



United States
Department of Agriculture
Forest Service

Pacific Northwest Region
March 2004

Colville National Forest
Newport Ranger District
Stevens County, Washington

49 Degrees North Mountain Resort Revised Master Development Plan

Summary of the Final Environmental Impact Statement



49°
North

Chewelah Peak
Mountain Resort

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49 DEGREES NORTH MOUNTAIN RESORT
REVISED MASTER DEVELOPMENT PLAN
 SUMMARY OF THE
FINAL ENVIRONMENTAL IMPACT STATEMENT

Introduction

49 Degrees North Mountain Resort (49 Degrees North) is proposing to expand its use of National Forest System lands (NFS lands) in northeastern Washington. This proposal is part of a revised 49 Degrees North Master Plan which was submitted to the Colville National Forest (CNF) in 2000. The Final Environmental Impact Statement (FEIS) discloses and evaluates the potential environmental effects of implementing the Master Plan proposed and an alternative. This Summary focuses on a description of the alternatives, and briefly summarizes the effects.

49 Degrees North is located in the southern Selkirk Mountains of northeast Washington. It is approximately 10 miles east of Chewelah, Washington and is 50 miles north of Spokane, Washington (see **Map S-1**). The existing 1,220-acre ski area operates on approximately 900 acres of National Forest System lands administered by the Colville National Forest, and 320 acres of adjacent private land owned by Chewelah Basin Ski Corp., the owner of the resort. The Chewelah Basin Ski Corp. operates the resort under a USDA Forest Service Special Use Permit. 49 Degrees North Mountain Resort is primarily an alpine ski area, with limited summer operations. **Table S-1** summarizes the existing facilities, and **Map S-2** displays the existing resort.

The entire resort area is within Stevens County, Washington. The legal description for this project area is Sections 1, 2, 11 and 12 of Township 32 North, Range 41 East; and Sections 6, 7 and 8 of Township 32 North, Range 42 East, Willamette Meridian.

Table S-1 Summary of the Existing Facilities

Special Use Permit Area Size	900 acres
Ski Lifts	
Number of lifts	5
Ski Terrain	
Total acres of cleared ski runs	340 acres
Total acres of gladed ski areas	200 acres
Total acres in ski terrain	540 acres
Other Recreation Facilities	
Miles of Nordic trails	12 miles
Support Facilities	
Number of lodges	1
Size of the Main Lodge	21,000 sq. ft.
Acres of parking	11 acres
Water pipelines	10,000 feet
Electrical distribution lines	5,000 feet

The north half of Township 32 North, Range 42 East, Section 7 is owned by the Chewelah Basin Ski Corporation. Washington State land (Dept. of Natural Resources) is located just north of the resort in Township 32 North, Range 42 East Section 6, and Township 33 North, Range 41 East Section 36. The Association of Washington School Principals leases 20 acres for the Chewelah Peak Learning Center, the Flowery Trail Community Association leases 262 acres for a 101-lot residential subdivision, and the Chewelah Basin Ski Corp leases 87 acres. Some of the alternatives propose activities in these adjacent areas.

Starting in 2001, the Federal Highways Administration began a project to reconstruct the Flowery Trail Road, which accesses the resort from both east and west. The Flowery Trail Road project will change the resort entrance and

increase the parking capacity. This project is scheduled for completion in 2006.

Purpose and Need

The Forest requires a Master Development Plan (MDP) for all resorts on NFS lands, to guide any future expansions or changes. 49 Degrees North is operating under a 1977 Master Development Plan which does not reflect the objectives of the current owner. The 1988 Colville National Forest Land and Resources Management Plan designated an area suitable for downhill skiing which is larger than the current resort. In 2000, Chewelah Basin Ski Corp. submitted a revised Master Development Plan (MDP) which utilizes the entire area designated for downhill skiing in the Forest Plan.

Increases in the number of alpine skiers at the resort provides the underlying need for resort expansion. The proponent and the Forest identified the following problems and opportunities which a revised MDP must address.

The MDP must address the need to **balance the Comfortable Carrying Capacity** of ski terrain, lifts, parking, lodge space and other facilities. **Table S-2** displays the existing Comfortable Carrying Capacity (CCC) for various components of the resort. Right now the CCC of the lifts and lodge are far below the CCC for the ski terrain, parking, etc. The lodge becomes uncomfortably crowded, and the lift lines become long, with lift waits exceeding 15 minutes, when the resort has more than about 1,500 visitors per day. The resort exceeds 1,000 visitors per day about ¼ of the days it is open for operations, and often exceeds 1,500 visitors per day on weekends. The largest skier attendance days exceed 3,000. Therefore, the MDP needs to address improvements in the lodge and chairlifts, and must provide a balance of CCC for the critical resort elements (lifts, lodge, parking, water, wastewater).

