also be an increase in backcountry skiing and snowshoeing. Any net declines in use could result in losses to individual businesses in Bridgeport, but are not likely to affect the overall economy of Mono County.

Proposed Action

Potential increases in snowmobile use could benefit individual businesses in Bridgeport, but would not likely be of a magnitude to affect the overall economy of Mono County.

Watershed Condition

Affected Environment

The project area is located in the headwaters of the West Walker River. The headwaters consist of two perennial drainages; Leavitt Creek and McKay Creek. Lakes in the project area include Latopie, Koenig, and Ski. Elevations range from about 7,800 feet to over 11,500 feet at Leavitt Peak. Precipitation ranges from 25 to 60 inches and falls mainly as snow. Average mid-winter snow depths range from about 24 inches at 7,200 feet elevation, 63 inches at



8,800 elevation and 144 inches at 9,400 feet. Topography is very steep, ranging from 30 percent slopes to over 70 percent slopes as one approaches the crest.

Avalanche conditions approach severe after significant snowfall. Due to the steepness of the area, snow will avalanche during and soon after heavy snowfall. After initial snow stabilization, avalanches may be triggered by snowmobiles and cross country skiing.

Water quality in Leavitt and McKay Creeks is generally good throughout the year. A reduction in water quality may occur during spring snow melt, when increased flows detach sediment, transporting it as a suspended load downstream, to be released in the lower gradient reaches. This is a natural process that flushes sediment that has accumulated in the higher gradient reaches during low flow periods. Water quality improves as soon as flows decrease.

High elevation riparian habitat along both perennial drainages and associated lakes and tributaries within the project area boundary appears to be in good condition. Habitat is well connected along channels and with isolated wet areas. Outside the project area boundary and within the Leavitt Lake Road corridor, riparian vegetation around Leavitt Lake has been adversely affected by vehicle use and camping along the lakeshore.

There are about 5½ miles of native surface road in and around the project area. The roads are confined to the Leavitt Lake Road corridor and along the northeast edge just outside of the area adjacent to Sardine Creek. Another road in the area is a short user created track connecting Leavitt and Koenig Lakes. Another closed road runs from Leavitt Lake south to the ridge at the Mono County – Tuolumne County Line. A low water crossing by the road adjacent to Leavitt Creek supplies a small amount of

sediment during higher use periods. Otherwise, the area is unroaded.

Geology of the area is comprised of volcanic derived flows that overlay sandstone. Sandstone is highly erosive and is characterized by bare and eroding slopes adjacent to upper Leavitt Creek. The area is sensitive to ground disturbance and may explain, in part, why the West Walker River is listed as ‘impaired’ for sediment and siltation by the Lahontan Regional Water Quality Control Board, the regulatory agency responsible for this portion of California. Leavitt Creek and Sardine Creek, into which it flows, are not listed as impaired.

Snow samples collected in 2005 indicate the presence of unburned lube oil and polycyclic aromatic hydrocarbons along the Leavitt Lake Road corridor and in Sardine Meadows (Desert Research Institute, 2005). The hydrocarbons include compounds identified as carcinogens. The presence of these compounds could be due to snowmobiles, particularly those with two stroke engines (Kado et al 2001. pg. 23). The highest concentration of lube oil markers was noted along the Leavitt Lake Road. Follow up surveys would be completed in 2006 to determine changes in the levels of these compounds.

Environmental Consequences

Snowmobiles can affect snowpack chemistry and the transport of pollutants to surface waters. Another concern is sediment loading in streams caused when snowmobiles and other snowmobiles cross drainages that are bare of snow, to access other snow covered areas. This happens mainly in the spring after snow has collapsed over the channels or will no longer hold up to the weight of a vehicle.



A study in 1998 at Yellowstone National Park was conducted to investigate the relationship between snowmobile use and snowpack chemistry (US Geological Survey, 1988). The purpose of the study was to determine if emissions from snowmobile traffic are detectable in a larger sampling network of seasonal snowpack and to investigate whether emission levels tend to diminish rapidly with distance from the source. The study was concentrated on high use areas such as groomed routes.

Preliminary analysis of snowmelt-runoff chemistry from five of the snow sampling sites indicate that elevated emission levels in snow along highway corridors (groomed routes with concentrated use) generally are dispersed into surrounding watersheds at concentrations below levels likely to threaten human or ecosystem health.

