INYO NATIONAL FOREST
873 North Main Street
Bishop, California 93514
(619) 873-5841

9/7/90

Dennis:

Here is the Biological Evaluation for Sensitive Species in the Sherwin Ski Area. While this document goes into greater detail than the EIS regarding these species, it does not alter any of the original analysis or information contained in the EIS. This BE was written as requested by the Regional Office to cover a technicality which requires BE's be written anytime Sensitive Species are potentially impacted by a project.

Following your review and signature, please forward this to Bob Hawkins for the SSA project file.

Thanks,

Charlie V.

PROPOSED SHERWIN SKI AREA

INYO NATIONAL FOREST

BIOLOGICAL EVALUATION

for

SENSITIVE SPECIES

Prepared by: Charles E. Vandemoer Date: 9/7/90

CHARLES E. VANDEMOER
Forest Wildlife Biologist

Reviewed by: Dennis W. Martin Date: 9/17/90

DENNIS W. MARTIN
Forest Supervisor/Responsible Official

INTRODUCTION

This evaluation addresses potential effects on Forest Service designated Sensitive Species from development of the Proposed Sherwin Ski Area (SSA).

Direction for Sensitive Species is to manage their populations and habitat to maintain viability, and to preclude trends toward Endangerment which would necessitate Federal listing as Threatened or Endangered (FSM, 2672).

No Threatened or Endangered plant or wildlife species are known (or expected) to occur in the SSA (Albert, 1985; Kucera, 1985; USFWS, 1989). A Biological Assessment was completed for the Endangered Owens tui chubb (Gila bicolor snyderi) to assess possible impacts, with management direction adopted to insure impacts do not occur (USFS, 1989a).

In May 1990, the Fisher (Martes pennanti) was proposed for Federal listing. This analysis evaluates the possibility of fisher presence, and assesses potential effects, consistent with requirements of the Endangered Species Act (as amended).

PROPOSED PROJECT

The proposed action would issue a special use permit for construction and operation of a destination ski area in the vicinity of the Town of Mammoth Lakes, Mono County, California. Appendix A provides a detailed description of the project, including pertinent mitigation measures.

SPECIES AND AVAILABLE HABITAT

1. Wildlife: Six Sensitive wildlife species were assessed for possible occurance in the SSA (Table 1). Four species were found to potentially occur.

A lack of dense, multi-storied conifer stands within and adjacent to the SSA makes the presence of California spotted owl (Strix occidentalis californiana) and Fisher unlikely.

Spotted Owl surveys during the nesting seasons of 1981, 1985, and 1990 failed to detect owl presence (USFS files). Surveys were conducted in old growth mixed conifer stands believed to have the best potential to provide owl habitat.

No fisher sightings have occurred within 12 miles of the SSA. Schempf and White (1977) indicated fishers were absent from most of Mono and Inyo Counties, and are generally associated with West-side habitats. Carnivore trackplate surveys in the SSA failed to find definitive evidence of their presence or absence (Kucera, 1985).

