

# REPORT

## Enviromental Assessment Wildlife Component



Proposed

### Sherwin Ski Area

March 1986



Environmental Assessment  
Wildlife Component

Proposed  
Sherwin Mountain  
Ski Area

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## Summary

Basic information on kinds of wildlife and an indication of their general population status was obtained from a variety of sources. This information was used to evaluate the proposed actions and alternatives. The major thrust of the field work conducted was to obtain personal familiarity with the wildlife resources and to identify those which might be affected by the proposed actions. In the analysis of the likely impacts, considerable use was made of overlays depicting environmental resources in comparison with the various alternatives.

The existing environment that will likely be affected by the proposed actions and is of major importance to wildlife, particularly deer, includes chaparral brush, wet meadows, willow and aspen thickets. Traditional deer migration routes and the staging area are of special importance and are likely to be affected by any of the proposed alternatives, even if mitigation is applied. Mitigation to reduce the likely impacts affecting deer migration and the staging area embraces revegetation of disturbed areas, modifying ski operations and maintenance activities, maintaining and/or developing wetland areas and protecting and reserving expanses of willow and aspen thickets, particularly in Solitude Canyon. Monitoring of fall and spring deer migrations by a qualified wildlife biologist will be necessary to alleviate possible impacts on the migration routes and the staging area. Opportunities for wildlife habitat enhancement would be greatest when related to the creation of additional edge habitat, mainly in the meadow and chaparral-brush areas. A cooperative wildlife management program for the general area should be developed involving the proponent, U. S. Forest Service and California Fish and Game Department.

## Introduction

The proposed Sherwin Ski Area could involve as much as 214 acres of surface disturbance depending on the alternative selected (Figures 1 and 3 & 9). This would include ski trails, lifts, access and maintenance roads, base facilities, and support services. The adjacent, private Snowcreek Development could embrace over 345 acres and is expected to include dwelling units of various densities, a village and commercial center, a diversity of recreational activities and transportation facilities. The Snowcreek Development will be considered in this evaluation.

Concern over possible conflicts and negative impacts upon the wildlife resources of the area have been expressed by the public and the California Fish and Game Department. The U. S. Fish and Wildlife Service is involved through the Endangered Species Act and the Coordination Act. The U. S. Corps of Engineers are likely participants because of possible development effects on wetlands and the Environmental Protection Agency because of their interest in air and water quality. The U. S. Forest Service will be the lead public agency responsible for evaluating the proposed actions in an Environmental Impact Statement. All of these agencies, as well as others, and the public will have the opportunity to express their concerns through official correspondence and public meetings.

Various reports (wildlife, vegetation, soils, and water) have provided data bases which have been considered in this assessment as well as personal field reconnaissance of the area of interest.



Figure 1

Proposed  
**Sherwin  
 Ski Area**

Prepared by  
**O'Connor Design Group, Inc.**  
 and **Sno-Tek**  
 Architects, Engineers & Planners



Scale 1" = 4 Miles

**REGIONAL MAP**

## Objectives

Personal efforts were directed toward obtaining the most comprehensive base information on environmental factors which affect wildlife. For assessment purposes, particular attention was devoted to the deer population status, distribution, movement patterns, areas of utilization, and establishing relationships with their habitats. Additionally, emphasis has been placed on identifying specific wildlife resources which might be affected by the proposed development actions (vegetation, soils, and water resources).

For the purpose of suggesting mitigation to reduce or minimize adverse effects, additional contacts were made and discussions held with representatives of California Fish and Game Department and the U. S. Forest Service.

Wherever possible, enhancement opportunities for wildlife have been identified and suggested.

### Background Information

Base information were gathered from personal field trips, interviews, reviewing reports and agencies' data. Because of the migratory nature of birds, the seasonal movements of deer, and the peripheral, secondary influences on wildlife, the drainages and terrain around the periphery of the Sherwin Ski Area and the Snowcreek Development have been included and area referred to as the area of interest.

### Description of Existing Environment

A wide variety of major and minor ecosystems occur in the general area of the proposed Sherwin Ski Area. Limited meadows and wetlands occur along the base of the mountain surrounded by a mixture of chaparral and forest. Because of the great elevational change from the valley floor to the sub-alpine summit and the different aspects present, a multitude of microenvironments are present that are attractive to many species of wildlife.

The land on which the Sherwin Ski Area will be located (2,000± acres) is administered and managed by the U. S. Forest Service, Inyo National Forest.

#### Habitats

In his wildlife study Kucera (1985) refers to three major vegetation types as does Albert (1985):

Whitebark Pine	49%	964 acres
Mixed Conifer	29%	574 acres
Sage Scrub/Chaparral and Mixed Brush	17%	343 acres

Albert (1985) also mentions two minor types (from Schneider, 1981):

Quaking Aspen	.03%	65 acres
Riparian	.01%	21 acres

The most important habitat in the primary deer migration areas embraces the brush types (Albert, 1985): sagebrush scrub/chaparral, mixed brush, riparian woodland, and montane scrub. The most important high value species

present for the deer were: Bittercherry (Prunus emarginata), Quaking Aspen (Populus tremuloides), Bitterbrush (Purshia tridentata), and Mountain Mahogany (Cercocarpus betuloides).

Habitats used most by other wildlife (Kucera, 1985) were:

Raptors	Mixed Conifer
Owls	Mixed Conifer
Blue Grouse	Mixed Conifer, Whitebark Pine, Sage Scrub/Chaparral Brush
Carnivores	Mixed Conifer, Whitebark Pine, Sage Scrub/Chaparral Brush

More detailed information on the composition, relative abundance, diversity and variety of vegetation present, in relation to soils and water resources in the area of interest is given by Albert (1985), Kucera (1985), and Triad (1985).

Additional consideration for habitat types and their relative wildlife values is given later in the evaluation of each alternative.

#### Soils

Fourteen soils units have been recognized and characterized by the U. S. Forest Service and The Morro Group (1985). Three of these (Soils Units 101, 102 and 105) have been classified as having a low erosion hazard rating for both present and disturbed conditions. Soils units 103, 106, 107, 109, 110 have a low-moderate erosion hazard rating for disturbed conditions and soil units 108, 112, 115 and rock glaciers of 103 have erosion hazard rating of moderate-high when disturbed. Soil unit (104) is considered to have a very high erosion hazard rating under disturbed conditions. Deer use occurs to a major extent on soils that have an erosion hazard of moderate to very high with low fertility.

## Water Resources

A detailed presentation of the area hydrology is given by Hutchison (1985) and Triad (1986). In these reports the area watershed was divided into 6 subdrainages similar to material presented by Asquith (1985). An evaluation of the wildlife-water resource related impacts are presented later. At this point it should be recognized that most of the snowmelt and rainfall is absorbed rapidly by the surface soils and underlying matrices to become ground water. The ground water moves downslope and at points of surfacing can become seeps or areas of high value to wildlife. Most of these surface expressions occur near the base of the mountain or behind moraine dams. Varying amounts of ground water would be available for wildlife habitat revegetation and development depending on elevation, with lesser amounts occurring at the higher locations.

## Other Environmental Considerations

Deer Movements - An in-depth study (Kucera, 1985) indicated that around 3,000 deer migrate through the proposed Sherwin Mountain Ski Area in the fall and spring. The size of the deer herd has remained about the same over the past few years. Movement in the spring by deer into the areas of major interest (staging area and migrating routes) from lower elevation winter range varies from year to year depending on local weather conditions but generally starts in early April when snow depths in the vicinity of the deer staging area and the lower elevation portion of the migration routes are free of snow or less than 24" deep. A few deer, probably less than 100, remain in the proposed development area during the summer months. Fall migration from high-elevation summer range begins slowly in September,

typically peaks quickly between early to mid-October, and might continue into mid-November. Migration is usually terminated when snow depths in the high passes are beyond deer capabilities (36" plus) and snow depths in the valley are 24" or less.

During a year of average snow conditions, ski operations could begin in the fall about Thanksgiving (Nov. 24), and in spring continue until around the end of May. Snowmaking in fall might begin in October and continue through April and May in spring. However, spring snow conditions in the staging area at the time deer might be present likely would not be suitable for skiing nor would it be economic (O'Connor 1986 personal communication) to make snow at the lower elevations at this time of year to provide skiable areas. According to O'Connor, 1986 (personal communication), ski operations that might infringe upon the staging area would be curtailed when monitoring information indicated there would be a possible conflict with normal deer movements. Ski areas which might be involved with snowmaking and have snow depths greater than 18-24" should not constitute a physical barrier to migrating deer since the snow will be packed hard and the surface frozen by nighttime temperatures, creating a suitable surface for deer travel. Usually deer do not winter in the immediate area of interest but rather spend the winter at lower elevations between Mammoth and Bishop.

There are two major deer migration routes (Kucera, 1985): (1) from the valley floor and foothills via Solitude Canyon through Duck Pass; and (2) from the valley floor and foothills along the base of Sherwin

Mountain and near Mammoth Rock through Mammoth Pass. These routes are used by the deer during both fall and spring migrations. Within the two major migration routes are numerous local trails.

A limited amount of fawning occurs in the area of interest during mid-May to early June. Mixed conifer and chaparral scrub are the habitat types used mostly during this period, but the drainages and riparian habitats appear to be critically important.

Recreational Activities - Deer hunting occurs in the fall (mid-September to mid-October) as an important recreational activity. Because the fall migration routes are well known to the hunters, a heavy harvest sometimes occurs.

Other human recreational pursuits that influence wildlife, particularly deer, in the area of interest are: off-road vehicle use (particularly motorcycles but also 4-wheel drives and mountain bikes); horseback riding, camping and hiking.

Traffic and Roads - a detailed transportation study of the proposed development has been made by Kaku Associates (1985). Three existing roads have an influence on area wildlife, particularly deer: (1) Sherwin Creek Road, (2) State Route 203 and (3) U. S. 395. During the winter months the gravelled Sherwin Creek Road is closed but during fall and spring deer migration it is usually open to vehicle travel. State route 203 and U. S. 395 are hard-surface routes whose existing traffic volumes during fall and spring migration constitute a high level of car-deer accidents (California Department of Transportation, 1985). Based on



information obtained in 1985 (not available for fall migration period), late April, May and early June - the peak of the deer migration in the Mammoth Lakes area - was the period that sustained the greatest number of car-deer accidents. Approximately twice as many does as bucks were killed during this period. Car-deer accidents occurred most frequently on U. S. 395 between Mammoth Lakes Airport and Hilton Creek Road and on state route 203 between the U. S. 395 overpass and Mammoth Ranger Station.

#### Rare-Endangered-Threatened-Sensitive Wildlife

According to Kucera (personal communication, 1985) there are no endangered or threatened species in the area of interest. Certain "sensitive" species such as the goshawk, owls (flammulated, spotted, or great gray) and blue grouse were of interest and were considered in the wildlife surveys (Kucera, 1985). Only blue grouse were found to be common in the area.

## Analysis of Proposed Actions

### Methodology

A determination of wildlife resource values and recognition of the existing environmental situation were basic steps leading to the analysis of the proposed actions. Next, identification of the likely impacts were related to the alternatives and their relative significance. Map graphics (overlays) were used often and extensively to help evaluate the effects of the proposed actions and alternatives. Thus, information on location, acreage, and habitat quality values were compared directly. Definition of the range of impacts required consideration of the sphere of influence or "ripple effects". These spheres of influence relate to distance from the proposed action and were identified as: micro -- immediate development area; meso -- within general area of interest; and macro -- county-wide plus adjacent counties and secondarily the State of California. Environmental performance standards have been related to constraints or actions following likely impacts in order to maintain the quality of the environment. Additional suggestions or habitat enhancement have been given. Impact evaluation definitions are presented in Table 1.

### Assumptions

The following is a list of assumptions considered in evaluating the proposed actions and alternatives, that:

1. The public, the U. S. Forest Service and Sherwin Mountain Ski Area are interested in maintaining or enhancing existing environmental components; air, soils, water, timber, wildlife and recreation.
2. The maintenance of general environmental quality will become more difficult in the future as demands on natural resources increase.

3. The current environmental regulations (local, state and federal) will continue or likely become more restricted.

4. There will be an increasing demand for special uses on public lands.

5. The maintenance, perpetuation, and wise use of the wildlife resource is in the interest of the public, the U. S. Forest Service, the California Fish and Game Department and the Sherwin Mountain Ski Area.

6. There will be conflicts of varying magnitudes between recreation developments and wildlife resources; thus, tradeoffs of values will occur and coordination and cooperation in resource use activities will be necessary.

#### Resource Management Goals

An integration of common public, U. S. Forest Service and California Fish and Game Department desired resource management goals were considered in evaluation, that the approved project would:

1. Meet the concerns and desires of the National, State and local public.
2. Be compatible with local, state and federal program objectives.
3. Utilize those actions which would favor wildlife resource management flexibility.
4. Maximize the opportunities to enhance wildlife resource values.
5. Recognize wildlife resource quality as well as quantity values.
6. Provide maximum protection for the nonconsumed wildlife resource values.
7. Base resource allocation on land use suitability and capability.

TABLE 1. - Impact Evaluation Definitions

Impact - a response or reaction by an organism to a perceived change in its environment; can have either positive or negative effects on the organism.

High Positive Impact - A change of a large magnitude involving 50% or more of the population; significantly greater than formerly; confirmed if trend substantiated by 3 or more years of monitoring.

Moderate Positive Impact - A change of moderate magnitude involving 25-50% of the population; change is greater than formerly; confirmed if trend substantiated by 3 or more year of monitoring.

Low Positive Impact - A probable change in value involving 10-25% of the population; change is more than formerly.

No Change - A change in value of 10% or more or less than formerly in the population; or change is not confirmable.

Low Negative Impact - A probable change in value, involving 10-25% of the population; less than formerly.

Moderate Negative Impact - A change of moderate magnitude involving 25-50% of the population; noticeably less than formerly; confirmed if trend substantiated by 3 or more years of monitoring.

High Negative Impact - A change of large magnitude involving 30% or more of the population; significantly less than formerly; confirmed if trend substantiated by 3 or more years of monitoring.