The MDP must address the **need for the associated infrastructure** of lifts, lodges, maintenance areas, parking, water, sewage, power and related skier services. Expansion of some elements would require expansion of the support

elements such as maintenance areas, parking, water, wastewater treatment, power, etc. In particular, the need to move the maintenance area and fuel depot to a location farther from streams was identified as a need by the Forest. Therefore, the MDP must provide the necessary infrastructure to support the proposed expansion.

The MDP must address the **need for additional ski terrain** to respond to increased demand, to enhance the skiing experience and to compete effectively in the local ski market. Four specific needs were identified that need to be addressed in the MDP -- the amount of advanced and intermediate terrain is generally lacking; traffic flow in the lower silver ridge area is poor, especially when people are leaving at the end of the day; use is not balanced across the resort (additional runs in the west basin would improve overall skier distribution); and an additional lift would require additional terrain to service that lift.

Table S-2 Comfortable Carrying Capacity (CCC) for the Existing Resort

Element	Number of Visitors
Ski terrain	3,300
Chairlifts	2,000
Lodge	1,800
Parking	2,700
Water supply	2,700
Wastewater treatment	2,000

The MDP must address the **need to decrease crowding, reduce skier congestion and conflicts** thus increasing safe operating conditions. Currently 3 of the chair lifts load in the same general area – just west of the lodge. A new lift would need to be located so as to avoid compounding congestion in this area. Also, some additional ski terrain is needed to relieve conflicts in the lower Silver Ridge area. Congestion is experienced in the lodge and at the skier drop-off area in front of the lodge. The MDP should address these problem areas.

The MDP must address the need to **maintain the economic viability** of 49 Degrees North to ensure its continued operation. Ultimately, it is in the best interest of the Forest Service to continue to

have a successful ski area on Chewelah Peak. The resulting MDP must be economically viable.

The environmental impact statement (EIS) documents the analysis of 2 alternatives to meet this need, plus the No Action alternative which is required by law.

Issues

Seventy-six individuals, agencies and groups responded to the initial notice for this project in spring 2002. The most common comment was support for ski area expansion. Many comments discussed potential issues the writer thought should be analyzed in the FEIS – such as effects to riparian areas, habitat fragmentation, wildlife, fish, roadless areas, watersheds, water quality, etc. The interdisciplinary team used the comments to identify key issues, which were used to design alternatives. Three key issues were identified.

Recreation

Recreation is one of the multiple uses provided by National Forest System (NFS) lands. Significant increases in use rates have occurred at 49 Degrees North and these increases are projected to continue. The area already provides some Nordic skiing, and according to the proponent some people have indicated a desire to improve the facilities for Nordic skiing and snowshoeing. The presence of the Chewelah Learning Center nearby may also increase the demand for other winter recreation opportunities, as well as summer hiking, mountain biking and horseback riding. Most comments suggested the need for expansion to meet existing and future needs. Unresolved conflicts exist between the need for additional recreation facilities and the desire to protect other resources. Ski runs and other facilities cannot be constructed without removing trees, grading slopes, installing culverts, etc. – potentially creating impacts to riparian areas and wildlife.

Wildlife

Wildlife habitat is another of the multiple uses provided by NFS lands. Comments included concerns for wildlife, wildlife habitat fragmentation, Threatened, Endangered and Sensitive species (TES species), biodiversity and wildlife corridors, old growth habitats, and old growth dependent species. Unresolved conflicts exist between wildlife habitat and the need for additional recreation facilities. New recreation opportunities cannot be created without tree removal for ski runs, tree skiing and other facilities. Some of this tree removal is within existing mature and old growth forests, and within lynx habitat.

Water and Fish

Water resources and fish habitat are also multiple uses provided by NFS lands. Comments included concerns for water quality, riparian areas, streams and fisheries. Unresolved conflicts exist between the water/fish resources and the need for additional recreation facilities. New recreation opportunities cannot be created without tree removal for ski runs, and facilities. New recreation opportunities also cannot be created without grading and culvert installations for stream crossings. All culverts, as well as some proposed tree removal and grading, are near streams. The ID team expressed concern about on-going activities along Little Calispell Creek near resort base area – fuel storage, vehicle maintenance, parking, etc., which could degrade water quality.

Alternatives

Three alternatives were developed. The No Action alternative is required by law, and is used as a baseline against which other alternatives are measured.

Alternative A – No Action

Under the No Action alternative current management plans would continue to guide

Insert map S-2 here
Existing Facilities

management of the project area. The No Action Alternative would retain the 1977 Master Development Plan – no additions to the resort would be approved. No additional lifts would be installed, no new ski terrain developed. The overall size of the Main Lodge would remain the same, though changes in the interior and use of space could occur. The existing Nordic trail would remain ‘as is’ with no Nordic Lodge or ice rink. Regular maintenance and upkeep activities would continue, which are permitted under the current Master Development Plan. These activities include things like:

- Mowing, weeding, removal of trees invading cleared runs, removal of hazard trees, and other vegetation management activities within the permit area.
- Continued monitoring and treatment of weed infestations. This treatment is included in the Colville National Forest Environmental Assessment of Integrated Noxious Weed Treatment (1998).
- Maintenance of the roads used by the Resort within the permit area.
- Maintenance and replacement of buildings and facilities, as needed.