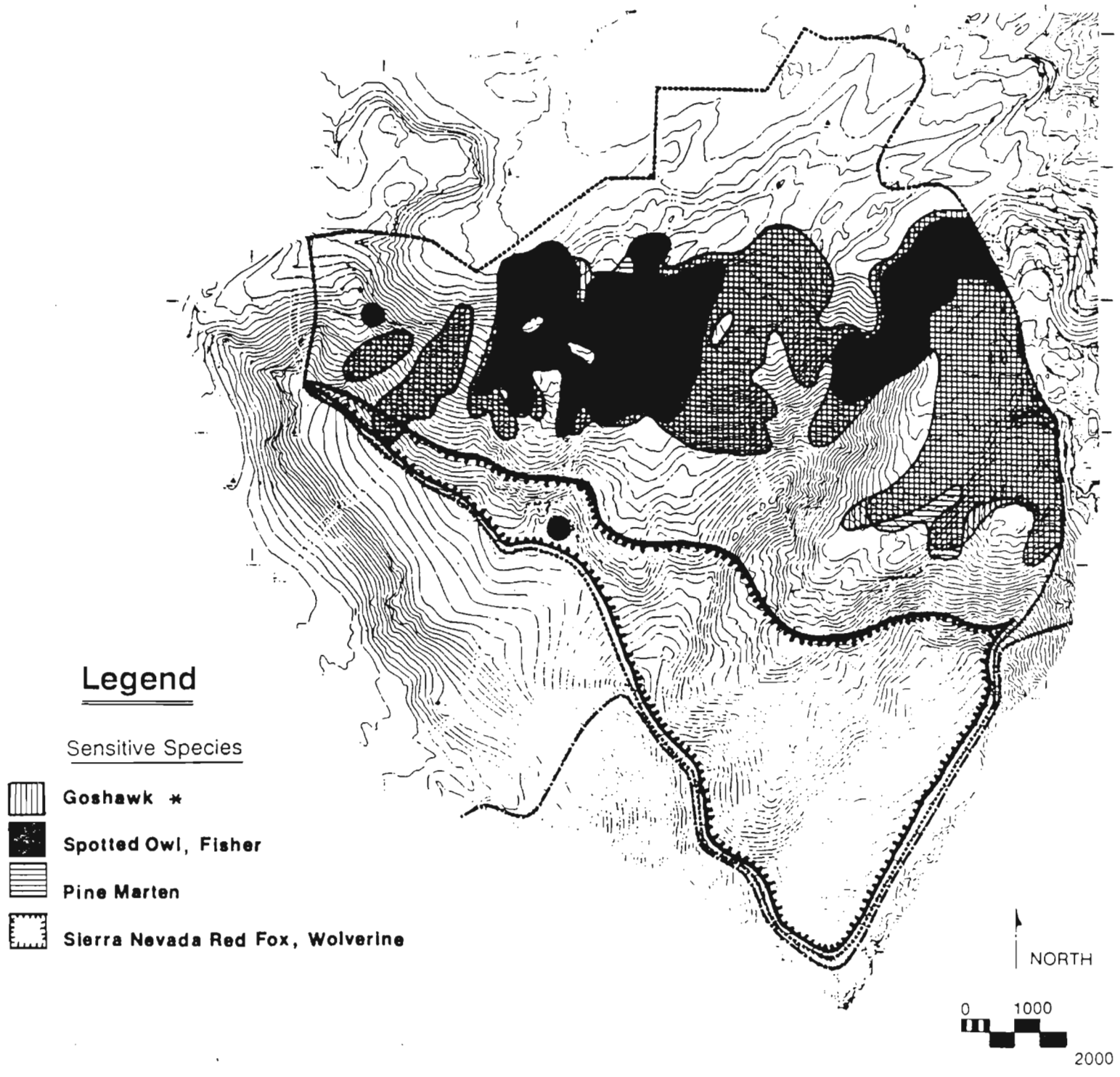
Available habitat in the SSA is generally more open and drier than what is considered suitable habitat for these species. Ongoing studies of spotted owl habitat suggests that forested areas with less than a 40% canopy closure are not capable of providing suitable habitat for spotted owls (Neal et al, 1990;