The percentages used above are indicative of the proportion of animals likely to respond to a perceived change and is not necessarily related to population decline or increase.

When evaluating and ranking the various alternatives, the following queries were applied to obtain an expression of desirability:

1. Would a high degree of goal achievement be attained by the U. S. Forest Service, California Fish and Game Department and Sherwin Mountain Ski are:

2. Could legal commitments and agreements be developed and met?
3. Could adverse wildlife resource impacts be minimized?
4. Could there be a high degree of compatability and suitability with current and future land uses?

#### Environmental Consequences

Public Concerns - A list of likely public, U. S. Forest Service and California Fish and Game Department concerns are presented in Table 2. These are addressed generally in evaluating the impacting actions of the alternatives. The No Action alternative does not warrant similar, in-depth evaluation treatment because the impacting actions over time that would likely occur to wildlife might be related more to varying off-site influences than changes in the existing natural environment.

TABLE 2. List of Dominant Public Concerns

1. Will there be impacts on the local deer herd?
2. Will the proposed action affect deer summer and/or winter range?
3. Will the proposed action affect historical, normal, existing deer travel routes?
4. Will the proposed action affect important wetlands used by various wildlife?
5. Will the proposed action affect highway mortality of deer?
6. Will hunting pressure or opportunity to hunt deer be affected by the proposed action?
7. Will the proposed action affect annual wildlife mortality re: poaching, feral dogs, harassment, escape cover, etc.?
8. What will be the impacts of increased human pressures on wildlife from the proposed action or the alternatives?
9. Will wildlife habitats be affected by ski trail development?
10. Will snowmaking activities affect wildlife use of traditional habitats?
11. How will wildlife be affected by construction activities?
12. How will wildlife be affected by ski area operations and maintenance activities?
13. Can development disturbances to wildlife be minimized or mitigated?
14. Will any sensitive or endangered wildlife species be affected?
15. Will the proposed action limit public access to the National Forest for hunting or other recreation pursuits?
16. Will the effects of development or operational noise affect wildlife?
17. How will the proposed action affect wildlife water resource quantity and quality?
18. Will the proposed action create soil erosion hazards which in turn will affect wildlife?
19. Are there critical wildlife habitats, if so, how will these areas be protected?
20. How will the public, U. S. Forest Service, California Fish and Game, and the development proponent accomplish wildlife protection and mitigation?
21. How will the off-site impacts of human population expansion and area growth inducements affect deer?

## Explanation of Evaluation Rationale

Several environmental factors have been used to attain a comparative evaluation of the various alternatives. Most of these are a composite of many environmental considerations, which in the final evaluation help to give a clearer picture of the likely impacts from the various Alternatives' proposed actions.

Environmental Sensitivity - a term indicating the fragility or ability to cope with ambient stresses. Examples:

1. Areas of high elevation habitats are more fragile than lower elevation areas; thus disturbance is more severe and reclamation or natural healing takes longer.
2. Areas with moderate to very high erosion potential and having low fertility were rated as having higher sensitivity.
3. Areas of likely high runoff were rated higher and more sensitive.
4. Areas known to be of sparse or thin vegetation were rated as higher and more sensitive.

Sphere of Influence - high ratings of areas within the proposed U. S. Forest Service permit area (PODs and Lifts) were based on: extent of surface area proposed to be disturbed, erosion potential, capability for revegetation, extent of conflict with deer staging and migration routes, environmental sensitivity, likely construction activity impacts, and ski area operations and maintenance activities.

Mitigation - this evaluation was based on environmental sensitivity (all of above) and reclamation potential, particularly the availability of water for vegetation establishment and growth; as well as recommendations relating to ski area operations, public controls, and reducing stress on wildlife.

Enhancement Potential - this evaluation of the various areas was based on environmental sensitivity (all of above), reclamation capability, and availability of water for revegetation purposes and development of supplemental water areas (seeps, springs, ponds, meadows).

Additionally, information from the hydrology - geology - soils reports (Asquith, 1985; and Hutchison, 1985), was used to develop Table 3 as another means of evaluating the likely impacts to wildlife habitats by the various proposed actions.



## Impact Considerations

A variety of actions can create impacts to wildlife. Some of the more important considerations that will be dealt with here are: surface disturbances, wildlife habitat changes, revegetation, deer migration and staging areas, possible conflicting use of the same area, off-site influences, and the Motocross area. All of these interact and can exert an influence upon wildlife. In addition other considerations which might affect deer particularly are highway mortality and herd harvest methods, which will not be addressed in this report.

### Surface Disturbances

Surface disturbances such as construction of access roads, clearing of mountain ski trails, installation of service facilities (utilities, sewage, water, etc.) and site preparation for buildings have both primary and secondary affects upon wildlife. Some of these influences embrace increased soil erosion, disruption of drainages, increased sediment transport, removal of food and cover, and direct mortality. The extent and types of disturbances for the trails, access, and service roads are given in Table 4.

### Wildlife Habitat

In nature there are many compensatory and balancing situations. Thus, vegetation that is disturbed will ultimately develop a new form of vegetation, which usually has a different group of wildlife species associated with it than before disturbance. In many cases, the new vegetation coupled with edge diversity following disturbance is more useful to certain wildlife than before disturbance. This is an over-simplification of what happens

TABLE 4. Extent and type of disturbance for trails and service roads (acres).

	<u>Parking</u>	<u>Natural Openings</u>	<u>Trees Felled and Left in Place</u>	<u>Graded and and Revegetated</u>	<u>Graded and not Revegetated</u>
Alt. I	6.9	87.7	94.8	58.4	62.9
Alt. II	15.2	221.2	124.7	104.6	80.35
Alt. III	23.4	417.4	205.7	116.1	190.6
Alt. IV	10.6	102.1	49.5	78.1	30.2
Alt. V	16.5	221.2	124.7	113.7	59.2
Alt. VI	27.0	325.1	223.3	137.2	100.7
Alt. VII	11.3	152.2	145.0	114.9	95.8

but it helps to illustrate that the clearings and mountain trails proposed by various alternatives could provide future tradeoffs of vegetation types that could be expected to benefit a wider variety of wildlife than now utilize the area, mainly because of the greater diversity of habitats available. Thus, the evaluation for each of the alternatives has been based on expected vegetation modification and its likely current and future value to wildlife.

Utilized wildlife habitat consists of a variety of components: vegetation (food and cover), soils and nutrients, water, physiographic makeup, etc. Of these components, existing vegetation (its character, composition, structure, diversity and lineal edge) is important as a basic determinant of utilization.

Most of the alternatives affect the same general physiographic area and hence are similar in existing vegetation likely to be disturbed; they differ in extent, acreage, amount of high value habitat involved and revegetation potential. A comparison of the likely deer migration habitat to be affected by the various alternatives is presented in Table 5.

TABLE 5. A comparison of habitat losses and deer migration routes.

Alternates	Acres Disturbed	Acres Revegetated	Acres Not Revegetated	Composition of Habitats Affected	% of Total Deer Migration Routes Affected	Composition of Habitats in Affected Deer Migration Routes
I	88	52	36	B - 40% C - 30% WBP - 30%	30	B - 40 C - 50 WBP - 10
II	143	83	60	B - 30% C - 30% WBP - 40%	80	B - 30 C - 60 WBP - 10
III	214	133	81	B - 30% C - 40% WBP - 40%	90	B - 50 C - 50 WBP - Tr.
IV	74	57	17	B - 10% C - 60% WBP - 30%	50	B - 90% C - 10% WBP - Tr.
V	132	83	49	B - 20% C - 50% WBP - 30%	80	B - 30% C - 60% WBP - 10%
VI	201	141	60	B - 30% C - 40% WBP - 30%	100	B - 70% C - 25% WBP - 5%
VII	175	95	80	B - 20% C - 40% WBP - 40%	80	B - 50% C - 50% WBP - Tr.

B - Brush  
C - Mixed Conifer  
WBP - White Bark Pine

Vegetation based on Kucera, 1985

## Deer Migration Routes and Staging Area

In researching the relationship of the deer migration routes and staging area to the existing environmental situation, two points became clear:

(1) that chaparral brush vegetation was of major importance and dense willow thickets were critically important, particularly in the vicinity of the proposed Canyon Lodge; and (2) that the spring burn off and wind scour pattern of the snowcover correlated closely with the migration routes and staging area. These are the areas where there might be conflict or dual use between migrating deer and the ski operations (Tables 6 and 7). With "normal year" snow conditions the probability is low of a significant conflict because the areas concerned would not offer quality skiing. If spring skiing quality were to be improved by snow making on the lower elevation trails where the deer migration routes and staging area occurs, the impact on the deer might be increased. However, assurance has been given (O'Conner, 1986 personal communication) that ski operations would be coordinated with deer migration by monitoring deer movements during spring and fall and ski operations would be modified to accommodate the deer.

The Motocross region is important as a late spring staging area for the deer before they move to higher elevations. Deer density in the staging area in the spring is the highest of any locale utilized by deer during the year. Thus, the staging area along with the restricted migration route in the vicinity of the proposed Solitude Canyon Lodge constitute the most critical locations noted. For these reasons, special consideration should be given to the "in-place" resource (deer) over the "invading" resource (ski development). In Solitude Canyon a minimum of the surface area should be disturbed and the remainder designated as an inviolate migratory corridor for deer.

## Revegetation

Revegetation efforts in the critical migration corridor involving Solitude Canyon should emphasize establishment and maintenance of willow thickets by whatever means necessary. If disturbance of the existing vegetation occurs, in the critical corridor used by the migrating deer then revegetation efforts should be directed toward replacement with pre-disturbance vegetation cover of like and kind. Some of the migrating deer can probably be "steered" away from conflict areas with strategically placed drift fencing. Maintenance of meadow areas near the lower base of the mountain might delay some deer until later in the spring and as such might reduce stress on the migrating animals and slow a portion of the upslope migration to a later time when there would be less likelihood of conflicts with the proposed ski development. To increase the attractiveness of low elevation areas and microenvironments, forage could be enhanced in meadow areas (existing and those that might be developed), by deferring livestock grazing until after July 1 annually or preferably eliminated from the area. Fertilizing within the staging area could increase browse productivity and improve the physiological condition of the migrating deer.

TABLE 6. Relative indication of proposed actions by alternatives on deer migration routes and staging area.

Alternative	Lifts	PODS	% Within Deer Migration Route	% Within Deer Staging Area
I	1		90	30
	3a		60	None
	3b		None	None
	4		None	None
	5		100	25
		a	60	None
		b	50	None
		c	None	None
		d	90	25
		e	90	10
II	1a		90	30
	1b		None	None
	1c		80	None
	2		None	None
	3a		60	None
	3b		None	None
	4		None	None
	5		100	25
	6		100	None
	7		100	None
	8		None	None
		a		30
		b		50
		c		None
	d		90	
	e		90	
	f		None	
	g		100	
	h		60	
	i		60	
	j		None	
	k		None	

TABLE 6. continued

Alternative	Lifts	PODS	Migration Routes	% Within Deer Staging Area	
III	1a		90	30	
	1b		None	None	
	1c		80	None	
	2		None	None	
	3a		60	None	
	3b		None	None	
	4		None	None	
	5		100	25	
	6		100	None	
	7		100	None	
	8		None	None	
	9		100	None	
	10		30	None	
	11		100	50	
			a	60	None
			b	50	None
			c	None	None
			d	90	50
			e	90	10
			f	None	None
		g	100	None	
		h	60	None	
		i	60	None	
		j	None	None	
		k	None	None	
		l	100	90	
		m	None	None	
		n	50	None	
IV	1		50	5	
	2		None	None	
	5		100	25	
	10		30	None	
			e	90	10
			h	60	None
			j	None	None
		m	None	None	



TABLE 6. continued

Alternative	Lifts	PODS	Migration Routes	% Within Deer Staging Area	
V	1		50	None	
	2		None	None	
	3a		60	None	
	3b		None	None	
	4		None	None	
	5		100	25	
	6		100	30	
	7		100	None	
	8		None	None	
			a	60	None
			b	50	None
			c	None	None
			d	90	25
			e	90	10
			h	60	None
			i	60	None
			j	None	None
		k	None	None	
VI	1		50	None	
	2		None	None	
	3a		60	None	
	3b		None	None	
	4		None	None	
	5		100	25	
	6		100	30	
	7		100	None	
	8		None	None	
	9		100	None	
	10		30	None	
	11		100	50	
	12		100	None	
			a	60	None
			b	50	None
			c	None	None
			d	90	25
			e	90	10
			h	60	None
			i	60	None
		j	None	None	
		k	None	None	
		m	None	None	
		n	50	None	

TABLE 6. continued

Alternative	Lifts	PODS	Migration Routes	% Within Deer Staging Area	
VII	1		60	None	
	2		100	None	
	3a		60	None	
	3b		None	None	
	4		90	30	
	5		100	25	
	6		100	10	
	7		100	None	
	8		100	None	
	9		None	None	
	10		None	None	
			a	60	None
			b	50	None
			c	None	None
			d	90	20
		e	90	10	
		f	100	5	
		h	60	None	
		i	60	None	
		j	None	None	
		k	None	None	

## Use Conflicts

A major concern is that the proposed ski development will cut off or significantly affect deer migrations in the area. The periods involved can vary from year to year but generally are: April and May, and October. Typically the ski seasons will begin around Thanksgiving (November 25) and continue to mid-June. During the time the deer are present, snow conditions on the migration routes and staging area are not suitable (texture-soft and mushy; depth - less than 24") for skiing (Figure 2). Snowmaking to improve snow conditions to an acceptable level is not considered economic at the lower elevations where the possible use conflict exists (O'Connor, 1986, personal communication). Thus, a use conflict occurs only for Alternates IV, V, and VI; whereas, a modification of the normal ski operations so as not to interfere with deer migrations or staging can be accomplished by Alternates I, II, III and VII. This modification would entail closing ski operations from the Motocross area and overlifting skiers from the Snowcreek Base to the upper slopes.

Additional important use conflicts in the area include livestock grazing (cattle, horses, sheep) and Motocross activities. Although there are no data available indicating direct mortality to deer due to poor food and cover conditions on the deer migration routes or the staging area, it is reasonable to assume that forage and browse for deer in these areas could be improved substantially by restricting or eliminating grazing competition.