Alternatives B and C are very similar, therefore they will be described together. Alternatives B and C differ with regard to the location and amount of cleared ski runs, the location and amount of gladed ski terrain, and the location and amount of Nordic ski trails. Alternative C is the selected alternative.

Alternatives B and C

Both alternatives B and C would adopt a new Master Development Plan encompassing 2,000 acres of National Forest System lands. Both alternatives would increase the Comfortable Carrying Capacity of the resort from about 1,500-2,000 visitors per day to about 4,000 visitors per day.

This Master Development Plan would include the following activities. **Maps S-3, S-4 and S-5** show location of these activities.

Ski Lifts: Both alternatives would construct one new ski lift from the East Basin to near the summit. The lift would be about 4,600 feet long. About 70% of the lift would be on NFS lands, and the remaining 30% would be on private land owned by the resort. Roads would not be constructed to install the towers.

Cleared Ski Runs: Both alternatives develop the same cleared ski terrain in the West Basin and Lower Silver Ridge areas. Both alternatives would grade about 100 acres of cleared runs to remove hazards and provide a safe transition. These cleared ski runs would require the installation of 2 new culverts, and the replacement of 3 existing culverts. The alternatives differ with regard to the amount and location of cleared runs in the East Basin (see **Maps S-3 and S-4, and Table S-3**).

Gladed Ski Terrain: Both alternatives develop the same gladed ski terrain in the West Basin and Lower Silver Ridge areas. The alternatives differ with regard to the amount and location of gladed runs in the East Basin (see **Maps S-3 and S-4, and Table S-3**).

There is a stand of old growth trees in the upper East Basin. Alternative B would carve several cleared runs through this stand, essentially removing it as habitat for old growth dependent species. Alternative C thins most of the stand and modifies the thinning prescription, thereby preserving many aspects of its old growth features.

Nordic Ski Center, Ice Rink and Nordic Trails: Both alternatives propose a Nordic Center, ice rink and expand the system of Nordic trails. The Nordic Center would provide food service, restrooms and lockers for both Nordic skiers and skaters. In the summer the ice rink area and Nordic Center could be used as a small tent camping area. The alternatives differ with regard to the amount and location of some of the Nordic Trails. **Maps S-3 and S-4** show the alternatives. **Table S-1** shows the difference in mileage of Nordic trails. In both alternatives the Nordic Trail eventually connects to the existing Chewelah

Insert map S-3 here
Alt. B overview

Mountain Trail so that the resultant trail system is about 17-20 miles long. The first 2 miles of Forest Road 4300474 would convert to a county access road and would no longer be used for Nordic skiing.

In Section 8 the Nordic trail crosses an area of old growth wildlife habitat designated as a "Pine Marten Area". Alternative B would build about 2.3 miles of trail through this area, and the trail would be about 50-feet wide. In Alternative C the trail is higher on the slope to reduce mileage in the Pine Marten Area to about 0.5 miles, Alternative C also reduces the width of the trail to 25-feet. Both alternatives include special mitigation to minimize the impact of this trail to old-growth dependent species.

South of the Nordic center, the Nordic trails differ somewhat. Alternative B would build slightly more trail which would require 8 culverts to cross streams in this area, while the trail in Alternative C is slightly higher on the slope to reduce the number of streams crossings. Alternative C would install only 5 culverts, thereby reducing the impact to streams and fish.

Flowers Trail Community Subdivision Trail: Both alternatives would allow use of an existing primitive road from the base of the ski area to the Flowers Trail Community Subdivision for Nordic skiing and snowmobiling, hiking, biking and horseback riding. This road also passes near the Chewelah Peak Learning Center. Most of this road is located on land managed by Washington State Dept. of Natural Resources, and is under permit to the Chewelah Basin Ski Corp., and Flowers Trail Community Association. A culvert or bridge would be installed on Tenmile Creek for this trail.

Lodge Space: Both alternatives would expand the main lodge from about 21,000 square feet to about 57,000 square feet, and construct Mid-Mountain Lodge (ski access) on private land in Section 7. These are in addition to the Nordic Center described above.

Parking: Both alternatives would construct an additional 4 acres of parking. This additional parking is near the Nordic Center and not located near streams.