TABLE 1

Potentially Occuring Sensitive Wildlife Species, Proposed Sherwin Ski Area

Species	Occurance	Habitat Requirements and Use	Hab. In SSA	Quality	Comments
Goshawk	Known Year-long	Late-seral mixed conifer forest forages in openings and in timber stands; Water source in territory; Nest stand recommended at 125 acres. NE aspects, slopes <50%.	284 ac. 580 ac.	High Mod.	No nests found to date Use may be for foraging or intermittent. Sensitive Spp.
Spotted Owl	Unlikely	Late seral and old growth mixed conifer stands. Water within territory, large stands required for reproduction, nests in snags. Insular species.	117 ac. 296 ac.	Low	Not found in/adjacent to SSA in surveys. Sensitive Spp.
Pine Marten	Known Year-long	Late seral and old growth mixed conifer forest; avoids hunting in openings >300ft. in winter; Large down logs needed for denning, resting, and for access under snow. Riparian and lodgepole stands important. Home range 1-3 sq. miles. Good cover interspersed.	864 ac.	Mod.	Sensitive Spp.
Fisher	Unlikely	Dens in hollow trees, avoids open areas; prefers mixed conifer forest (late-seral), 4-6 sq. mile range. Sensitive to disturbance. Closest sighting 12 mi. NW on West side, Sierra.	413 ac.	Low	SSA could be portion of territory. Considered historically scarce in E. Sierra. Sensitive Sp.
Wolverine	Possible	Occupies areas above timberline, scavanger/hunter Several hundred square mile territory, Will use variety of habitats. Sign of presence within 7 miles of SSA, Sensitive to human disturbance.	891 ac.	Mod.	SSA could potentially lie in home range. Ca State Threatened Species. Sensitive Sp.
SIERRA NEVADA RED FOX	Possible	see narrative	891 ac	Mod, Low	

Figure 1. Sensitive Wildlife Species Available Habitat, Proposed Sherwin Ski Area.



SHERWIN SKI AREA

Paton et al, 1990). Other Forest-wide spotted owl surveys within open stands similar to those present also failed to detect owl presence (USFS Files, 1990).

Preferred fisher habitat is characterized by dense (60%-100% canopy closure) multi-storied mixed conifer stands in proximity to dense riparian corridors with small openings interspersed (USFS, 1989b). Large, downed logs and snags are important habitat components.

In contrast, canopy closure within SSA old growth stands averages 23%, ranging from 8% to 35% (USFS, 1981). Stands are dominated by Jeffrey Pine (Pinus jeffreyi) and White fir (Abies concolar) in lower elevations, and Lodgepole Pine (Pinus contorta)/Red fir (Abies magnifica) in upper elevations (574 acres total). Slopes average 40%. Approximately 117ac contains canopy closure of between 20% and 35% (Figure 1).

Habitat mapping in the Mammoth Lakes area suggests a higher potential for these species to occur in suitable habitat to the North and West of the SSA (App. B).

A sighting of Sierra Nevada red fox (Vulpes vulpes necator) occurred 6 airmiles from the SSA. Little is known of this species habitat requirements or populations. This fox inhabits a variety of areas within the subalpine and alpine zones of the Sierra Nevada (DFG, 1990). They utilize red fir, lodgepole, subalpine forests, and alpine fell-fields, chiefly above 7,000 feet in the Sierra Nevada, and may occur within portions of the SSA (Fig. 1).

Observations of wolverine (Gulo gulo) have not occurred within or adjacent to the SSA (USFS files, 1989). This species may range over hundreds of square miles using a variety of habitats. Food sources are varied and range from vegetation and insects to carrion (DFG, 1990). The presence of a deer migration route may attract wolverine due to a relatively consistent but seasonal food source (Fig. 1).

Pine marten (Martes americana) habitat includes the mixed conifer and adjacent riparian areas within the SSA. The size and abundance of down logs and snags are special habitat concerns for pine martens. Preferred habitat are dense, multi-storied stands with small openings. Carnivore surveys in 1985 found pine marten tracks throughout the area, but mostly within the mixed conifer habitat (Kucera, 1985). Both canopy closure and downed log availability in the SSA is well below preferred levels (USFS, 1981).

Goshawk (Accipter gentilis) have been observed in the SSA adjacent to Mammoth Rock, and near the Solitude Lakes adjacent to the SSA (USFS, 1981). Kucera (1985) observed a Goshawk in the aspen stand near Mammoth Rock. A subsequent avalanche reduced much of this stand to an early seral stage. Surveys conducted in 1989 and 1990 failed to locate Goshawks. Mixed-conifer stands provide suitable habitat for this species.

2. **Plants:** Preliminary field surveys have not determined the presence or absence of Sensitive plant species in the SSA (Albert, 1985). Potentially suitable habitat does occur for nine sensitive species (Table 2).