The Motocross area receives heavy recreational use by cyclists, off-road vehicle enthusiasts, and campers during the spring deer migration

period—estimated 25,000± people in the area at peak activity. This peak of human activity is matched by peak deer density on the staging area.

#### Off-site Influences

Off-site impacts to wildlife, whether the proposed action occurs or not, will increase in time from increased human density in surrounding areas. Mammoth Lakes will increase in size and population, and developments such as Snowcreek will hasten the process. The wildlife resource likely to be most affected will be the deer. The major negative off-site impacts will probably be from motorcyclists, free-roaming dogs, deer-people proximity, and moving object activity (cars, equestrians, hikers, off-road vehicles, construction equipment). Currently, the greatest off-site negative impacts to deer in the area relate to human disturbances from the Motocross area and hiway mortality during migration.

With regard to the proposed action alternatives, the off-site impacts will be similar except that: (1) some alternatives have higher skier capacities (Alternatives II - 9,559; III - 14,511; V - 10,159; VI - 14,326;) and (2) certain alternatives (Alternatives I, II, III and VII) can modify their ski operations to accommodate the migrating or staging deer.

# Figure 2

Sherwin Mtn. Ski Development

- Showing Deer Staging Area

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be sent by 3-31-86  
Sandy K

## Comparison of Alternatives

### 1. No Action Alternative

#### Actions Considered

##### A. No Sherwin Mountain Ski Area Development

Impacts to wildlife on the mountain from this alternative would not differ in the short term from present conditions and current stresses assuming wildlife populations remain about the same as at present. In the long term, whether there is ski area development or not and as time progresses and the human population of the Mammoth Lakes area expands, increased secondary impacts of probable increasing intensity and stress on wildlife utilizing the general area will occur. These will be mainly off-site impacts likely to be expressed as more car-deer highway accidents, increased poaching and harassment by humans and free-roaming dogs, and increased disturbance from motorcyclists, hunters, campers, hikers, etc.

##### B. Alternative I

Snowcreek and Fingers Bases, five lifts with a total capacity of 4,885 and an operating season varying from 87-175 days (121 ave.) (Figure 3).

Short Term impacts to wildlife would be associated mainly with construction activities, which would disturb important habitats (Table 8), create general area disturbance, and increase conflicts with humans (Table 9). In the long term, habitats would be modified and changes in vegetation composition would occur on 88 acres. Assuming mitigative reclamation of the important brush habitat, successional recovery of revegetated areas (52 acres) would likely be slow. POD's a, b, d, and e are in the areas of moderate to very high erosion potential and low fertility. Lifts, after initial

Figure 3

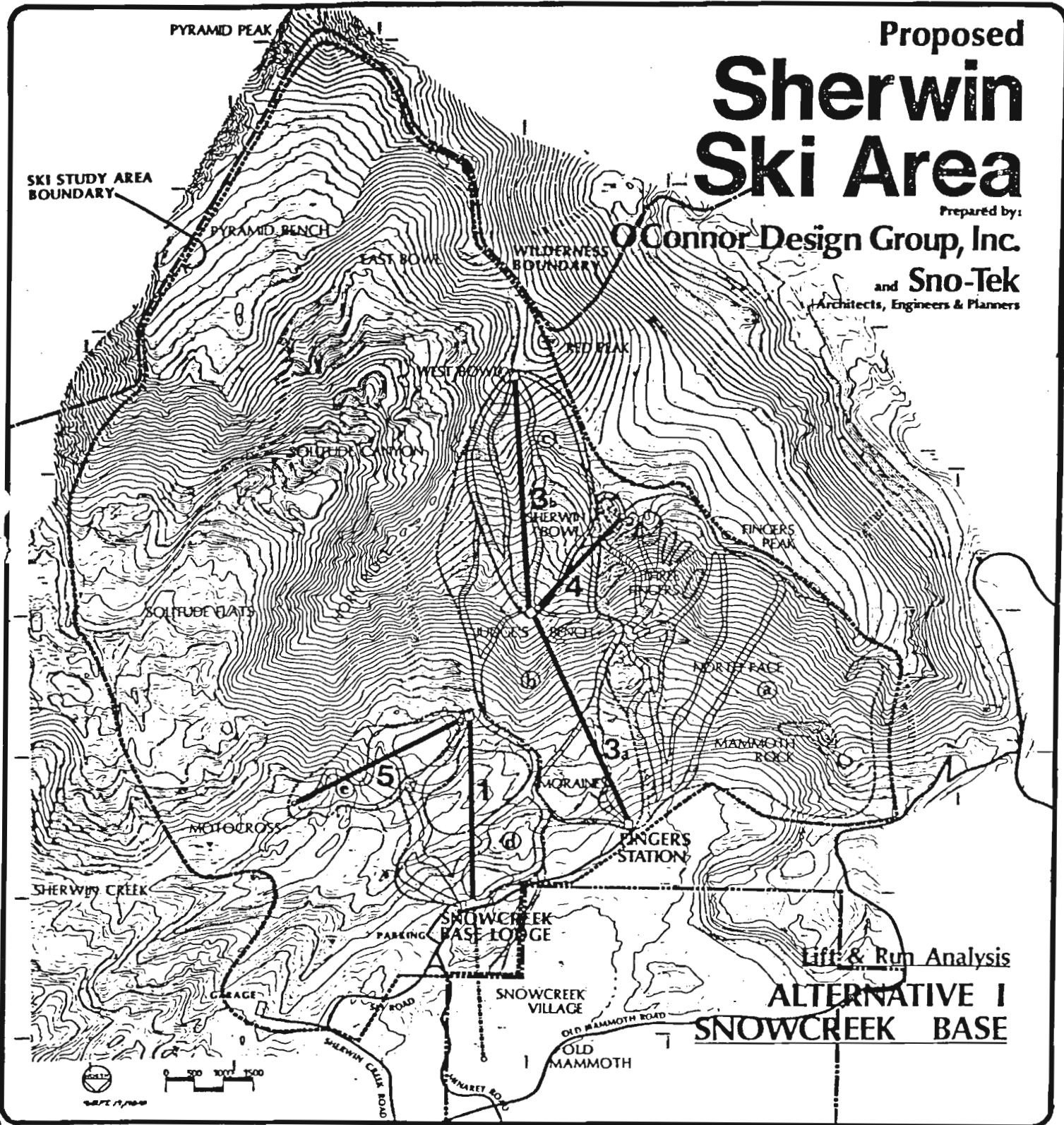


TABLE 8. Deer Migration Impacts, Alternative I

Alternative I	% Within Deer Staging Area	% of Deer Migration Route Within Area	% Type Habitat Affected
<u>Lifts</u>			
1	30	90	C-50 B-50
3a	None	60	C-80 B-20
3b	None	None	WBP-100
4	None	None	WBP-100
5	25	100	C-40 B-60
<u>POD</u>			
a	None	60	WBP-60 C-40
b	None	50	C-60 B-10 WBP-30
c	None	None	WBP-90 BR-10
d	25	90	C-40 B-60
e	10	90	B-70 C-30

B - Brush  
BR - Bare  
C - Conifer  
WBP - White-bark pine



TABLE 9. Evaluation of Impacting Actions Alternative I.  
Snowcreek and Fingers Bases, five lifts with a total capacity of 4,885 and an operating season varying from 87-175 days (172 ave.).

POD	Assoc. Lifts	Total POD Acres Terrain Area	% Disturbance (1)	% Revegetation	Environmental Sensitivity	Sphere of Influence				Time Span			Mitigative	Unavoidable	Irreversible (2)	Enhancement Possible		
						Local Area (Micro)		Area of Interest (Mco)		Counties	State (Macro)	Short Term					Mid Term	Long Term
						Primary	Secondary	Primary	Secondary	Primary	Secondary	0-5 yrs.	5-25 yrs.	50-100 yrs.				
a.		419/153	5	2	Medium	Moderate Negative	Moderate Negative	Low Negative	Low Negative	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	Yes-Min
b.		241/31	40	6	Medium	Moderate Negative	Low Negative	Low Negative	Low Negative	None	None	Low Negative	Low Negative	Low Negative	Partially	Yes	Yes	Yes-Min
c.		153/50	1	0	Medium	Moderate Negative	Low Negative	None	None	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	No
d.		92/43	100	50	Medium	High Negative	Moderate Negative	Low Negative	Low Negative	None	None	High Negative	Moderate Negative	Low Negative	Partially	Yes	Yes	Yes-Min
e.		46/32 953/310	75	75	Medium	High Negative	Moderate Negative	Low Negative	Low Negative	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	Yes-Min
	1				Medium	Moderate Negative	Low Negative	Low Negative	Low Negative	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	No
	3a				Medium	High Negative	Moderate Negative	Low Negative	Low Negative	None	None	High Negative	Moderate Negative	Low Negative	Partially	Yes	Yes	No
	3b				High	Low Negative	Low Negative	None	None	None	None	Low Negative	Low Negative	Low Negative	Partially	Yes	Yes	No
	4				Medium	Low Negative	Low Negative	None	None	None	None	Low Negative	Low Negative	Low Negative	Partially	Yes	Yes	No
	5				Medium	Moderate Negative	Moderate Negative	Low Negative	Low Negative	None	None	Moderate Negative	Moderate Negative	Low Negative	Partially	Yes	Yes	No

(1) Slight variations might occur in % disturbance and % revegetation for the different alternatives.

(2) Physical disturbance in sensitive environment that cannot be totally mitigated by existing technology.

installation, usually have little influence on deer movements. Such structures apparently are accepted as part of the natural, physical environment. Utilization of natural openings by this alternative is low but area disturbance is less than 10% with 50% of the disturbed area to be revegetated. A total of 36 acres (41%) will not be revegetated. Only about 30% of the total deer migration routes will be affected by this alternative. Disturbances to deer in the staging area can be alleviated significantly through modifications of ski operations. As time would continue, wildlife-human conflicts would increase due to increase human density in the general area. Water resources would be affected to a minor degree. Modification of the environment, such as a surface disturbance can result in a negative behavioral response, sometimes called a negative impact or a conflict. Such a negative behavioral response could be expected within the deer migration routes and staging area if no mitigative measures were applied (POD's a, b, d, and e).

The negative impacts to wildlife created by this alternative can be mitigated or the general disturbed habitats enhanced by:

1. Minimizing extent of development surface area disturbances; utilizing swath-type cutting; and leaving low brush and low ground cover in place and relatively undisturbed. This will protect the watershed, reduce soil erosion, stabilize slopes, assure continuance of native plants, and stimulate sprout growth of browse.

2. Revegetating all disturbed areas as soon as possible, and fertilizing and irrigating revegetated areas. This will hasten food and cover establishment and growth.

3. Fertilizing the deer - staging area regularly (every 3rd year) to provide increased browse and forage development.

4. Protecting and not disturbing existing high use areas such as seeps, willow thickets, and meadows; creating and developing additional, new water resources which in turn will develop habitats attractive to a variety of wildlife.

5. Performing construction activities during the period July 1 to October 1 so as not to interfere with the major deer migration.

6. Restricting or eliminating livestock grazing on the staging area and within the migration routes so as to provide increased quantity and quality of forage available to wildlife.

7. Moving Motocross-associated activities to a different area so as not to conflict with deer migration and staging.

8. Installing barrier or drift fences to divert migrating deer away from the hiway as well as erecting additional signs and flashing signals to alert drivers of possible car-deer accident hazards along hiways 395 and 203. Additional public awareness has the potential for reducing existing hiway mortality for deer 50-70 percent.

9. Considering a different schedule for ski operations so as not to conflict with migrating deer based on a monitoring program of deer movements; thus, (a) close lifts 1 and 5 during deer migration and use only lift 3a to overlift skiers to the upper areas; (b) operate all lifts but only during 10:00 a.m. to 3:00 p.m. - a period of minimal deer movement; (c) a combination of a and b; or (d) shut down any lift and/or close any trails which monitoring information shows might interfere with deer staging or migration. Because of a local scarcity of snow in the vicinity of lifts

1 and 5 any year, an altering of the operations schedule might not be needed; however, by monitoring deer migration in spring and fall a conflict with deer migration would be alleviated.

### C. Alternative II

Snowcreek and Fingers bases, nine lifts with a total capacity of 9,559 and an operating season varying from 87-175 days (174 ave.) (Figure 5, Tables 10 and 11).

Impacts to wildlife would be mainly short term from disturbances to habitats during the construction period. However, the extensiveness of the proposed disturbed area(143 acres of which 60 would not be revegetated) would create many moderate primary and secondary impacts. The effects of the disturbances would be mainly short term but would continue into long term because PODs c, i, j and k are located in sensitive high elevation areas where revegetation would be more difficult. PODs a, d, e, g, h, and i are in moderate to very high erosion and low fertility areas, and PODs a, b, d, e, g, h, and i are in critical portions of the deer migration routes and staging area. A limited amount of deer summer range might be improved by the revegetated mountain trails by providing additional forage, habitat diversity, and increasing edge values. Water resources would be moderately affected as a result of the extensive surface disturbance. Habitats important to deer (meadows, willow thickets, coniferous forest and brush) would be impacted.

It would be possible to alleviate most of the impacts to the deer in the staging area by modifying ski operations; thus deer-people confrontations could be kept at a low level provided the mitigative measures given below were implemented.