Water Systems, Wastewater System, Extend the Underground Electrical Utilities: Both alternatives would install a new water system. This system would consist of a new intake on Tenmile Creek slightly upstream from the existing intake. A pipe would carry water to a 50,000 to 70,000 gallon storage tank located between Tenmile Creek and Little Calispell Creek. About 15,000 feet of underground pipe would be installed to connect the water tank and an existing well in Section 7 to the existing water system, the Nordic Center, and the Mid-Mountain Lodge. Two permanent pipes were installed across Little Calispell Creek as part of the Flowers Trail Road reconstruction project, therefore these proposed new pipes can be installed without impacting the streams. Both alternatives would move the water system chlorinator from its current location adjacent to Little Calispell Creek into the Main Lodge.

The existing wastewater treatment system would be replaced. Both alternatives identify a 4 acre area suitable for a new treatment facility – it is flat enough, it is located below the Main Lodge, and it is not located adjacent to streams. Additional analysis would have to be done before a specific treatment system can be approved.

Both alternatives would install about 11,000 feet of new underground electric utility lines. These lines would come from the summit and extend down the ridge to the Mid-Mountain Lodge supplying power to the chairlift and the lodge. This utility line could be used in the future to supply power to other developments in Section 7.

Jurisdiction of Forest Road 4300474: With this decision, the Forest Service would offer to transfer jurisdiction of one mile of Forest Road 4300474 to Stevens County. This road segment begins at Flowers Trail Road and extends south to the private land in Section 7. Stevens County is

Insert map S-4 here
Alt C overview

Insert map S-5 here
Base area alternatives B and C

not obligated to accept jurisdiction for this road, and may require road improvements as a condition of acceptance. This decision does not obligate the Forest Service to improve the road so that Stevens County would accept jurisdiction. Improvements would utilize Best Management Practices and other mitigation similar to those listed in the FEIS would be required.

Reclamation of Little Calispell Creek: Both alternatives move the vehicle and equipment maintenance function from the building it currently occupies next to Little Calispell Creek, and builds a new maintenance shop away from streams. Both alternatives relocate the fuel station and the chlorinator from their current locations near Little Calispell Creek to new locations farther from streams. The alternatives differ with regard to further reclamation of the Little Calispell Creek riparian area near the Main Lodge. Alternative B would perform no further reclamation or improvements of the streams. Alternative C would remove most of the buildings within the riparian area along Little Calispell Creek. In addition to vehicle maintenance, the fuel station, and the chlorinator, Alternative C would remove the race building, the Special Ops building, and the Shreave building. This alternative would then restore vegetation on about 2 acres of riparian area adjacent to the Main Lodge.

Little Calispell Creek is a fish bearing stream where it passes near the Main Lodge. When

the resort was built in the early 1970's little was done to protect the stream or the fish. The lodge was built next to the creek, and several support facilities were built next to the creek as well -- vehicle maintenance, fuel storage and the chlorinator. All of these support facilities pose a threat to water quality and fish from the risk of an inadvertent spill of toxic chemicals. Alternative B removes the most serious threats -- vehicle maintenance, fuel storage and the chlorinator. Alternative C goes further removing most of the support buildings and actively restoring the vegetation along the stream. Alternative C also includes mitigation to change the snow plowing regime so that the risk of petrochemicals and other toxic substances entering the streams would be reduced, and proposes to monitor for these substances.

Both alternatives include mitigation to prevent the establishment of noxious weeds through prompt and effective revegetation. Our experience on this ski area is that revegetation of disturbed lands is not typically a problem. This alternative also includes Best Management Practices to prevent impacts to water quality, stream conditions, and fisheries. Mitigation is included to protect TES species and heritage sites should these be encountered unexpectedly during project implementation.

Table S-3. Summary of the Alternatives

Actions	Alternative A (Existing Condition)	Alternative B	Alternative C
Special Use Permit Area Size	900 acres	2,000 acres	2,000 acres
Ski Lifts			
Number of lifts	5	6	6
Comfortable Carrying Capacity	2,000	4,000	4,000
Ski Terrain			
Total acres of cleared ski runs	340 acres	650 acres	570 acres
Total acres of gladed ski areas	200 acres	470 acres	510 acres
Total acres in ski terrain, both cleared and gladed	540 acres	1,120 acres	1,080 acres
Other Recreation Facilities			
Nordic Facilities			
Miles of Nordic trails	12 miles	20 miles	17 miles
Nordic Center	No	Yes	Yes
Ice Rink	No	Yes	Yes

Actions	Alternative A (Existing Condition)	Alternative B	Alternative C
Support Facilities			
Main Lodge area			
Size of the main lodge	21,000 sq. ft.	57,000 sq. ft.	57,000 sq. ft.
Acres of parking	11 acres	15 acres	15 acres
Mid-Mountain Lodge	No	Yes	Yes
New Wastewater treatment system	No	Yes	Yes
Water pipelines	10,000 feet	25,000 feet	25,000 feet
Electrical distribution lines	5,000 feet	16,000 feet	16,000 feet

Summary of the Effects of the Alternatives on the Issues

Recreation

Under the **Alternative A** – the No Action Alternative, existing recreation activities would remain unchanged. On weekends crowding would continue to be a problem in the Lodge, at the bottom of the runs near the lift lines, and on Silver Ridge. Some skiers would experience less satisfaction with skiing at this resort, and go elsewhere. The No Action Alternative may result in a decline in skier use of 49 Degrees North. Older facilities and fewer services than competitors could cause an economic decline and lead to the eventual loss of 49 Degrees North as a public ski area.