3. **Fish:** No Sensitive fish species occur within or adjacent to this area.

TABLE 2

Habitat Requirements, Plant Community Associations, and Likelihood of Sensitive Plant Species Occurance in the Proposed SSA.

Sensitive Plant Species	Federal Status [1]	State Status [2]	CNPS Status [3]	Plant Community and Habitat Description	Likelyhood of presence
Arctostaphylos uva-ursi var. *monoensis*	C2	none	3	Unknown, possible taxonomic problems. Occurs in Convict Basin. Mixed brush types.	Possible
Astragalus monoensis	C1	C-E	1b	Mixed brush Communities associated with pumice flats. Marginal habitat is present (Taylor, 1987).	Possible
Eriogonum ampullaceum	C2	none	1b	Alkaline meadows; mixed shrub in dry sandy soils below 7,000'.	Unlikely
Hackelia sharsmithii	C3c	none	2	Pellfield; mixed conifer; boulder fields, rocky sites. Known from Southern Sierra, and Nevada populations.	Unlikely
Lupinus duranii	C2	none	1b	Mixed shrub, mixed conifer forest, pumice flats. Generally associated with *A. monoensis*.	Possible
Lupinus sublanatus	none	none	3	One collection in 1935 near TML. May be extinct. Habitat requirements unknown.	Possible
Pedicularis crenulata	none	none	2	Wet meadow, riparian zones. Marginal habitat exists (Taylor, 1987).	Possible
Sciurpus clementus	none	none	4	Wet meadows, alkali meadows	Unlikely
Sedum pinetorum	C2*	none	"Not in Ca"	One collection in 1911, location ambigous. Unlikely to occur (Dedecker, 1987; Taylor, 1987).	Unlikely

1/
USPWS Listings : C1 = Candidate species for listing under the Endangered Species Act of 1973 (et. seq.)
C2 = Information needed on populations or threats prior to recommending.
C2* = Species is possibly extinct, more information needed.
C3c = Not considered for listing, status of species indicates listing unwarrented.

2/
State Codes : C-E = Being considered for listing as Endangered under State Law.

3/
California Native Plant Society Lists : 1b = Rare, threatened, or endangered throughout it's range.
2 = Rare, threatened, or endangered in California but common elsewhere
3 = More status information required
4 = Plants of limited distribution, currently low threats. Watch list.

Sources: CNPS, (1988); USFWS Federal Register (1985); Munz (1973); USPS files.

EVALUATION OF DIRECT, INDIRECT, AND CUMULATIVE PROJECT IMPACTS

1. Wildlife: This project will have no effect on spotted owl or fisher, due to a lack of existing suitable habitat, surveys which did not detect their presence, and a greater availability of suitable habitat in proximity to, but outside, the SSA.

Adherence to Goshawk mitigation should be effective in identifying key habitats and protecting any nest site potentially found (App.A). However, the capability of the SSA to support Goshawks will be lowered. Available core habitat, or areas farther than 800' from an edge, will decline from 424 acres to 94 acres. Foraging habitat declines from 819 acres to 668 acres. A loss of snags and suitable perch sites adjacent to new openings and increased human activities could reduce foraging efficiency. The amount and quality of habitat maintained would likely be marginally capable to support a nesting pair, provided mitigation is closely adhered to.

Habitat available to Wolverine and Sierra Nevada Red fox would also decline. The amount of habitat farther than .25 miles from concentrated human activities would decline from 100% to 0%, reducing habitat effectiveness and likely limiting use to occasional, or infrequent levels.

Pine Marten habitat quality will be reduced. Construction of ski trails will result in a loss of denning and winter-foraging habitat of 151 acres, although no barriers to movement would be created. The capability of the area to support marten would be reduced, although they will likely still occur. Approximatley 668 acres of suitable habitat would be retained, which will still be capable of supporting a denning pair. Similar habitat of equal area occurs from the Sherwin Lakes to Laurel Creek, which could provide habitat free from disturbance. Pine Marten currently occur on Mammoth Mountain, a larger ski area to the North and West of the SSA.