Figure 4

# Proposed Sherwin Ski Area

Prepared by:  
**O'Connor Design Group, Inc.**  
and **Sno-Tek**  
Architects, Engineers & Planners

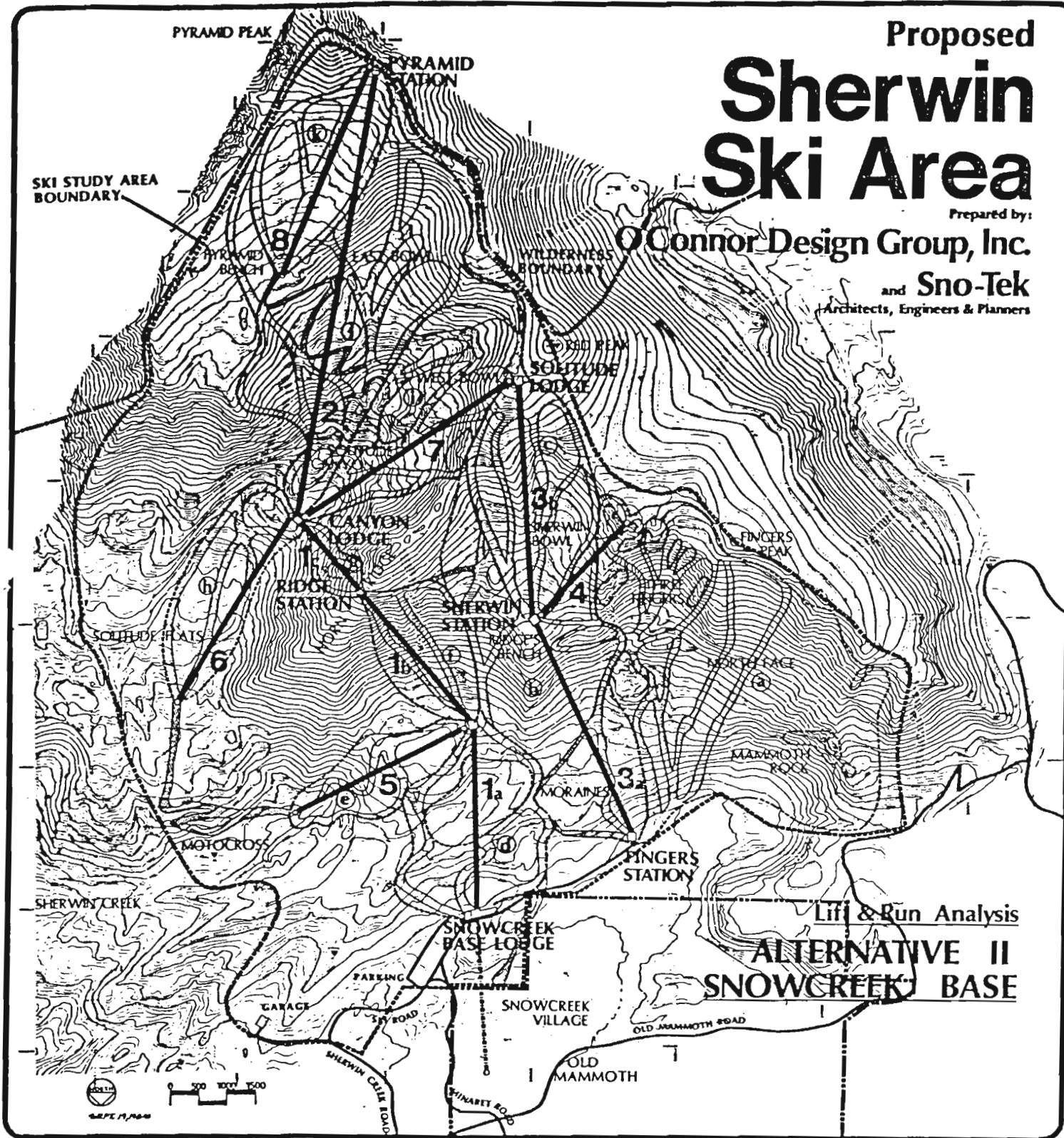


TABLE 10. Deer Migration Impacts, Alternative II

Alternative II	% Within Deer Staging Area	% of Deer Migration Routes Within Area	% Type Habitat Affected
<u>Lifts</u>			
1a	30	90	C-50 B-50
1b	None	None	C-100
1c	None	80	B-100
2	None	None	BR-10 WBP-50 C-40
3a	None	60	C-80 B-20
3b	None	None	WBP-100
4	None	None	WBP-100
5	25	100	B-60 C-40
6	None	100	C-100
7	None	100	B-80 WBP-20
8	None	None	WBP-90 BR-10
<u>POD</u>			
a	None	30	WBP-60 C-40
b	None	50	C-60 B-10 WBP-30
c	None	None	WBP-90 BR-10
d	25	90	C-40 B-60
e	10	90	B-70 C-30
f	None	None	C-80 WBP-20
g	None	100	WBP-100
h	None	60	C-100
i	None	60	B-90 C-10
j	None	None	C-80 WBP-20
k	None	None	

B - Brush  
BR - Bare  
C - Conifer  
WBP - White-bark pine

TABLE 11. Evaluation of Impacting Actions Alternative II. Snowcreek and Fingers Bases, nine lifts with a total capacity of 9,559 and an operating season varying from 87-175 days (147 ave.).

POD	Assoc. Lifts	Total POD Acres Terrain Area	% Disturbance (1)	% Revegetation	Environmental Sensitivity	Local Area (Micro)		Sphere of Influence Area of Interest (Meso)		Counties - State (Macro)		Time Span			Mitigative	Unavoidable	Irreversible (2)	Enhancement Possible
						Primary	Secondary	Primary	Secondary	Primary	Secondary	Short Term 0-5 yrs.	Mid Term 5-25 yrs.	Long Term 50-100 yrs.				
a.		419/140	5	2	Medium	Moderate Negative	Moderate Negative	Low Negative	Low Negative	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	Yes-Minor
b.		241/28	40	6	Medium	Moderate Negative	Low Negative	Low Negative	Low Negative	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	Yes-Minor
c.		153/64	1	0	Medium	Moderate Negative	Low Negative	None	None	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	No
d.		92/40	100	50	Medium	High Negative	Moderate Negative	Low Negative	Low Negative	None	None	High Negative	Moderate Negative	Low Negative	Partially	Yes	Yes	Yes-Minor
e.		46/24	75	75	Medium	High Negative	Moderate Negative	Low Negative	Low Negative	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	Yes-Minor
f.		67/17	20	10	Medium	Moderate Negative	Low Negative	Low Negative	Low Negative	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	No
g.		15/8	5	2	High	High Negative	Moderate Negative	Moderate Negative	Low Negative	Low Negative	None	High Negative	Moderate Negative	Low Negative	Partially	Yes	Yes	No
h.		106/34	40	40	High	High Negative	Moderate Negative	Moderate Negative	Low Negative	Low Negative	None	High Negative	Moderate Negative	Low Negative	Partially	Yes	Yes	No
i.		151/53	30	15	High	High Negative	Moderate Negative	Moderate Negative	Low Negative	Low Negative	None	High Negative	Moderate Negative	Low Negative	Partially	Yes	Yes	No
j.		302/98	30	15	High	Moderate Negative	Low Negative	None	None	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	No
k.		116/27 1,710/391	5	0	High	Moderate Negative	Low Negative	None	None	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	No
1a					Medium	Moderate Negative	Low Negative	Low Negative	Low Negative	None	None	Moderate Negative	Moderate Negative	Low Negative	Partially	Yes	Yes	No
1b					Medium	Low Negative	Low Negative	None	None	None	None	Low Negative	Low Negative	None	Partially	Yes	Yes	No
1c					Medium	High Negative	Moderate Negative	Low Negative	Low Negative	None	None	High Negative	Moderate Negative	Low Negative	Partially	Yes	Yes	No
2					High	Moderate Negative	Moderate Negative	Low Negative	Low Negative	None	None	Moderate Negative	Moderate Negative	Low Negative	Not Likely	Yes	Yes	No
3a					Medium	High Negative	Moderate Negative	Low Negative	Low Negative	one	None	High Negative	Moderate Negative	Low Negative	Partially	Yes	Yes	No
3b					High	Low Negative	Low Negative	None	None	one	None	Low Negative	Low Negative	Low Negative	Partially	Yes	Yes	No
5					Medium	Moderate Negative	Moderate Negative	Low Negative	Low Negative	one	None	Moderate Negative	Moderate Negative	Low Negative	Partially	Yes	Yes	No
6					Medium	Moderate Negative	Moderate Negative	Low Negative	Low Negative	one	None	Moderate Negative	Moderate Negative	Low Negative	Partially	Yes	Yes	No
7					High	Moderate Negative	Moderate Negative	Low Negative	Low Negative	one	None	Moderate Negative	Moderate Negative	Low Negative	Partially	Yes	Yes	No
8					High	Moderate Negative	Moderate Negative	Low Negative	Low Negative	one	None	Moderate Negative	Moderate Negative	Low Negative	Not Likely	Yes	Yes	No

(1) Slight variations might occur in % disturbance and % revegetation for the different alternatives.

(2) Physical disturbance in sensitive environment that cannot be totally mitigated by existing technology.

The negative impacts to wildlife created by this alternative can be mitigated or the general disturbed habitats enhanced by:

1. Minimizing extent of development surface area disturbances; utilizing swath-type cutting; and leaving low brush and low ground cover in place and relatively undisturbed. This will protect the watershed, reduce soil erosion, stabilize slopes, assure continuance of native plants, and stimulate sprout growth of browse.
2. Revegetating all disturbed areas as soon as possible, and fertilizing and irrigating revegetated areas. This will hasten food and cover establishment and growth.
3. Fertilizing the deer - staging area regularly (every 3rd year) to provide increased browse and forage development.
4. Protecting and not disturbing existing high use areas such as seeps, willow thickets, and meadows; creating and developing additional, new water resources which in turn will develop habitats attractive to a variety of wildlife.
5. Performing construction activities during the period July 1 to October 1 so as not to interfere with the major deer migration.
6. Restricting or eliminating livestock grazing on the staging area and within the migration routes so as to provide increased quantity and quality of forage available to wildlife.
7. Moving Motocross-associated activities to a different area so as not to conflict with deer migration and staging.



8. Installing barrier or drift fences to divert migrating deer away from the hiway as well as erecting additional signs and flashing signals to alert drivers of possible car-deer accident hazards along hiways 395 and 203. Additional public awareness has the potential for reducing existing hiway mortality for deer 50-70 percent.

9. Considering a different schedule for ski operations so as not to conflict with migrating deer as determined from a monitoring program of deer movements; thus, (1) close lifts 1a, 1c, 5, 6, and 7 during the deer migration periods and use only lifts 1b and 3a to overlift skiers and to service the upper ski area; (b) operate all lifts but only during 10:00 a.m. to 3:00 p.m., a period of minimal deer movement; (c) a combination of (a) and (b) or (d) shut down any lift and/or close any trails which monitoring information shows might interfere with deer staging or monitoring. Service and maintenance functions should be conducted on the ski area during the daylight hours if possible. Under "normal year" snow conditions, the likelihood is low that skiers would be using most of the area concerned during deer migration.

#### D. Alternative III

Snowcreek and Fingers Bases, fourteen lifts with a total capacity of 14,511, and an operating seasons varying from 87-175 days (150 ave.) (Figure 5, Tables 12 and 13).

Impacts to wildlife by this alternative would be mainly moderate to high negative and would extend over a long period of time. The most severe impacts would occur in the short term as construction is initiated and disturbances wide spread. Of all the alternatives, this one affects

the greatest area as well as conflicting significantly with the deer migration routes. A total of 214 acres would be disturbed of which 133 would be revegetated and 81 would not be revegetated. Plant succession of revegetated areas at the higher elevations could be expected to be slow. High altitude sensitive environments would be affected by disturbances in PODs c, i, j, and k as well as impacts in PODs a, b, d, e, l, g, h, m, i and j which have moderate to very high erosion potential and low fertility. Disturbances in PODs, a, b, d, e, g, h, i, l & n could be expected to have significant impacts to migrating deer and their critical brush habitats, with 90% of the total deer migration routes likely to be affected by the proposed actions. However, a modification of ski operations could reduce the severity of the impacts to the migration routes and staging area. Water resources would probably be affected greater than for any other alternative due to the extensive surface changes proposed.

Negative impacts to wildlife from this alternative could be mitigated, reduced and certain local habitats enhanced by:

1. Minimizing extent of development surface area disturbances; utilizing swath-type cutting; and leaving low brush and low ground cover in place and relatively undisturbed. This will protect the watershed, reduce soil erosion, stabilize slopes, assure continuance of native plants, and stimulate sprout growth of browse.
2. Revegetating all disturbed areas as soon as possible, and fertilizing and irrigating revegetated areas. This will hasten food and cover establishment and growth.

3. Fertilizing the deer - staging area regularly (every 3rd year) to provide increased browse and forage development.

4. Protecting and not disturbing existing high use areas such as seeps, willow thickets, and meadows; creating and developing additional, new water resources which in turn will develop habitats attractive to a variety of wildlife.

5. Performing construction activities during the period July 1 to October 1 so as not to interfere with the major deer migration.

6. Restricting or eliminating livestock grazing on the staging area and within the migration routes so as to provide increased quantity and quality of forage available to wildlife.

7. Moving Motocross-associated activities to a different area so as not to conflict with deer migration and staging.

8. Installing barrier or drift fences to divert migrating deer away from the hiway as well as erecting additional signs and flashing signals to alert drivers of possible car-deer accident hazards along hiways 395 and 203. Additional public awareness has the potential for reducing existing hiway mortality for deer 50-70 percent.

9. Considering a different schedule for ski operations so as not to conflict with migrating deer as determined from a monitoring program of deer movements; thus, (a) close lifts 1a, 1c, 5, 6, 9, and 11 during the deer migration periods and use only lifts 1b, 2, 3a, 3b, 4, 8 and 10 to overlift skiers and to service the upper areas; (b) operate all lifts but only during 10:00 a.m. to 3:00 p.m., a period of minimal deer movement; (c) a combination of (a) and (b); or (d) shut down any lift and/or close any trails which monitoring information shows might interfere with deer staging or monitoring. Service and maintenance functions should be conducted on the ski area during the daylight hours if possible.