Alternatives B and C both provide a similar balance of Comfortable Carrying Capacity for recreation. Both alternatives alleviate crowding at the lodge, near the lift lines, and on Silver Ridge. Both alternatives provide a wider variety of winter recreation experiences – Nordic skiing and ice skating. The cumulative effect of the Learning Center and expansion of ski area would be more people recreating than with either project separately. The increase in number of people recreating would not affect the quality of recreation, as there would be sufficient capacity to accommodate demands from both the ski area and Learning Center. Both Action Alternatives would allow 49 Degrees North to compete effectively in

the local ski market and provide for continued increases in skier numbers. These factors should ensure the continued economic viability of the resort and its contribution to the local economy and recreation resource.

Alternative B provides slightly more new ski terrain, and more cleared runs than Alternative C. **Tables S-1 and S-2** highlight the differences in recreation experience.

Alternative B also provides slightly more miles of Nordic ski trails. Currently the area has about 12 miles of Nordic trail. Upon completion of Alternative B, the Chewelah Peak area would have about 20 miles of Nordic trail. With Alternative B, about 1 mile of the proposed Nordic trail has 16 switchbacks to gain 800 feet elevation on a ridge in Section 8. The switchbacks are tight with short spans between turns. This portion of the Nordic trail system would be difficult to ascend or descend requiring advanced cross-country skiing skills to negotiate. Advanced skiers would likely consider the difficult terrain an improved recreational opportunity, whereas a beginning or intermediate skier may not enjoy the challenge. **Alternative C** utilizes a different trail alignment -- the trail would have a long linear configuration with four switchbacks. This alignment would eliminate the difficult skiing section of Alternative B and allow skiers with less skill to enjoy the trail.

Table S-4: Effects on Recreation

	Alternative A (Current Condition)	Alternative B	Alternative C

Ski lift Comfortable Carrying Capacity	2,000	4,000	4,000
Total acreage of ski runs and tree skiing	540 acres	1,120 acres	1,080 acres
Ski terrain Comfortable Carrying Capacity	3,300	5,500	5,100
Comfortable Carrying Capacity of the lodge	1,800	4,000	4,000
Parking	3,000	3,900	3,900

Wildlife

The wildlife analysis considered the effects of the alternatives on Threatened and Endangered Species (woodland caribou, bald eagle, gray wolf, grizzly bear and Canada lynx), Sensitive Species (Pacific fisher, wolverine, Townsends big-eared bat, northern leopard frog, great gray owl, and peregrine falcon), Management Indicator Species (old-growth dependent species, primary excavators, large raptors, great gray heron, grouse, deer and elk, waterfowl, beaver, and northern bog lemmings), and migratory birds.

With the selection of **Alternative A**, there would be no new impacts to wildlife and their habitat. The current wildlife conditions and trends would remain as they are now.

For most wildlife species, the difference between **Alternative B and Alternative C** is negligible. The primary effects to wildlife habitats are from clearing trees to develop cleared ski runs and trails. This clearing removes one kind of habitat (forested) and replaces it with another kind of habitat (open). Ski runs with nearby patches of forest cover are attractive foraging areas for deer, elk, and moose during summer and fall when levels of human activity are low. Increased mountain bike use and other activities would have the potential to displace animals from habitat in close proximity to human activities. If timing and levels of human use were relatively consistent, some individual animals would become accustomed to human presence and use habitat on the ski area even if use levels were high. Animals that do not tolerate relatively high levels of human use would be displaced to habitats farther from the ski area.

As part of the Endangered Species Act, a Biological Assessment (BA) was prepared for this

project and forwarded to the U.S. Fish and Wildlife Service. The findings are summarized in table S-3.

Both action alternatives meet the Forest Plan standards and guidelines for all Management Indicator Species, including old-growth dependent species.

The effects of the alternatives differ slightly with regard to habitats for old-growth dependent species and Canada lynx.

Old-growth Dependent Species: The table shows the amount of old-growth habitat removed (cleared) and altered (thinned). Currently the area has about 349 acres of mature and old-growth habitats in a continuous block on National Forest System lands in the East Basin (114 acres old-growth) and east of the ski area in Section 8 (235 acres mature forest). Alternative B would remove so much of the 114-acre old-growth stand in the East Basin that it would cease to be useful as habitat. In addition, Alternative B would clear about 14 acres in the mature stands in Section 8 for Nordic ski trails. Alternative C would thin most of the 114-acres old-growth stand in the East Basin, and clear less than 2 acres of the mature stand in Section 8. Both alternatives would meet the Forest Plan with regard to old-growth dependent species, but Alternative C would have less impact.