Within the 7,000 acre project area boundaries, concentrated use along one or two routes is not typical. Use generally tends to be of a dispersed nature. More concentrated use is found outside the project area boundaries along the Leavitt Lake Road corridor and the Sonora Pass Highway. Use is most common in those periods after storms when the snowpack has naturally compacted enough to support snowmobile travel. The incidence of use in Yellowstone is much higher due to guided tours over snow 'highways' that occur almost anytime during the winter.

Compaction of snow by snowmobiles is not a concern in this area because use is dispersed and not concentrated in groomed routes. The light compaction that results from dispersed use is covered by each new snowfall reducing the likelihood that a new track will exactly follow the buried one. Also, compaction breaks down after being covered by new snow, when the temperature

of the snowpack reaches 32 degrees, and as structure changes through melt water flow.

No Action

Based on the studies in Yellowstone and due to the dispersed nature of use likely to occur in the project area, concentrations of organic and inorganic compounds emitted through snowmobile exhaust and spilled during refueling would not likely reach levels that would cause harm to the ecosystem or human health. In addition, the advent of the four-stroke engine would reduce the level of exhaust emissions and the compounds that enter the snowpack (snowmobile exhaust exits under the vehicle, close to the snow surface) from the two-stroke combustion process.

Confining use to the Leavitt Lake corridor should result in a lower frequency of use in high elevation avalanche prone terrain, reducing the potential for injuries and property damage from avalanches. This will also decrease the potential for other watershed related impacts.

Proposed Action

Use is likely to rise due to the proposed action and increasing recreational snowmobiling as the population increases. This could be offset, fully or in part, by a reduction in the number of snowmobiles with two-stroke engines.

The resource protection measures that would be implemented in the proposed action should limit the potential for harmful impacts to snowpack chemistry from snowmobile exhaust emissions. By controlling the length of the season of use, the amount of organic and inorganic compounds exhausted directly into the snowpack should be reduced as well as the number of spills due to refueling.



Snowmobile use will not be limited to the Leavitt Lake corridor. As population increases, snowmobile use in high elevation avalanche prone terrain may increase, raising the potential for injuries and property damage from avalanches. This may be offset, however, by education focused on snowmobile safety, posting avalanche warnings, identifying the location of avalanche prone terrain, and the hazards of aggressive riding during unstable snow conditions.

Air Quality

Affected Environment

A primary feature of the atmospheric regime in the Sonora Pass area is the pattern of wind flows into the area from the Central Valley of California. The strength of this pattern depends on the amount of heating and thus is strongest in summer, beginning in April and decreasing in October. Most of the precipitation in the area takes place during the winter months, mainly in the form of snow. Winter storms have strong vertical mixing, diluting local and upwind pollutants to low levels while bringing air from the very clean North Pacific sector.

Under the federal Clean Air Act, all states are required to show compliance with the National Ambient Air Quality Standards, established by the US Environmental Protection Agency. The California Air Resources Board acts as an intermediary between the local air quality agencies and the Environmental Protection Agency. Air quality management in Mono County falls under the authority of the Great Basin Unified Air Pollution Control District. The California and federal air quality standards apply to the Sonora Pass area.

The project area is located entirely within Mono County. It is located adjacent and to the east of the Emigrant Wilderness Area, a Class 1 Visibility Area. Two other Class 1 areas are nearby – Yosemite National Park and the Hoover Wilderness.

Snowmobiles generate exhaust emissions that include carbon monoxide, hydrocarbons, particulate matter, and oxides of nitrogen. Toxic air pollutants include benzene, 1,3-butadiene, formaldehyde, and acetaldehyde. Snowmobiles emit relatively high levels of unburned and incompletely burned fuel and lubrication oil, relative to on-highway vehicles subject to emission regulations. This is due to the design of engines used on nearly all 2- stroke cycle engines. Without separate induction and exhaust strokes, 2-stroke cycle engines tend to expel large amounts of fuel with exhaust gases. Cleaner-burning 4-stroke cycle snowmobiles are being manufactured and are noted to be much cleaner than the older 2-stroke models. Although oxides of nitrogen are seven to ten times higher, four stroke engines emit 95 percent less hydrocarbons, 85 percent less carbon monoxide, 90 percent less particulates, and 90 percent less toxic hydrocarbons, such as 1,3 butadiene, benzene, formaldehyde, and acetaldehyde (Lela and White, 2002, p. vii). Both two and four stroke snowmobiles are used in the Sonora Pass area.