Figure 5

# Proposed Sherwin Ski Area

Prepared by:  
**O'Connor Design Group, Inc.**  
and **Sno-Tek**  
Architects, Engineers & Planners

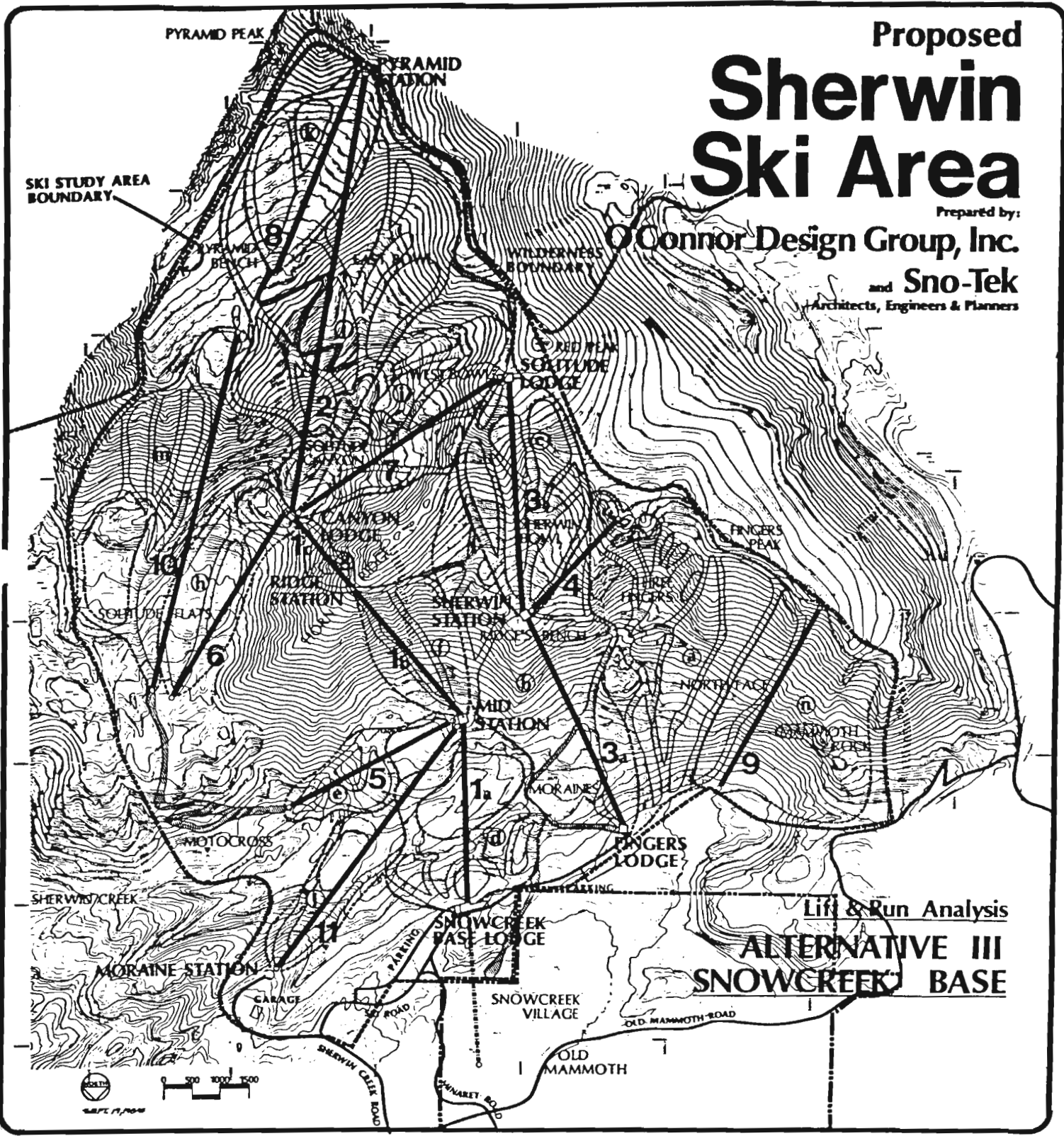


TABLE 12. Deer Migration Impacts, Alternative III

Alternative III	% Within Deer Staging Area	% of Deer Migration Routes Within Area	% Type Habitat Affected
<u>Lifts</u>			
1a	30	90	C-50 B-50
1b	None	None	C-100
1c	None	80	B-100
2	None	None	BR-10 BP-50 C-40
3a	None	60	B-20 C-80
3b	None	None	WBP-100
4	None	None	WBP-100
5	25	100	B-60 C-40
6	None	100	C-100
7	None	100	B-80 WBP-20
8	None	None	WBP-90 BR-10
9	None	100	BR-10 C-30 WBP-60
10	None	30	C-80 WBP-20
11	50	100	B-100

TABLE 12. continued

Alternative III	% Within	% of Deer Migration Routes Within Area	% Type Habitat Affected
<u>POD</u>			
a	None	60	C-50 WBP-50
b	None	50	C-60 B-10 WBP-30
c	None	None	WBP-90 BR-10
d	25	90	C-40 B-60
e	10	90	C-30 B-70
f	None	None	WBP-10 C-90
g	None	100	B-100
h	None	60	C-100
i	None	60	C-10 B-90
j	None	None	WBP-80 C-20
k	None	None	WBP-70 BR-30
l	90	100	B-100
m	None	None	WBP-30 C-70
n	None	50	WBP-60 C-40

B - Brush  
 BR - Bare  
 C - Conifer  
 WBP - White-bark pine

TABLE 13. Evaluation of Impacting Actions Alternative III, Snowcreek and Fingers Bases, fourteen lifts with a total capacity of 14,511 and an operating season varying from 87-175 days (150 ave.).

POD	Assoc. Lifts	Total POD Acres Terrain Area	% Disturbance (1)	% Revegetation	Environmental Sensitivity	Local Area (Micro)		Sphere of Influence Area of Interest (Meso)		County - State (Macro)		Time Span			Mitigative	Unavoidable	Irreversible(2)	Enhancement Possible
						Primary	Secondary	Primary	Secondary	Primary	Secondary	Short Term 0-5 yrs.	Mid Term 5-25 yrs.	Long Term 50-100 yrs.				
a.		237/170	5	2	Medium	Moderate Negative	Moderate Negative	Low Negative	Low Negative	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	Yes-Minor
b.		241/41	40	6	Medium	Moderate Negative	Low Negative	Low Negative	Low Negative	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	Yes-Minor
c.		153/74	1	0	Medium	Moderate Negative	Low Negative	None Negative	None Negative	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	No
d.		92/42	100	50	Medium	High Negative	Moderate Negative	Low Negative	Low Negative	None	None	Moderate Negative	Moderate Negative	Low Negative	Partially	Yes	Yes	Yes-Minor
e.		46/44	75	75	Medium	High Negative	Moderate Negative	Low Negative	Low Negative	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	Yes-Minor
f.		67/17	20	10	Medium	Moderate Negative	Low Negative	Low Negative	Low Negative	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	Yes-Minor
g.		15/9	5	2	High	High Negative	Moderate Negative	Moderate Negative	Low Negative	Low Negative	None	High Negative	Moderate Negative	Low Negative	Partially	Yes	Yes	No
h.		106/33	40	40	High	High Negative	Moderate Negative	Moderate Negative	Low Negative	Low Negative	None	High Negative	Moderate Negative	Low Negative	Partially	Yes	Yes	No
i.		151/56	30	15	High	High Negative	Moderate Negative	Moderate Negative	Low Negative	Low Negative	None	High Negative	Moderate Negative	Low Negative	Partially	Yes	Yes	No
j.		302/122	30	15	High	Moderate Negative	Low Negative	None	None	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	No
k.		116/26	5	0	High	Moderate Negative	Low Negative	None	None	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	No
l.		60/28	100	100	High	High Negative	Moderate Negative	Low Negative	Low Negative	None	None	High Negative	Moderate Negative	Low Negative	Partially	Yes	Yes	Yes-Minor
m.		215/105	5	2	Medium	Moderate Negative	Low Negative	Low Negative	Low Negative	None	None	Moderate Negative	Low Negative	Low	Partially	Yes	Yes	No
n.		182/85 1,981/850	5	2	Medium	Moderate Negative	Low Negative	Low Negative	Low Negative	None	None	Moderate Negative	Low Negative	None Negative	Partially	Yes	Yes	Yes-Minor
1a					Medium	High Negative	Moderate Negative	Low Negative	Low Negative	None	None	High Negative	Moderate Negative	Low Negative	Partially Likely	Yes	Yes	No
1b					Medium	Low Negative	Low Negative	None	None	None	None	Low Negative	Low Negative	None	Partially	Yes	Yes	No
2					High	Moderate Negative	Moderate Negative	Low Negative	Low Negative	None	None	Moderate Negative	Moderate Negative	Low Negative	Not Likely	Yes	Yes	No
3a					Medium	Moderate Negative	Moderate Negative	Low Negative	Low Negative	None	None	High Negative	Moderate Negative	Low Negative	Partially	Yes	Yes	No
3b					High	Low Negative	Low Negative	None	None	None	None	Low Negative	Low Negative	Low Negative	Partially	Yes	Yes	No
4					Medium	Low Negative	Low Negative	None	None	None	None	Low Negative	Low Negative	Low Negative	Partially	Yes	Yes	No
5					Medium	Moderate Negative	Moderate Negative	Low Negative	Low Negative	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	No
6					Medium	Moderate Negative	Moderate Negative	Low Negative	Low Negative	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	No
7					High	Moderate Negative	Moderate Negative	Low Negative	Low Negative	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	No
8					High	Moderate Negative	Moderate Negative	Low Negative	Low Negative	None	None	Moderate Negative	Moderate Negative	Low Negative	Not Likely	Yes	Yes	No
9					Medium	Low Negative	Low Negative	None	None	None	None	Low Negative	Low Negative	Low Negative	Partially	Yes	Yes	No
10					Medium	Moderate Negative	Low Negative	Low Negative	None	None	None	Moderate Negative	Moderate Negative	Low Negative	Not Likely	Yes	Yes	No
11					Medium	Moderate Negative	Moderate Negative	Low Negative	Low	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	No

(1) Slight variations might occur in % disturbance and % revegetation for the different alternatives.

(2) Physical disturbance in sensitive environment that cannot be totally mitigated by existing technology.

#### D. Alternative IV

Motocross Base, four lifts with a capacity of 4,002 and an operating season varying from 87-175 days (150 ave.) (Figure 6 and Tables 14 and 15).

Likely impacts to wildlife associated with this alternative tend to be moderate with a few low and high negative ratings. The most stressful likely impacts would be localized, short term and associated with construction activities. Because proportionally there is more disturbance proposed in high altitude sensitive environments, there would be lingering long term impacts. Much of the proposed development occurs on areas of moderate to very high erosion potential and low fertility. Of all the alternatives this one offers the least area disturbances and only 17 acres not revegetated. About 50% of the total deer migration routes are likely to be affected but conflicts are likely to be high in the staging area because the Motocross Base will be used. Impacts to water resources would likely be minor. POD's e and h and lifts 1, 5 and 10 could have significant negative impacts on deer migration, mainly in Solitude Canyon but also the important staging area in the vicinity of the Motocross Lift 1 at which point two major portions of the deer migration routes join. Modifications to ski operations to reduce deer migration and staging area impacts is not possible with this alternative.

The negative impacts to wildlife created by this alternative can be mitigated or the general disturbed habitats enhanced by:

1. Minimizing extent of development surface area disturbances; utilizing swath-type cutting; and leaving low brush and low ground cover in place and relatively undisturbed. This will protect the watershed, reduce soil erosion, stabilize slopes, assure continuance of native plants, and stimulate sprout growth of browse.



2. Revegetating all disturbed areas as soon as possible, and fertilizing and irrigating revegetated areas. This will hasten food and cover establishment and growth.

3. Fertilizing the deer - staging area regularly (every 3rd year) to provide increased browse and forage development.

4. Protecting and not disturbing existing high use areas such as seeps, willow thickets, and meadows; creating and developing additional, new water resources which in turn will develop habitats attractive to a variety of wildlife.

5. Performing construction activities during the period July 1 to October 1 so as not to interfere with the major deer migration.

6. Restricting or eliminating livestock grazing on the staging area and within the migration routes so as to provide increased quantity and quality of forage available to wildlife.

7. Moving Motocross-associated activities to a different area so as not to conflict with deer migration and staging.

8. Installing barrier or drift fences to divert migrating deer away from the hiway as well as erecting additional signs and flashing signals to alert drivers of possible car-deer accident hazards along hiways 395 and 203. Additional public awareness has the potential for reducing existing hiway mortality for deer 50-70 percent.

#### E. Alternative V

Motocross and Fingers Bases, nine lifts with a capacity of 10,159 and an operating season varying from 87-175 days (184 ave.) (Figure 7 and Tables 16 and 17).

Impacts to wildlife would be mainly short term due to disturbances of habitats by construction activities. The extensiveness of the proposed actions (132 acres of which 83 will be revegetated) and the relative amount of area involved in high altitude sensitive habitats would carry many of the likely impacts into the long term. In addition, PODs e, i, j and k involve areas of moderate to very high erosion potential and low fertility, an important consideration for revegetation. Disturbances in PODs a, d, e, h and a portion of i would have significant negative effects on the deer migration routes and staging area. Approximately 80% of the total deer migration routes would likely be affected. Lifts 1, 3a, 5, 6, 7 and the low portion of 2 also could affect the deer migration routes negatively particularly the staging area and the migration route in Solitude Canyon. Water resources could be materially affected with over half of the drainages involved likely to be disturbed. Modifications to ski operations to reduce deer migration and staging area impacts is not possible with this alternative because the base is located at the Motocross.

The negative impacts to wildlife created by this alternative can be mitigated or the general disturbed habitats enhanced by:

1. Minimizing extent of development surface area disturbances; utilizing swath-type cutting; and leaving low brush and low ground cover in place and relatively undisturbed. This will protect the watershed, reduce soil erosion, stabilize slopes, assure continuance of native plants, and stimulate sprout growth of browse.
2. Revegetating all disturbed areas as soon as possible, and fertilizing and irrigating revegetated areas. This will hasten food and cover establishment and growth.

3. Fertilizing the deer - staging area regularly (every 3rd year) to provide increased browse and forage development.
4. Protecting and not disturbing existing high use areas such as seeps, willow thickets, and meadows; creating and developing additional, new water resources which in turn will develop habitats attractive to a variety of wildlife.
5. Performing construction activities during the period July 1 to October 1 so as not to interfere with the major deer migration.
6. Restricting or eliminating livestock grazing on the staging area and within the migration routes so as to provide increased quantity and quality of forage available to wildlife.
7. Moving Motocross-associated activities to a different area so as not to conflict with deer migration and staging.
8. Installing barrier or drift fences to divert migrating deer away from the hiway as well as erecting additional signs and flashing signals to alert drivers of possible car-deer accident hazards along hiways 395 and 203. Additional public awareness has the potential for reducing existing hiway mortality for deer 50-70 percent.