2. Plants: Mitigation measures will require that prior to any disturbance, the SSA will be inventoried by a professional botanist to determine whether any are present (Appendix A). If found, these species will be protected. Subsequent monitoring is also required to insure protection is attained. It is believed this measure will be effective in eliminating potential direct and indirect project impacts from human activities or vegetation modification.

Cumulative Impacts and Viability

Cumulative effects were assessed in an area from the SSA North to Glass and Dry Creek, and West to the San Joaquin River. This area was selected because of the occurrence of similar habitat, and the availability of suitable habitat in a logical extention from the SSA. For red fox and wolverine, available habitat farther than .25 miles from disturbance would equal 75%. Although this is a decline from 85%, it does suggest suitable habitat will be maintained in sufficient quantity to provide wolverine and red fox habitat. Similarly, over 6,000 acres of suitable (and higher quality) habitat is available in this area, suggesting maintenance of a viable marten network as well.

The viability of Goshawks will likely be maintained. The Land and Resource Management Plan (USFS, 1988) requires protection of at least 15 pairs in territories spread throughout suitable habitat. This number is currently being

exceeded, with current direction providing protection of additional nest sites. Therefore, loss or protection of any Goshawks in the SSA would likely not influence the viability of East-side Goshawk populations as a whole.

Given the protective measures to be instituted for Sensitive plants, this project will not influence population viability of these species, should they occur.

RECOMMENDATIONS

Recommendations for protection of Sensitive Species have been incorporated within the proposed action (App.B). Close adherence to the mitigation measures is needed to insure additional adverse consequences to Sensitive species do not occur, and to meet the requirements of the Migratory Bird Treaty Act.

While No Action would provide the greatest protection of these species, the preferred alternative, while reducing the quality and quantity of habitat for these species, will likely not effect the viability of these species as a whole.

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APPENDIX A

DESCRIPTION OF THE PROPOSED SHERWIN SKI AREA, INYO NATIONAL FOREST

V. Alternative #5 - Development With Emphasis on Optimizing Both Economic and Resource Related Values (8,000 SAOT)(Preferred Alternative).

Under this alternative, no individual objective would be maximized. Instead, this alternative reflects a conceptual plan which incorporates the principle objectives of natural resource protection and economic ski area development opportunities. Alternative #5 is shown in Figure II-4. Major development features include nine lifts; three lodges with the main base lodge on private land; parking for 2,000 autos and 30 busses; 1.24 miles of access road; and 9.36 miles of maintenance road. Other features of this alternative are displayed in Table II-2. Guidelines used in developing this alternative were:

-Develop a full array of skiing terrain, especially intermediate to avoid exclusive expert image.

-Preserve visual quality of north side of Horn Ridge.

-Locate Snowcreek Lodge and attendant facilities outside of the Mammoth Rock migration corridor and identified deer holding area, with placement of the base lodge on adjacent private land.

-Eliminate developed terrain on Pyramid Bench (pod K) from beginner classification due to its extreme remoteness and limiting egress.

The feasibility study (USFS, 1986b) noted that the ski area would be developed in two or more phases over a period of several years. Phase I would involve construction of lifts 1 through 5, the associated ski runs, Snowcreek Base Lodge, Sherwin Station, Solitude Lodge, and the maintenance center. Phase II would involve construction of lifts 6 through 9, the associated ski runs, and Canyon Lodge. This phased construction, which is typical of ski area development, would provide additional time to monitor holding and migration patterns of the deer herd, and to determine effects of ski area developments on deer herd activities.

Mitigation measures specific to this alternative include the following:

-An initial permit would be issued for preparation of the Master Development Plan only. No ski area development will be allowed until the determination is made by the Forest Service in consultation with the MCWD that there is adequate water available for each phase of development being considered. On-site and off-site demands for foreseeable water needs for the operation of the SSA must be provided for. Available water means developed and proven sources with data on volumes available.