The State of California does not have any emissions regulations in place at this time specific to snowmobile use. However, the US EPA published a final rule that sets emission standards for snowmobiles manufactured in 2006 and later. The Forest Service will adhere to all air quality emissions standards.

As of 2004, Mono County was in non-attainment for the federal and state standards for particulate matter and the state standard



for ozone. Ozone is primarily a concern in the summer. Particulates are primarily a concern in the summer, but there are winter concerns associated with dust in the Mono Lake basin and with wood smoke in the June Lake and Mammoth Lakes area.

Environmental Consequences

No Action

Few changes in air quality would occur in the short term since snowmobile use in the area is expected to level off or decline as enforcement is enhanced. In the long term, a gradual increase is expected because of overall population growth, but this is unlikely to substantially affect air quality since cleaner four stroke vehicles are expected to gradually replace dirtier two stroke machines.

Proposed Action

A short-term increase in snowmobile use is anticipated, primarily due to expected publicity related to the decision.

Yellowstone National Park recently completed a detailed snowmobile air quality analysis. That analysis found that violations of the National Ambient Air Quality Standards were unlikely under any of the alternatives studied, including the no action alternative, which was modeled at 765 snowmobiles per day during the peak season (National Park Service, 2003 pp. 186, A-3). This level of use is orders of magnitude greater than use in the Sonora Pass area. Use levels observed at the Pickel Meadows trailhead over the last two years have amounted to about seven trucks/trailers with about 20 snowmobiles on weekdays and about 35 trucks/trailers with about 100 snowmobiles on weekend days (USDA Forest Service, 2005c). Even if the proposed action would double the current use; it would still amount to a fraction of the

use in Yellowstone. Although total emissions depend on a number of factors including hours of operation per day and climatic conditions, it appears unlikely that the proposed action would result in violations of the Clean Air Act (Shively, 2005).

Given the relatively light level of snowmobile use it's also unlikely that visibility standards in the nearby Class 1 areas of Yosemite National Park and the Emigrant and Hoover Wilderness Areas would be violated because winter storms in this area dilute local and upwind pollutants to low levels.

In the long term, as snowmobile use increases gradually it is also expected that the snowmobile fleet in the area will include greater and greater percentages of cleaner four stroke engines. However, if any potential for violations are reported by the Great Basin Unified Air Pollution Control District, the Forest Service will take action to ensure compliance.

In addition to air quality standards there are also concerns related to toxic air pollutants including benzene, 1,3-butadiene, formaldehyde, and acetaldehyde. Some of these compounds can cause cancer. A study of snowmobile emissions in Yellowstone indicated that Park Service employees who service snowmobiles or who are located at the main West Yellowstone entrance were exposed to concentrations of benzene approaching, but not exceeding, National Institute for Occupational Safety and Health Recommended Exposure Level (Kado et. al, 2001 pp. 17-18). Sampling occurred on days when about 750 snowmobiles per day used the West Yellowstone entrance. Exposure levels near those in the study are highly unlikely because Forest Service personnel do not service snowmobiles, are not stationed at the entrance, and would not



be passed by 750 snowmobiles in the Sonora Pass area.

In summary, it is unlikely that any air quality or health standards would be violated by the proposed action.

Visual Quality

Affected Environment

The West Hoover region has some of the most dramatic scenery in the nation. The character of this landscape is predominantly natural, affected mostly by the natural processes of erosion and plant succession. The dominant landforms are the peaks of the eastern Sierra – Ehrnbeck, Walker, Tower, and Leavitt - all over 11,000 feet. Below these lie the Piute Meadows complex dotted with high alpine lakes. Cultural factors play a minimal role, limited to a few historic cabins and pack station facilities.

Vegetation ranges from alpine tundra through groves of lodgepole and Jeffrey pine to aspen intermixed with natural meadow and rock outcrop openings. Topography is among the steepest in the nation falling sharply from over 11,000 feet along the Sierra Crest to 6,500 feet at Sonora Junction in the space of less than 10 miles. Scenic integrity is high to very high. Minimal evidence of human caused disturbance is visible. The area retains a sense of natural wholeness in a sound unimpaired condition. Landscape visibility centers on the Sonora Pass Highway. Dramatic background views of high Sierra peaks bordering Yosemite National Park and middleground views of the Leavitt/Piute Meadows draw visitors to Sonora Pass from throughout the nation. Foreground views are of primarily natural alpine forest and meadow ecosystems.