Figure 6

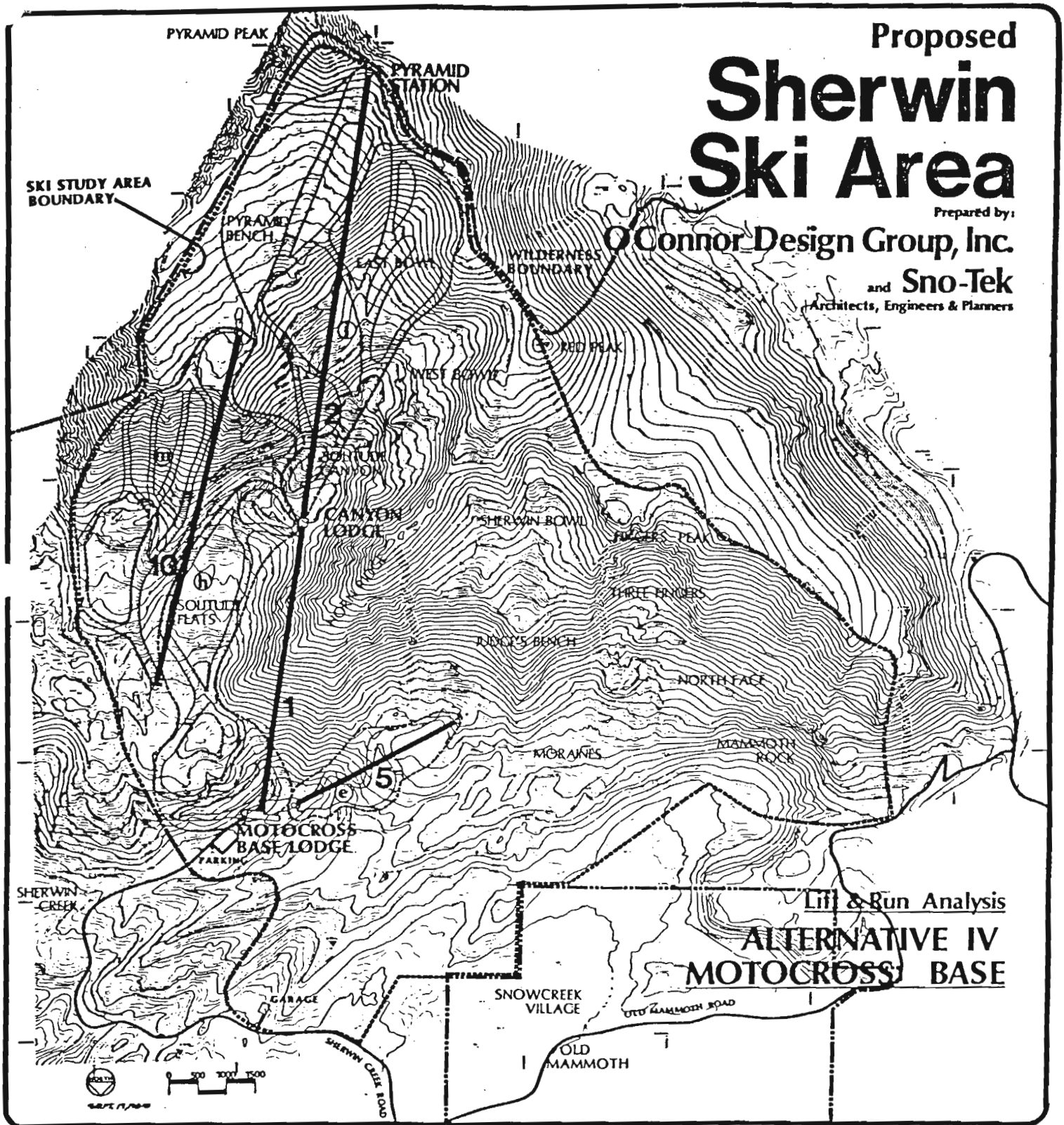


TABLE 14. Deer Migration Impacts, Alternative IV

Alternative IV	% Within Deer Staging Area	% of Deer Migration Routes Within the Area	% Type Habitat Affected
<u>Lifts</u>			
1	5	50	C-60 B-40
2	None	None	BR-10 WBP-50 C-40
5	25	100	B-60 C-40
10	30	30	C-80 WBP-20
<u>POD</u>			
e	10	90	B-70 C-30
h	None	60	C-100
j	None	None	C-20 WBP-80
m	None	None	WBP-30 C-70

B - Brush  
BR - Bare  
C - Conifer  
WBP - White-bark pine

TABLE 15. Evaluation of Impacting Actions Alternative IV.  
Motocross Base, four lifts with a capacity of 4,002  
and an operating season varying from 87-175 days  
(150 ave.).

POD	Assoc. Lifts	Total POD Acres Terrain Area	% Disturbance (1)	% Revegetation	Environmental Sensitivity	Sphere of Influence				Time Span			Mitigative	Unavoidable	Irreversible(2)	Enhancement Possible		
						Local Area (Micro)		Area of Interest (Meso)		Counties-State (Macro)		Short Term					Mid Term	Long Term
						Primary	Secondary	Primary	Secondary	Primary	Secondary	0-5 yrs.	5-25 yrs.	50-100 yrs.				
e.		46/27	75	75	Medium	High Negative	Moderate Negative	Low Negative	Low Negative	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	Yes-Minor
h.		206/51	40	40	High	High Negative	Moderate Negative	Moderate Negative	Low Negative	Low Negative	None	High Negative	Moderate Negative	Low Negative	Partially	Yes	Yes	No
j.		418/99	30	15	High	Moderate Negative	Low Negative	None Negative	None Negative	None	None	High Negative	Moderate Negative	Low Negative	Partially	Yes	Yes	No
m.		215/83 886/260	5	2	Medium	Moderate Negative	Low Negative	Low Negative	Low Negative	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	No
	1				High	High Negative	Moderate Negative	Low Negative	Low Negative	Low Negative	None	High Negative	Moderate Negative	Low Negative	Partially	Yes	Yes	No
	2				High	Moderate Negative	Moderate Negative	Low Negative	Low Negative	None	None	Moderate Negative	Moderate Negative	Low Negative	Not Likely	Yes	Yes	No
	5				Medium	High Negative	Moderate Negative	Low Negative	Low Negative	None	None	High Negative	Moderate Negative	Low Negative	Partially	Yes	Yes	No
	10				Medium	Moderate Negative	Low Negative	Low Negative	Low Negative	None	None	Moderate Negative	Moderate Negative	Low Negative	Not Likely	Yes	Yes	No

(1) Slight variations might occur in % disturbance and % revegetation for the different alternatives.

(2) Physical disturbance in sensitive environment that cannot be totally mitigated by existing technology.

Figure 7

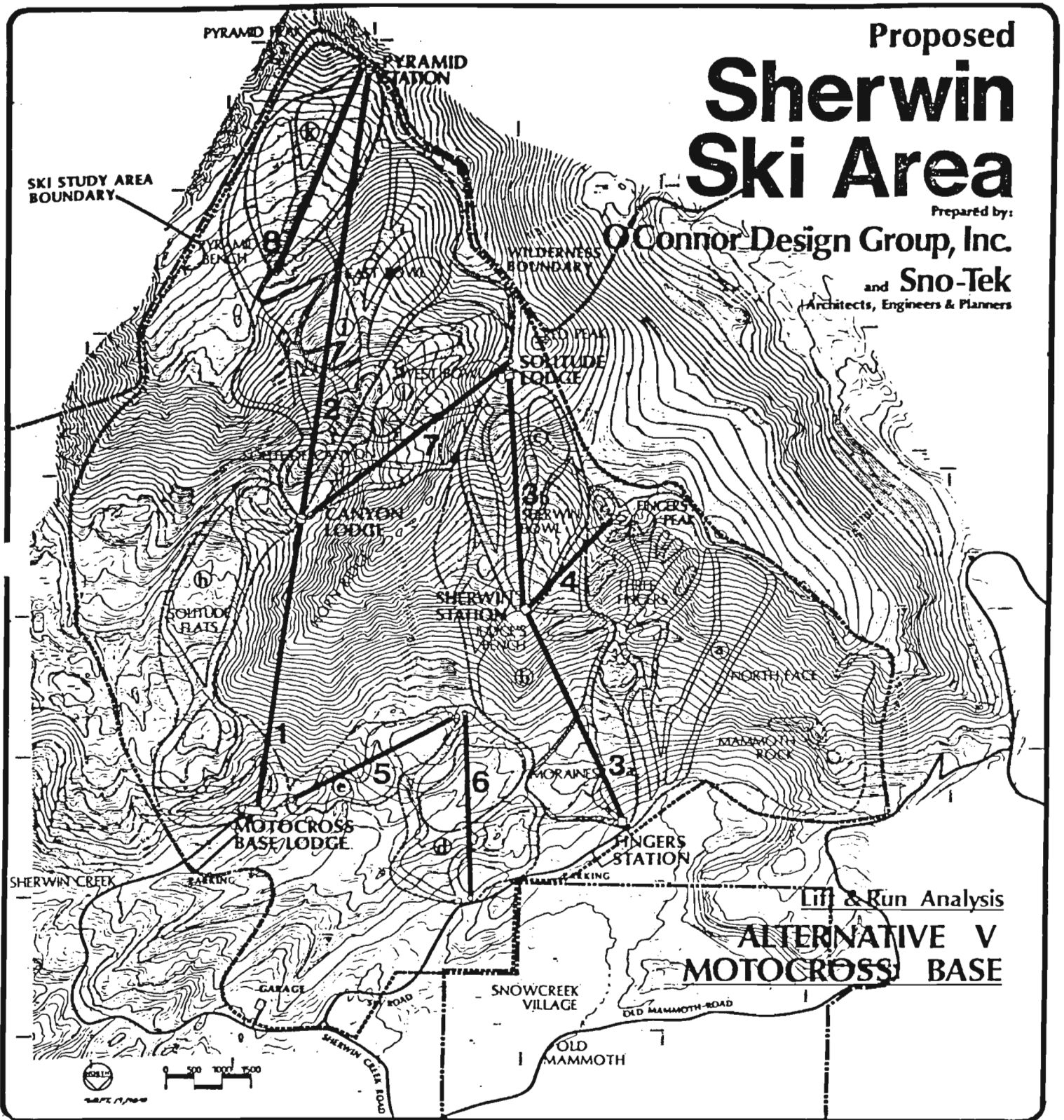


TABLE 16. Deer Migration Impacts, Alternative V

Alternative V	% Within Deer Staging Area	% of Area Conflict with Deer Migration Routes	% Type Habitat Affected
<u>Lifts</u>			
1	None	50	B-40 C-60
2	None	None	BR-100 WBP-50 C-40
3a	None	60	B-20 C-80
3b	None	None	WBP-100
4	None	None	WBP-100
5	25	100	B-60 C-40
6	30	100	C-50 B-50
7	None	100	WBP-100 B-90
8	None	None	BR-100
<u>POD</u>			
a	None	60	C-50 WBP-50
b	None	50	C-60 B-40
c	None	None	WBP-90 BR-10
d	25	90	C-40 B-60
e	10	90	C-30 B-70
h	None	60	C-100
i	None	60	C-10 B-90
j	None	None	C-80 WBP-20
k	None	None	WBP-70 BR-30

B - Brush  
BR - Bare  
C - Conifer  
WBP - White-bark pine



TABLE 17. Evaluation of Impacting Actions Alternative V. Motocross and Fingers Bases, nine lifts with a capacity of 10,159 and an operating season varying from 87-175 days (148 ave.).

POD	Assoc. Lifts	Total POD Acres Terrain Area	% Disturbance (1)	% Revegetation	Environmental Sensitivity	Sphere of Influence				Time Span			Mitigative	Unavoidable	Irreversible (2)	Enhancement Possible		
						Local Area (Micro)		Area of Interest (Meso)		Counties	State (Macro)						Short Term	Mid Term
						Primary	Secondary	Primary	Secondary	Primary	Secondary	0-5 yrs.	5-25 yrs.	50-100 yrs				
a.		419/141	5	2	Medium	Moderate Negative	Moderate Negative	Low Negative	Low Negative	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	Yes-Minor
b.		241/28	40	6	Medium	Moderate Negative	Low Negative	Low Negative	Low Negative	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	Yes-Minor
c.		153/65	1	0	Medium	Moderate Negative	Low Negative	None	None	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	No
d.		92/23	100	50	Medium	High Negative	Moderate Negative	Low Negative	Low Negative	None	None	High Negative	Moderate Negative	Low Negative	Partially	Yes	Yes	Yes-Minor
e.		46/30	75	75	Medium	High Negative	Moderate Negative	Low Negative	Low	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	Yes-Minor
h.		206/47	40	40	High	High Negative	Moderate Negative	Moderate Negative	Low	Low Negative	None	High Negative	Moderate Negative	Low Negative	Partially	Yes	Yes	No
i.		151/54	30	15	High	High Negative	Moderate Negative	Moderate Negative	Low Negative	Low Negative	None	High Negative	Moderate	Low	Partially	Yes	Yes	No
j.		302/103	30	15	High	Moderate Negative	Low Negative	None	None	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	No
k.		116/27 1,728/519	5	0	High	Moderate Negative	Low Negative	None	None	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	No
1					Medium	High Negative	Moderate Negative	Low Negative	Low Negative	Low Negative	None	High Negative	Moderate Negative	Low Negative	Partially	Yes	Yes	No
2					High	Moderate Negative	Moderate Negative	Low Negative	Low Negative	None	None	Moderate Negative	Moderate Negative	Low Negative	Not Likely	Yes	Yes	No
3a					Medium	High Negative	Moderate Negative	Low Negative	Low Negative	None	None	High Negative	Moderate Negative	Low Negative	Partially	Yes	Yes	No
3b					High	Moderate Negative	Low Negative	None	None	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	No
4					Medium	Low Negative	Low Negative	None	None	None	None	Low Negative	Low Negative	Low Negative	Partially	Yes	Yes	No
5					Medium	Moderate Negative	Moderate Negative	Low Negative	Low Negative	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	No
6					Medium	Moderate Negative	Moderate Negative	Low Negative	Low Negative	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	No
7					High	Moderate Negative	Moderate Negative	Low Negative	Low Negative	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	No
8					High	Moderate Negative	Moderate Negative	Low Negative	Low Negative	None	None	Moderate Negative	Moderate Negative	Low Negative	Not Likely	Yes	Yes	No

(1) Slight variations might occur in % disturbance and % revegetation for the different alternatives.