-The Master Development Plan must provide for phased development. The initial phase shall avoid disturbances in Solitude Canyon.

-A detailed deer herd monitoring program shall be developed and implemented prior to Phase I construction activities. The monitoring program shall be designed to assess the specific effects of ski area development on deer migration and holding area use.

-If the deer monitoring program indicates that Phase I ski area developments have direct and significant measurable effects on the deer herd, the design of subsequent phases shall be modified or additional mitigation measures will be implemented to reduce the identified impacts. Significant effects would be defined as substantial declines in herd levels attributable to SSA development, or failure of a large percentage of deer to pass along migration corridors due to SSA development.

-The deer herd monitoring program shall remain in operation throughout all phases of ski area development and for such period thereafter as determined necessary by the Inyo National Forest. The purpose of this requirement is to provide essential data and observation of the long-term effects of ski area development on deer.

-Lift terminals and building structures will be located where they are not sky-lined as seen from the John Muir Wilderness.

-Ski trail construction will avoid aspen-covered portions of Solitude Canyon as much as possible.

-The upper one mile of road from Solitude Canyon to Red Peak will not be built if the Judges Bench access road is feasible.

-Date restrictions on human activity will be applied within the permit area from approximately October 1 to November 15, and April 15 to June 15, to minimize impacts to mule deer. The exact dates will vary on a yearly basis in response to monitoring of climatic conditions and resulting deer movements, as determined by the USFS.

– *Sensitive Species Assessment/Protection*–Although no nest sites for goshawks or other sensitive species have been found in the SSA, the potential for them to occur is present. Additional surveys will be required prior to construction to obtain location, distribution, and baseline information on sensitive species. If key habitats are found (for example, goshawk nests) they will be protected through seasonal restrictions at the site, or restricting site developments.

> **Restricting human disturbance during the nesting season of goshawks (for example) in areas likely to influence the nest can be effective in limiting possible adverse effects on nesting success and habitat occupation. The effectiveness of this measure will largely depend on the species in question. Some goshawks have shown high tolerance for human disturbance, while others have low tolerance levels.**

-Surveys of the SSA to determine occurrence of Threatened and Endangered or Sensitive plant species will be undertaken by a Botanist prior to any construction activities. Should any exist, management needs for species protection will be incorporated into the Ski area design, construction, and operation. This is a management requirement, not mitigation, and would be effective in meeting land management plan policy.

-Disturbance limits will be clearly defined by staking and disturbance beyond these limits will be prohibited. This will minimize the degree of habitat fragmentation impacts on vegetative communities and the amount of disturbance to sensitive communities (ie. Whitebark Pine). Clearing limits in such sensitive environments will be limited to that necessary for public safety (ie. 150').

-Apply re-vegetation measures to disturbed areas in the same season effected prior to the onset of autumn precipitation, generally by October 1 each year. This will expedite restoration of vegetation as well as minimizing erosion. Species selected will emphasize native vegetation adapted to the surrounding vegetative community. Use of non-native species may be necessary to achieve all resource objectives (e.g. erosion control, wildlife forage). Levels of successful re-vegetation will be determined by the Forest Service. Best management practices will be implemented consistent with LMP direction.

-Trees felled during construction will generally be left on the trails perpendicular to the slope to abate surface erosion and to provide a source of organic nutrients and microclimates for plant establishment. This may not be possible on areas graded, therefore the effectiveness of this measure is lowered.

-A monitoring system will be developed and implemented to determine how well these measures accomplish their objectives, as well as providing feedback information on vegetation changes and hence necessary modifications to ski area operations in the future.