Within the project area, views from Sonora Pass Highway near Sonora Pass are of pristine Sardine Meadows in the foreground

and snow capped Leavitt Peak in the mid to background. No cultural features disrupt the natural character of the area. In winter, views can include snowmobiles, U.S. Marine corps vehicles and troops, and the occasional backcountry skier as well as the snow tracks that they leave behind. These are temporary sights and do not materially reduce the overall high quality of the scenery in the area.

Environmental Consequences

No Action

There could be a reduction in sights of snowmobiles and the tracks they leave behind, but since these are transitory in nature, little if any overall effect on scenic integrity would occur.

Proposed Action

There could be an increase in sights of snowmobiles and the tracks they leave behind, but since these are transitory in nature, little if any overall effect on scenic integrity would occur.



CONSULTATION AND COORDINATION

List of Tribes, Agencies, and Organizations Contacted

Tribal

- Antelope Valley Band of Paiute
- Bridgeport Indian Colony
- Mono Lake Kutzadika Indian Com.
- Walker River Paiute Tribe
- Washoe Tribe
- Yerington Tribe

Federal

- Fish and Wildlife Service
- Inyo National Forest
- Lake Tahoe Basin Management Unit
- Natural Resources Conservation Service
- Stanislaus National Forest

State

- CA Dept of Fish & Game
- CA Dept. of Parks & Recreation
- CA Dept. of Transportation
- CA Highway Patrol
- CA State Lands Commission
- CA Wildlife Federation, Inc.
- CA. Regional Water Quality Control Board

Local

- Mono Co. Public Works Dept.
- Mono County Admin. Officer
- Mono County Planning Dept.

Mono County Sheriff Dept.

Organizations

- Western States Racing Association
- Wilderness Society
- Walker River Irrigation District
- Sierra Club/Range of Light
- Sierra Club/Toiyabe Chapter
- People for USA/Toiyabe Chapter
- North Tahoe Snow Travelers Club
- NV Wildlife Federation
- John Muir Project
- Forest Conservation Council
- Friends of the River
- High Sierra Hikers Association
- Blue Ribbon Coalition
- CA/NV Snowmobile Association
- California Bowmen Hunters
- California Wilderness Coalition
- CA-NV Snowmobile Assoc.
- Central Sierra Wilderness Watch
- Eastern High Sierra Packer's Assoc.
- California Off Road Vehicle Association



LIST OF PREPARERS

| <i>Name</i> | <i>Responsibility</i> | <i>Education: Degrees</i> | <i>Experience</i> |
|------------------|--|--|-------------------|
| Margaret Wood | District Ranger | Bachelor of Science, Natural Resources | 18 years |
| Robbin Redman | District Ranger | Bachelor of Science, Forest Mgmt. Bachelor of Science, Paralegal Studies | 17 years |
| Jim Bergman | Watershed | Master of Science, Watershed Mgmt. Bachelor of Science, Forestry | 39 years |
| Don Harris | Law Enforcement | Associate Degree, Law Enforcement | 14 years |
| Lynne Ingram | Special Uses | Bachelor of Science, Biology | 21 years |
| Jason Kling | Fisheries/Amphibians | Bachelor of Science, Fisheries/Wildlife | 3 years |
| David Loomis | Project Manager Air/Visual Quality Economics | Master Of Science, Land Use Planning Bachelor Of Arts, Economics | 27 years |
| Leeann Murphy | Wildlife/Vegetation | Bachelor of Science, Wildlife | 4 years |
| Sherry Sorensen | GIS / Mapping | Qualified by Experience | 22 years |
| Melanie Bengtson | U.S. Marine Corps | Master of Science, Civil Engineering Bachelor of Science, Civil Engineering | 26 years |
| Randy Welsh | Recreation/Wilderness | Master of Science, Forest Planning Bachelor of Science, Recreation | 27 years |
| Jeff Weise | Recreation/Wilderness | Qualified by Experience | 18 years |



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Bridgeport Ranger District West Hoover Travel Management
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