(2) Physical disturbance in sensitive environment that cannot be totally mitigated by existing technology.

#### F. Alternative VI

Motocross and Fingers Bases, thirteen lifts with a total capacity of 14,326 and an operating season varying from 87-175 days (151 ave.) (Figure 8 and Tables 18 and 19).

Impacts to wildlife from this alternative would tend to be extensive, moderate to high, and mainly during construction, but significant impacts could be expected into the long term. This alternative ranks high in the extent of area likely to be disturbed; (201 acres) although, 70% will be revegetated. Additionally, much of the action would occur in high altitude, sensitive environments and moderate to very high erosion potential areas with low fertility. Reclamation and revegetation over most of the proposed alternative area would be difficult and expensive. The deer migration routes would be affected to a serious degree (100% of the total deer migration routes will be affected by disturbances in PODs a, b, d, e, h, i, l and n and lifts 5, 6, 7, 11 and 12. The deer staging area would be impacted significantly by lifts 1, 5, 6 and 11. Water resources affecting important wildlife habitats (willow and aspen groves, wet meadows, seeps, and springs) could be seriously affected since a major portion of all drainages in the area of interest would experience disturbances. Modifications to ski operations to reduce impacts in the deer migration routes and the staging area are not possible with this alternative because the base is located at the Motocross.

The negative impacts to wildlife created by this alternative can be mitigated or the general disturbed habitats enhanced by:

1. Minimizing extent of development surface area disturbances; utilizing swath-type cutting; and leaving low brush and low ground cover in place and relatively undisturbed. This will protect the watershed, reduce soil erosion, stabilize slopes, assure continuance of native plants, and stimulate sprout growth of browse.
2. Revegetating all disturbed areas as soon as possible, and fertilizing and irrigating revegetated areas. This will hasten food and cover establishment and growth.
3. Fertilizing the deer - staging area regularly (every 3rd year) to provide increased browse and forage development.
4. Protecting and not disturbing existing high use areas such as seeps, willow thickets, and meadows; creating and developing additional, new water resources which in turn will develop habitats attractive to a variety of wildlife.
5. Performing construction activities during the period July 1 to October 1 so as not to interfere with the major deer migration.
6. Restricting or eliminating livestock grazing on the staging area and within the migration routes so as to provide increased quantity and quality of forage available to wildlife.
7. Moving Motocross-associated activities to a different area so as not to conflict with deer migration and staging.
8. Installing barrier or drift fences to divert migration deer away from the hiway as well as erecting additional signs and flashing signals to alert drivers of possible car-deer accident hazards along hiways 395 and 203. Additional public awareness has the potential for reducing existing hiway mortality for deer 50-70 percent.

Figure 8

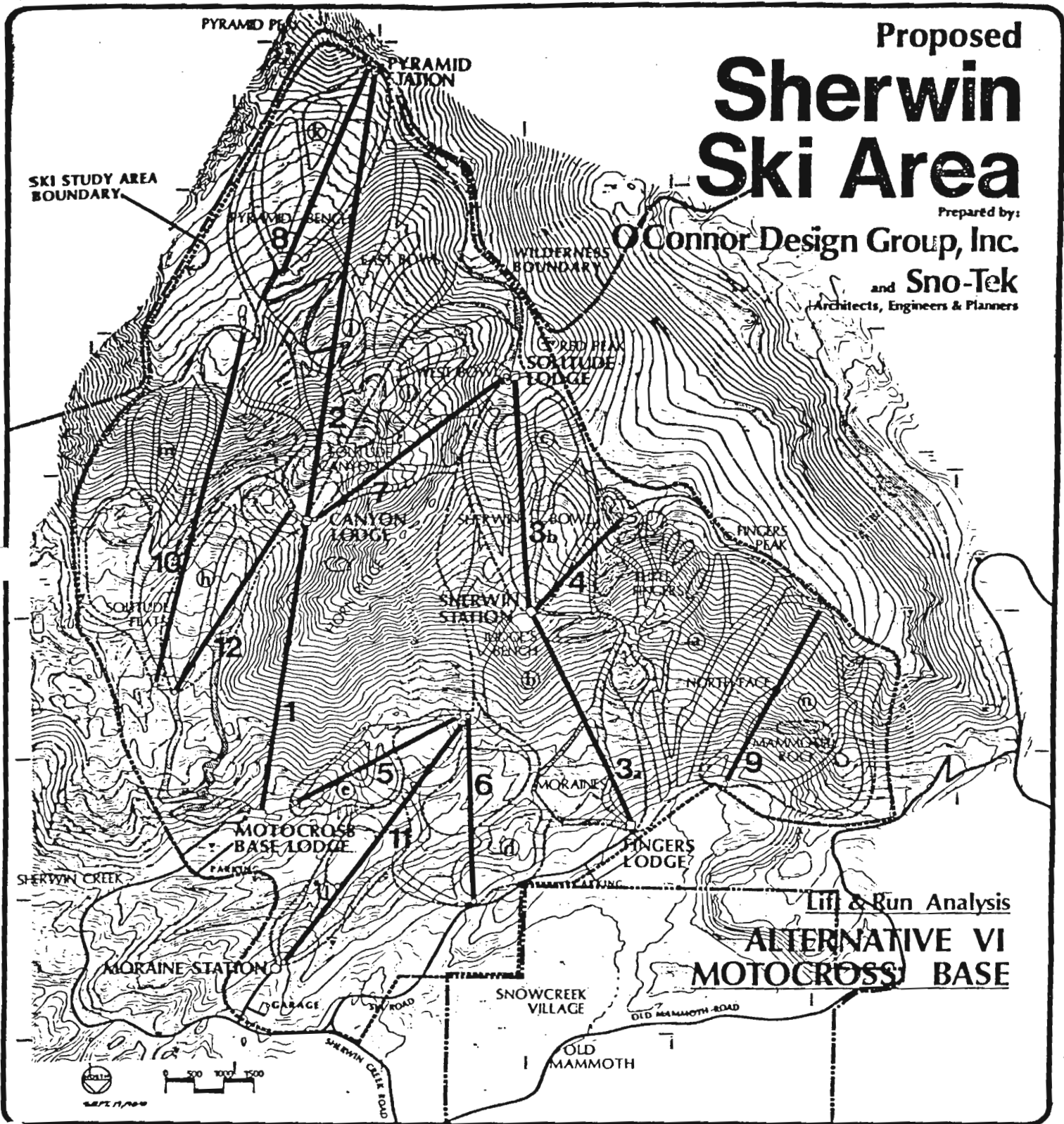


TABLE 18. Deer Migration Impacts, Alternative VI.

Alternative VI.	% Within Deer Staging Area	% of Deer Migration Routes Within the Area	% Type Habitat Affected
<u>Lifts</u>			
1	None	50	C-50 B-50
2	None	None	WBP-60 C-30 BR-10
3a	None	60	B-20 C-80
3b	None	None	WBP-100
4	None	None	WBP-100
5	25	100	B-60 C-40
6	30	100	C-50 B-50
7	None	100	WBP-10 B-90
8	None	None	WBP-70 BR-30
9	None	100	C-80 WBP-20
10	None	30	WBP-90 BR-10
11	50	100	B-100
12	None	100	C-100

continued

TABLE 18. continued

Alternative VI	% Within Deer Staging Area	% of Deer Migration Routes Within the Area	% Type Habitat Affected
<u>POD</u>			
a	None	60	C-50 WBP-50
b	None	50	C-60 B-40
c	None	None	WBP-90 BR-10
d	25	100	C-40 B-60
e	10	100	C-30 B-70
h	None	60	C-100
i	None	60	C-10 B-90
j	None	None	C-80 WBP-20
k	None	None	WBP-70 BR-30
m	None	None	C-70 WBP-30
n	None	50	WBP-60 C-40

B - Brush  
 BR - Bare  
 C - Conifer  
 WBP - White-bark pine

TABLE 19. Evaluation of Impacting Actions Alternative VI. Motocross and Fingers Bases, thirteen lifts with a total capacity of 14,326 and an operating season varying from 87-175 days (151 ave.).

POD	Assoc. Lifts	Total POD Acres Terrain Area	% Disturbance (1)	% Revegetation	Environmental Sensitivity	Sphere of Influence				Time Span			Mitigative	Unavoidable	Irreversible (2)	Enhancement Possible		
						Local Area (Micro)		Area of Interest (Meso)		County-	State (Macro)	Short Term					Mid Term	Long Term
						Primary	Secondary	Primary	Secondary	Primary	Secondary	0-5 yrs.	5-25 yrs.	50-100 yrs.				
a.		238/156	5	2	Medium	Moderate Negative	Moderate Negative	Low Negative	Low Negative	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	Yes-Minor
b.		241/28	40	6	Medium	Moderate Negative	Low Negative	Low Negative	Low Negative	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	Yes-Minor
c.		153/69	1	0	Medium	Moderate Negative	Low Negative	None Negative	None Negative	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	No
d.		92/23	100	50	Medium	High Negative	Moderate Negative	Low Negative	Low Negative	None	None	Moderate Negative	Moderate Negative	Low Negative	Partially	Yes	Yes	Yes-Minor
e.		46/29	75	75	Medium	High Negative	Moderate Negative	Low Negative	Low Negative	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	Yes-Minor
h.		106/61	40	40	High	High Negative	Moderate Negative	Moderate Negative	Low Negative	Low Negative	None	High Negative	Moderate Negative	Low Negative	Partially	Yes	Yes	No
i.		151/70	30	15	High	High Negative	Moderate Negative	Moderate Negative	Low Negative	Low Negative	None	High Negative	Moderate Negative	Low Negative	Partially	Yes	Yes	No
j.		302/126	30	15	High	Moderate Negative	Low Negative	None	None	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	No
k.		116/27	5	0	High	Moderate Negative	Low Negative	None	None	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	No
l.		60/44	100	100	High	High Negative	Moderate Negative	Low Negative	Low Negative	None	None	High Negative	Moderate Negative	Low Negative	Partially	Yes	Yes	Yes-Minor
m.		215/66	5	2	Moderate	Moderate Negative	Low Negative	Low Negative	Low Negative	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	No
n.		182/87 1,904/786	5	2	Moderate	Moderate Negative	Low Negative	Low Negative	Low Negative	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	Yes-Minor
1					Medium	Moderate Negative	Moderate Negative	Low Negative	Low Negative	None	None	High Negative	Moderate Negative	Low	Partially	Yes	Yes	No
2					High	Moderate Negative	Moderate Negative	Low Negative	Low Negative	None	None	Moderate Negative	Moderate Negative	Low Negative	Not Likely	Yes	Yes	No
3a					Medium	Moderate Negative	Moderate Negative	Low Negative	Low Negative	None	None	High Negative	Moderate Negative	Low Negative	Partially	Yes	Yes	No
3b					High	Low Negative	Low Negative	None	None	None	None	Low Negative	Low Negative	Low Negative	Partially	Yes	Yes	No
4					Medium	Low Negative	Low Negative	None	None	None	None	Low Negative	Low Negative	Low Negative	Partially	Yes	Yes	No
5					Medium	Moderate Negative	Moderate Negative	Low Negative	Low Negative	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	No
6					Medium	Moderate Negative	Moderate Negative	Low Negative	Low Negative	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	No
7					High	Moderate Negative	Moderate Negative	Low Negative	Low Negative	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	No
8					High	Moderate Negative	Moderate Negative	Low Negative	Low Negative	None	None	Moderate Negative	Moderate Negative	Low Negative	Not Likely	Yes	Yes	No
9					Medium	Low Negative	Low Negative	None	None	None	None	Low Negative	Low Negative	Low Negative	Partially	Yes	Yes	No
10					Medium	Moderate Negative	Low Negative	Low Negative	None	None	None	Moderate Negative	Moderate Negative	Low Negative	Not Likely	Yes	Yes	No
11					Medium	Moderate Negative	Moderate Negative	Low Negative	Low Negative	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	No
12					Medium	High Negative	Moderate Negative	Low Negative	Low Negative	None	None	High Negative	Moderate Negative	Low Negative	Partially	Yes	Yes	No

(1) Slight variations might occur in % disturbance and % revegetation for the different alternatives.

(2) Physical disturbance in sensitive environment that cannot be totally mitigated by existing technology.

### G. Alternative VII.

Snowcreek Base, eleven lifts with a total capacity of 8,000 and an operating season varying from 87-175 days (148 ave.) (Figure 9 and Tables 20 and 21).

Likely impacts to wildlife associated with Alternative VII would be moderate to high, mainly because the proposed development is extensive (1,883± acres), in high elevation sensitive environments (over 50%) with moderate to very high erosion potential, low fertility and conflicts with deer movements to a major extent (approximately 80% of the total deer migration routes likely to be affected). However, once the lifts are installed, there is usually little effect to deer movements since such structures apparently are accepted as part of the natural physical environment. Without the application of mitigation as described below, the proposed disturbances in PODs a, b, d, e, f, h, and i might have a significant impact. Lifts 2 and 4 could adversely affect deer on the staging area and lifts 5, 6, and 7 could influence deer migration. A total of 175 acres will be disturbed, of which 95 will be revegetated and 80 will not be revegetated. Revegetation of the higher elevation areas is likely to be difficult. Surface disturbances which would influence water resources (infiltration, runoff, and sediment) could adversely influence wildlife habitats indirectly since most of the natural drainages will sustain some disturbance. Short term impacts would be associated mainly with construction activities; whereas the long term impacts would be related mostly to disturbance at high elevations. This alternative lends well to modification of ski operations to alleviate impacts on the deer staging area and migration routes.