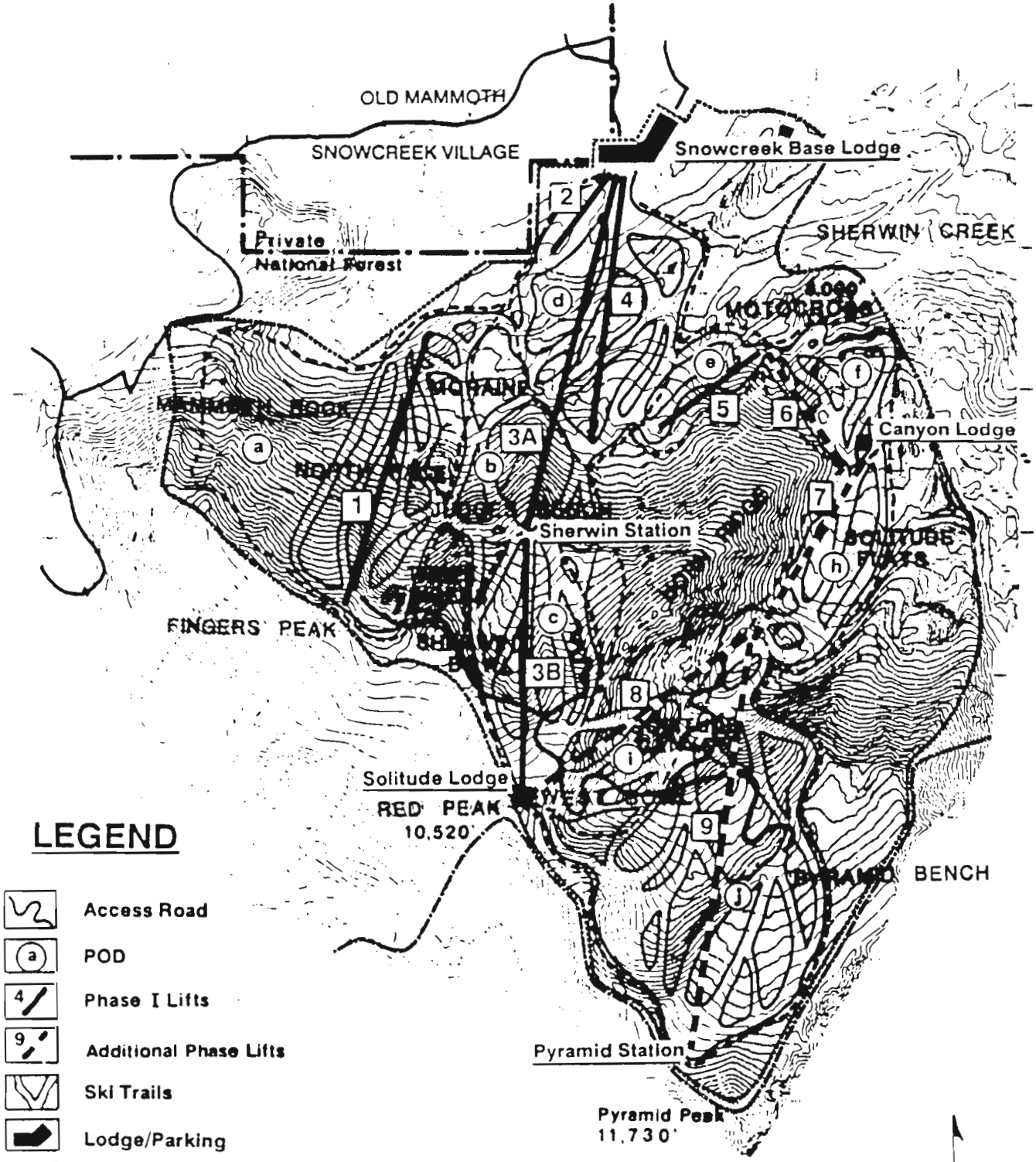
Preferred Alternative

ALTERNATIVE FIVE

EMPHASIS IS ON OPTIMIZING BOTH

ECONOMIC AND RESOURCE RELATED VALUES

FIGURE II-4



SHERWIN SKI AREA
ENVIRONMENTAL IMPACT STATMENT

APPENDIX B

SUITABLE SPOTTED OWL AND FISHER HABITAT AVAILABILITY IN THE MAMMOTH LAKES AREA, INF. (Based on USFS Old Growth Inventory (1990). Suitable = multi-storied >40%CC).