Canada Lynx: The ski area is located within the Chewelah Lynx Analysis Unit, a habitat area designated cooperatively by the Forest Service, U.S. Fish and Wildlife Service, and Washington State Dept. of Fish and Wildlife. The Lynx

Table S-5 Effects on Wildlife Habitats

		Alternative A	Alternative B	Alternative C
Forest openings created for ski runs and lift lines		340 acres	650 acres	570 acres
Changes to Mature and Old-growth Wildlife Habitats				
Clearing trees in old growth and mature forests for ski runs		0 acres	60 acres	5 acres
Nordic trails		0 acres	14 acres	1.5 acres
Thinning in old growth habitat for gladed skiing		0 acres	40 acres	100 acres
Summary of findings with regard to Threatened, Endangered and Sensitive Species				
T & E species	woodland caribou	<i>No effect</i>		
	bald eagle	<i>No effect</i>		
	gray wolf	For all these species, the alternative “ <i>May affect but not likely to adversely affect</i> ” the species or its habitats.		
	grizzly bear			
	Canada lynx	<i>Adversely affect</i>		
Sensitive species	Pacific fisher	For all these species, the project <i>may impact individuals or habitat, but would not be likely to contribute to a trend toward federal listing or cause loss of viability to the population or species.</i>		
	wolverine			
	Townsend's big-eared bat			
	northern leopard frog			
	great gray owl			
	peregrine falcon	The project <i>would not adversely affect peregrine falcons</i> and could improve foraging habitat when prey species adapt to the forest/open-land interface.		

Conservation Assessment and Strategy provides guidelines for activities in lynx habitat –

- At least 10% of the Lynx Analysis Unit should be denning habitat. Maintain denning habitat in patches generally larger than 5 acres. Right now about 19% of the Chewelah LAU is denning habitat.
- No more than 30% of the Lynx Analysis Unit should be unsuitable for lynx. Right now about 17% of the Chewelah LAU is unsuitable.

Construction of ski runs and Nordic trails would convert some foraging habitat into areas unsuitable for lynx. Alternative B would convert about 223 acres of foraging habitat to unsuitable lynx habitat. Alternative C would convert about 192 acres. Both Alternatives reduce the amount of foraging habitat from about 17,900 acres to about 17,500 acres (about 80% of the LAU). Both alternatives increase the amount of unsuitable habitat from about 3,700 acres to about 3,800 acres (about 18% of the LAU). Although unsuitable habitat is increased, the amount in the LAU does not exceed the 30%.

Lynx use cold areas with mature forest overstory for denning. Both alternatives would reduce denning habitat from 19% to 18%. Alternative B would affect a few more acres than Alternative C due to the longer length of the Nordic trails (10 miles vs. 7 miles), and the additional width of the trails (50 feet vs. 25 feet). With both Action Alternatives, denning habitat would remain above 10% of the LAU.

On a regional level, Alternatives B and C would have a small incremental effect on connectivity of habitat to the north and south of the ski area. Currently, the Cottonwood Divide Road, used in summer and fall by motorized vehicles and winter by snowmobiles, may inhibit lynx movement along the Cottonwood Divide. The proposed removal of forest vegetation near the ridge extending east from Chewelah Peak and contiguous with the Cottonwood Divide and the presence of skiers may discourage, but would not prevent lynx movement.

Lynx cross ski runs and roads as long as hiding cover is available interspersed among the openings. The proposed action would fragment existing lynx foraging habitat into smaller patches.

Vegetation removal with the Action Alternatives would be a relatively minor effect since cover is still well distributed throughout the ski area and abundant in adjacent areas. The pattern and amount of cover that would result with the Action Alternatives would have a negligible effect on connectivity within the LAU.

Although the proposed action would alter habitat characteristics, patches of intact habitat transected by ski runs would be accessible to lynx. Locally and regionally, the Action Alternatives would have minor adverse effects on habitat connectivity for lynx and other forest carnivores.

Based on analysis of effects presented in this evaluation Alternatives B and C would “adversely affect” Canada lynx. This determination was made because:

- Both Alternative B and C would reduce foraging habitat in the Chewelah LAU by about 2% and denning habitat by about 1%. These habitat reductions are small and continue to meet the recommendations in the Lynx Conservation Assessment and Strategy.
- The Action Alternatives would not reduce denning habitat in the LAU to below the 10% threshold recommended by the Lynx Conservation Assessment and Strategy.
- The Action Alternatives would not prevent lynx movement regionally or prevent access to habitat adjacent to the ski area.
- There is no documented use by lynx of the ski area or area proposed for expansion.
- None of the alternatives increase road density.
- However, both alternatives would render a small amount of lynx habitat as unsuitable for the life of the ski area permit.