Negative impacts to wildlife associated with this alternative could be mitigated, reduced and in certain selected areas enhanced by:

1. Minimizing extent of development surface area disturbances; utilizing swath-type cutting; and leaving low brush and low ground cover in place and relatively undisturbed. This will protect the watershed, reduce soil erosion, stabilize slopes, assure continuance of native plants, and stimulate sprout growth of browse.
2. Revegetating all disturbed areas as soon as possible, and fertilizing and irrigating revegetated areas. This will hasten food and cover establishment and growth.
3. Fertilizing the deer - staging area regularly (every 3rd year) to provide increased browse and forage development.
4. Protecting and not disturbing existing high use areas such as seeps, willow thickets, and meadows; creating and developing additional, new water resources which in turn will develop habitats attractive to a variety of wildlife.
5. Performing construction activities during the period July 1 to October 1 so as not to interfere with the major deer migration.
6. Restricting or eliminating livestock grazing on the staging area and within the migration routes so as to provide increased quantity and quality of forage available to wildlife.
7. Moving Motocross-associated activities to a different area so as not to conflict with deer migration and staging.
8. Installing barrier or drift fences to divert migrating deer away from the hiway as well as erecting additional signs and flashing signals to alert drivers of possible car-deer accident hazards along hiways 395 and 203. additional public awareness has the potential for reducing existing hiway mortality for deer 50-70 percent.

9. Considering a different schedule of ski operations so as to minimize possible conflicts with migrating deer. Under "normal year" snow conditions, the likelihood is low that skiers would be using most of the area also utilized by migrating deer. Thus, an alteration of the ski operations schedule might not be needed. Deer movements relate to local snow conditions, for example: when spring snow depth approached 18-24" or is less on the traditional migration routes and staging area deer movement can be expected; in the fall, deer will start movement from the higher elevations as snow depth accumulates to 18-24". If snowmaking on the mountain trails creates deeper snow depths in traditional migration routes it should not be regarded as a major physical barrier because the snow will be hard-packed and likely frozen during major movement hours (nighttime) so deer travel over these areas should be relatively easy. Nevertheless, if a schedule change in ski operations seems desirable so as not to conflict with deer migration the following is recommended: close lifts 1, 2, 4, 5, 6, 7, 8 and operate lifts 3a, 3b, 9 and 10 from 10:00 a.m. to 3:00 p.m. - a period of minimal deer movement. Lift maintenance and service operations should be conducted during daylight hours. Monitoring of deer movements will be necessary to determine when to change ski operations to accommodate deer migration.

TABLE 20. Deer Migration Impacts, Preferred Alternative.

Alternative VII.	% Within Deer Staging Area	% Affected Deer Migration Routes	% Wildlife Habitat Types
<u>Lifts</u>			
1	None	60	B-10 C-90
2	None	100	C-20 B-80
3a	None	60	B-20 C-80
3b	None	None	WBP-100
4	30	90	B-40 C-60
5	25	100	B-60 C-40
6	10	100	C-100
7	None	100	C-100
8	None	100	B-80 WBP-20
9	None	None	C-30 WBP-60 BR-10
10	None	None	WBP-90 BR-10

continued

TABLE 20. Continued

Alternative VII.	% Within Deer Staging Area	% Affected Deer Migration Routes	% Wildlife Habitat Types
<u>POD</u>			
a	None	60	C-50 WBP-50
b	None	50	C-60 B-40
c	None	None	WBP-90 BR-10
d	20	80	C-40 B-60
e	10	90	C-30 B-70
f	5	100	C-100
h	None	60	C-100
i	None	60	C-10 B-90
j	None	None	C-80 WBP-20
k	None	None	WBP-70 BR-30

B Brush  
 BR - Bare  
 C - Conifer  
 WBP - White-bark pine

Figure 9

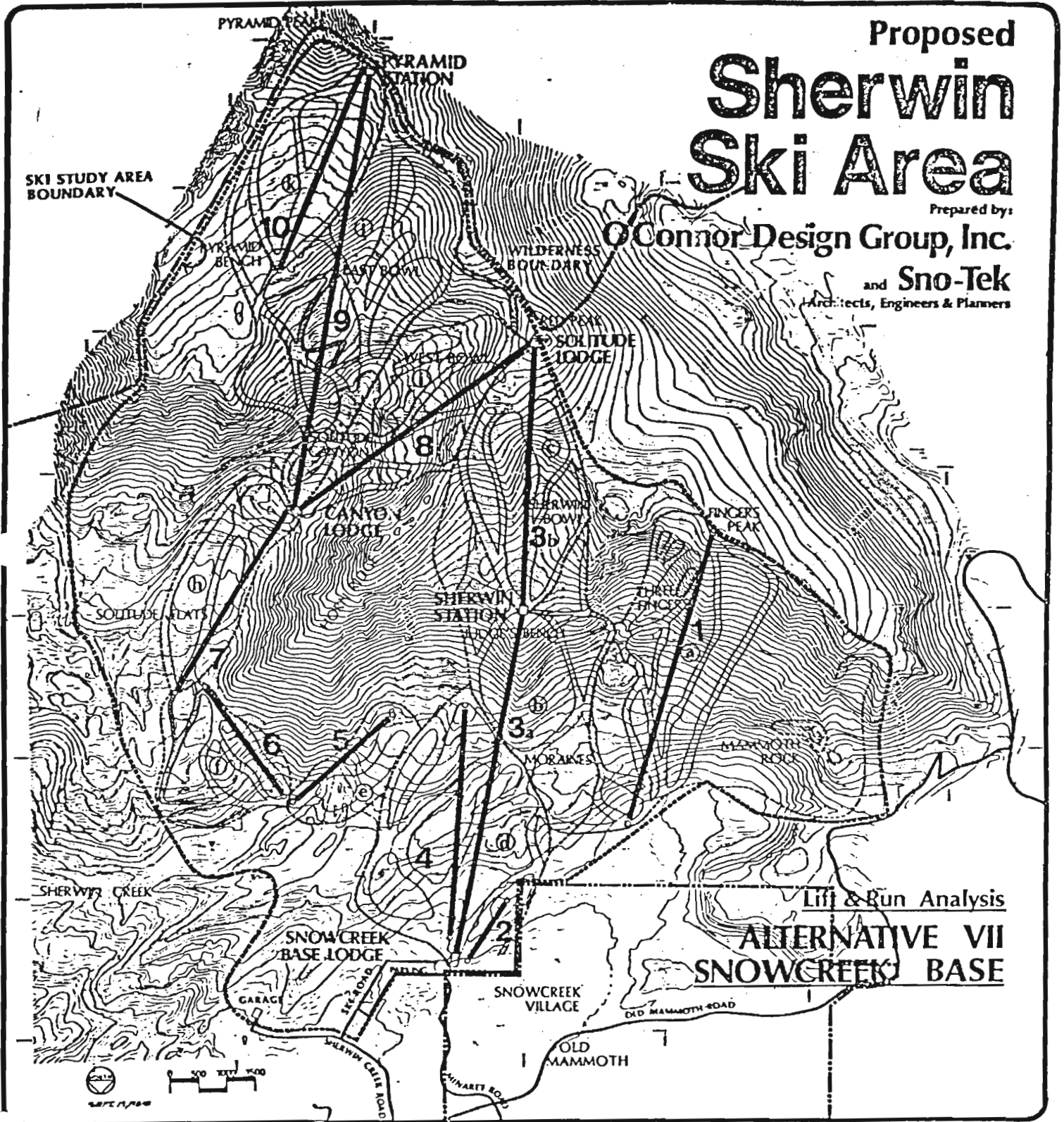


TABLE 21. Evaluation of Impacting Actions Alternative VII.  
 Snowcreek Base, eleven lifts with a total capacity of  
 9,795 and an operating season varying from 87-175  
 days (148 ave.).

POD	Assoc. Lifts	Total POD Acres Terrain Area	% Distur- bance (1)	% Revege- tation	Environmental Sensitivity	Sphere of Influence				Time Span			Mitigative	Unavoid- able	Irrever- sible (2)	Enhancement Possible		
						Local Area (Micro)		Area of Interest (Meso)		Counties - State (Macro)		Short Term					Mid Term	Long Term
						Primary	Secondary	Primary	Secondary	Primary	Secondary	0-5 yrs.	5-25 yrs.	50-100 yrs.				
a.		419/135	5	2	Medium	Moderate Negative	Moderate Negative	Low Negative	Low Negative	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	Yes-Minor
b.		241/49	40	6	Medium	Moderate Negative	Low Negative	Low Negative	Low Negative	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	Yes-Minor
c.		153/55	1	0	Medium	Moderate Negative	Low Negative	None Negative	None Negative	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	No
d.		92/38	100	50	Medium	High Negative	Moderate Negative	Low Negative	Low Negative	None	None	Moderate Negative	Moderate Negative	Low Negative	Partially	Yes	Yes	Yes-Minor
e.		33/17	75	75	Medium	High Negative	Moderate Negative	Low Negative	Low Negative	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	Yes-Minor
f.		100/34	20	10	Medium	High Negative	Moderate Negative	Low Negative	Low Negative	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	Yes-Minor
h.		106/32	40	40	High	High Negative	Moderate Negative	Moderate Negative	Low Negative	Low Negative	None	High Negative	Moderate Negative	Low Negative	Partially	Yes	Yes	No
i.		151/426	30	15	High	High Negative	Moderate Negative	Moderate Negative	Low Negative	Low Negative	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	No
j.		302/95	30	15	High	Moderate Negative	Low Negative	None Negative	None Negative	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	No
		116/26 1,714/522	5	0	High	Moderate Negative	Low Negative	None	None	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	No
1					Medium	Moderate Negative	Moderate Negative	Low Negative	Low Negative	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	No
2					Medium	Moderate Negative	Moderate Negative	Low Negative	Low Negative	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	Yes-Minor
3a					Medium	Moderate Negative	Moderate Negative	Low Negative	Low Negative	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	No
3b					High	Moderate Negative	Low Negative	None	None	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	No
4					Medium	Moderate Negative	Moderate Negative	Low Negative	Low Negative	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	No
5					Medium	Moderate Negative	Moderate Negative	Low Negative	Low Negative	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	No
6					Medium	Moderate Negative	Moderate Negative	Low Negative	Low Negative	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	No
7					Medium	Moderate Negative	Moderate Negative	Low Negative	Low Negative	None	None	Moderate Negative	Low Negative	Low Negative	Partially	Yes	Yes	No
8					High	Moderate Negative	Moderate Negative	Low Negative	Low Negative	None	None	Moderate Negative	Moderate Negative	Low Negative	Not Likely	Yes	Yes	No
9					High	Moderate Negative	Moderate Negative	Low Negative	Low Negative	None	None	Moderate Negative	Moderate Negative	Low Negative	Not Likely	Yes	Yes	No
10					High	Moderate Negative	Moderate Negative	Low Negative	Low Negative	None	None	Moderate Negative	Moderate Negative	Low Negative	Not Likely	Yes	Yes	No

(1) Slight variations might occur in % disturbance and % revegetation for the different alternatives.

In evaluating the various alternatives, Table 22, several were noted to have similar characteristics, for example: the habitat types likely to be disturbed were similar for Alternatives II, III, V, VI, and VII; almost all of the alternatives disturbed soils of moderate to high erosion potential and low fertility; and all of the alternatives exhibited both short and long term likely impacts.

Some of the alternatives had noticeable differences: Alternative IV was high in disturbances to coniferous habitat and low in brush habitat, while Alternative I was high in affecting brush habitat.

Lift capacity seemed to be related to area of surface and drainage disturbance, revegetation, potential for disruption in migration routes, and people-deer confrontations. Several alternatives (IV, V, and VI) did not lend to modification in ski operations for reducing conflicts with staging and migrating deer because of the Motocross Base of operations. On the other hand, ski operations of Alternatives I, II, III, and VII could be modified to accommodate deer migration and use of the staging area.

Even with application of all recommended mitigative actions for each alternative, there would likely be a negative impact to wildlife sustained.

Assuming application of maximum mitigative action as presented for each alternative, the relative impacts on the wildlife resource by the various alternatives would be:

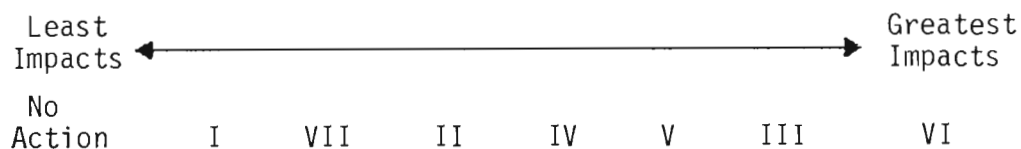


TABLE 22. Evaluation of alternatives, assuming application of recommended mitigation.

	ALTERNATIVES							
	No Action	I	II	III	IV	V	VI	VII
Lift Capacity	None	4,885	9,559	14,511	4,002	10,159	14,326	8,000
Surface Disturbance (Acres)	None	88	143	214	74	132	201	175
Revegetation (Acres)	None	52	83	133	57	83	141	95
Not Revegetated (Acres)	None	36	60	81	17	49	60	80
Drainage and Soils Disturbances	None	Low	Medium	High	Low	Low	High	Medium
Type of Impacts	Long Term	Short/Long	Short/Long	Short/Long	Short/Long	Short/Long	Short/Long	Short/Long
Migration Routes Disturbance	Low	30%	80%	90%	50%	80%	100%	80%
Staging Area Conflicts	High <sup>1</sup>	Low	Low	Low	High	High	High	Low
Area Use Conflicts	High <sup>2</sup>	Low	Low	Low	High	High	High	Low
Deer-People Confrontation	High	Low	Low	High	High	High	High	Low
Ski Operations Modification	None	Yes	Yes	Yes	No	No	No	Yes

<sup>1</sup>Assuming Motocross activities are same as currently exists or increase in the future.

<sup>2</sup>Assuming Motocross activities and livestock grazing are same as currently exists.



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