Water and Fish

Two named streams cross the project area – Tenmile Creek on the north edge of the resort, and Little Calispell Creek in the center. Both these streams have fish. In addition, there are numerous unnamed intermittent streams. The maps show the streams present. The Main Lodge, part of the parking areas, the vehicle maintenance shop, fuel storage, and chlorinator are located immediately adjacent to Little Calispell Creek.

There are no bull trout (threatened) or interior redband trout (sensitive) in or near the project area. Therefore, none of the alternatives would effect these species. Westslope cutthroat trout (sensitive) occurs in Tenmile Creek above an impassable culvert on Flowery Trail Road, on the northern border of the ski area.

None of the alternatives are expected to change the streamflow or the water yield.

Activities may increase sediment by removing vegetation and disturbing soil near streams. Culvert installation is one of the activities most likely to introduce sediments into streams – both because it removes vegetation and the activity is always located in streams. The following table summarizes the culvert installations and replacements proposed by the Alternatives. Most of the culverts would be installed on the Nordic trails, and most are located on intermittent streams that don’t have fish. The Best Management Practices (BMPs) such as sediment traps, minimize the amount of sediment released when the culvert is installed, and BMPs requiring prompt revegetation stops sediment soon after the culvert is installed. **Alternatives B and C** would grade about 2 acres of ski runs within the riparian zone near Little Calispell Creek. Altogether, about 3 acres within the riparian areas would be impacted by the proposed actions. **Alternative A** would not increase impacts within the riparian area.

Alternative A would retain the Main Lodge area as it is – the fuel storage, maintenance shop, chlorinator all right next to Little Calispell Creek. These would continue to be potential sources of sediment, fuel, and other contaminants to the creek. A total of 13 acres of parking lots, buildings, ski runs, and other facilities would continue to occupy the riparian zones.

In order to improve water quality and fish habitat, **Alternatives B and C** reduce some of the existing impacts in the riparian zones. Alternatives B and C would remove the chlorinator, fuel station and vehicle maintenance from their current location adjacent to Little Calispell Creek.

Alternative C goes farther to restore the riparian area along Little Calispell Creek. Alternative C would also remove three more small buildings located within the riparian area, and remove a portion of the existing parking area adjacent to the Main Lodge. Alternative C would restore the riparian vegetation in this area next to the main lodge (2 acres) reshaping and revegetating the disturbed area next to the Main Lodge.

Alternative C would also change the snow plowing regime to prevent plowed snow and the toxic chemicals (e.g., gasoline, oil, deicers) in that snow from reaching the stream.

Alternative B would increase disturbance in riparian areas to 16 acres as a result of expansion of facilities and ski runs. This alternative would not comply with INFISH and the Forest Plan because it would allow activities and facilities

within the RHCA of Little Calispell Creek to continue to have an adverse effect on water quality and fish and fish habitat downstream.

Alternative C would result in an increase of the disturbed conditions within the riparian area by about 1 acre – from 13 acres to 14 acres. This alternative, however, would eliminate almost all of the snow piling, remove potentially polluting facilities and rehabilitate 2 acres within the RHCA of Little Calispell Creek. The overall effect on water quality and fish and fish habitat downstream should be much less than under the current resort operations.

Table S-6 Effects on Water and Fish

	Alternative A (Current Condition)	Alternative B	Alternative C
Number of new culverts installed or existing culverts replaced	0	13 new 3 replaced	10 new 3 replaced
Existing and new impacts to riparian areas			
Base area developments	6.1	6.1	6.1
Ski runs and Nordic trails	7.0	10.3	10.1
Total acres of impact to riparian areas	13.1	16.4	16.2
Current activities within riparian areas that would be removed	None	Vehicle maintenance, fuel station, chlorinator	Vehicle maintenance, chlorinator, fuel station, sheave room, race and special ops bldgs
Acreage of riparian area restored	0	0	2.0
Net impact in riparian zones	13.1 acres	16.4 acres	14.2 acres

Summary of the Effects of the Alternatives on Other Resources

Soil and Geology

Short-term soil erosion would occur due to 230-310 acres of clearing for ski runs under **Alternative C and B** respectively. Short-term erosion due to culvert installations and replacements would occur at 13-16 sites under Alternative C and B respectively. Short-term

effects on soil erosion and productivity would occur on 100 acres of grading for ski run construction. Long-term effects on soil productivity would occur on 11 acres due to construction of permanent features such as lodges, parking lots, ice rink, wastewater treatment facility, power lines, and pipelines.

Air Quality

The primary impact of the alternatives would be from burning slash created by clearing land.

Alternative A would have the least effect on air resources (no clearing or thinning and burning) followed by **Alternative C and Alternative B**. All alternatives would meet Forest Plan requirements for monitoring and compliance with State Air Quality Visibility Standards. Activities would maintain air quality at a level adequate for protection and use of the National Forest resources, and meet or exceed applicable Federal and State standards and regulations. All prescribed burning would be planned and conducted in accordance with all applicable State and regional smoke management plans.

Vegetation

Selection of **Alternative A**, the no action alternative, is not expected to show immediate changes in the old growth stand. Over the long-term (up to 30 years), it is expected that the old growth stand will begin the stand initiation phase. During the stand initiation phase it is likely that the largest most defective trees will be the first to fall, thus potentially affecting the stand at a pace equaling that of the action alternatives, though in a more random manner. Once the large trees begin to fall, openings will regenerate with hemlock, cedar and grand fir.

Alternative B would clear about 310 acres of forest vegetation for the construction of ski runs and trails. With this alternative, more than half of the old-growth stand (60 acres of 114 acres) would be removed and the remainder substantially altered by thinning. Due to the large number of openings, a large portion of the old growth stand would be exposed to the effects associated with stand edge, i.e., wind throw, broken trees, and solar desiccation of shade-tolerant species. In addition, a large portion of the biggest trees would have to be removed as hazards. Alternative B, if selected, would in all likelihood eliminate the old growth stand both with fragmentation and resulting stand damage from wind. Alternative B would start the stand initiation phase.

Alternative C would clear forest vegetation on about 257 acres for ski runs and trails. Five of these acres would be in the 114-acre old growth stand in the East Basin. This alternative would

have 150-foot areas thinned on each side of the groomed run (11 acres) to remove trees smaller than 17 inches in diameter and large woody debris. The remaining 100 acres of old growth would be lightly thinned and have about 75% of trees smaller than 7 inches in diameter and about 10% of large woody debris removed. Like Alternative B, the pristine character of old growth would be altered with this alternative, but features such as the composition of large trees would not be reduced on 100 acres of the 114-acre old-growth stand. Alternative C would expose much less stand edge, and remove fewer hazard trees than Alternative B. The large tree component would be maintained on about 109 acres with this alternative. Other than the 5 acres in cleared runs, and the 11 acres with trees less than 17 inches diameter removed, the remaining portion of the old growth stand should proceed in a manner very similar to the No Action Alternative.

Both alternatives would thin about 270 to 310 acres of forest stands to create gladed skiing. Thinning would result in open stands of larger trees with 50% less large woody debris. Thinning and removal of woody debris would reduce levels of insects and disease, which are currently present in the analysis area. Thinning would also reduce wild fire risk.

Visual Quality

Visual quality objectives would be met under any of the alternatives since the ski area is almost completely hidden from view from all roads, communities and private lands in the surrounding landscape of Stevens and Pend Oreille Counties.

Heritage

The proposed action meets Forest Plan and other applicable standards because scientific, social, and historical values would be maintained. Existing resources have been inventoried, and the Forest Archeologist determined that Section 106 requirements of the National Historic Preservation Act have been met. The local American Indian tribes have been consulted.

Socioeconomics

Alternative A would not provide for the long-term viability of 49 Degrees North and could eventually result in the loss of a significant number of jobs, taxes and associated income for local businesses. **Both Action Alternatives** would increase revenues, taxes, employment and visitor expenditures in local businesses.

Adverse Environmental Impacts that Cannot be Avoided

Implementation of any of the Action Alternatives would result in some adverse environmental effects. The severity of the effects would be minimized by implementation of the mitigation measures. The action alternatives would result in a temporary effect on **air quality** due to slash burning. Losses of **soil productivity** are unavoidable in areas covered by permanent structures and features, such as buildings, parking lot, and lift towers. **Water Quality** would be impacted by a small, temporary increase in sediment during culvert installations. However, implementation of BMPs and other mitigation measures would reduce the potential for substantial or sustained sediment delivery to streams. **Wildlife** would be impacted by the conversion of some forested vegetation communities to herbaceous communities on ski runs.

Relationship Between Local Short-term Use and Long-term Productivity

This section discusses short-term effects (beneficial and adverse) of the alternatives and their implications for the long-term stability and productivity of the environment.

The owners of 49 Degrees North are committed to long-term management of the ski area. This use accommodates a high level of recreation visits on a relatively small portion of the Colville National Forest. Each Action Alternative continues this long-term commitment of the local environment to

a relatively high-density recreation use. Continued development and expansion creates an opportunity for a greater number of people to use the area.

The Action Alternatives would require timber harvest to create ski runs. This would increase the short-term supply of lumber. Once expansion is completed, ski area management would not emphasize timber harvest, but future timber harvest would be possible. If desirable in the future, the land could return to long-term timber production if resort use is discontinued.

Irreversible and Irretrievable Commitments of Resources

Irreversible commitments of resources refers to non-renewable resources, such as cultural resources, or to those factors which are renewable only over long time spans, such as soil productivity.

Soil loss and displacement, particularly related to road and building construction, would occur as a result of any of the Action Alternatives. Overall, there would be small soil loss due to erosion and an increase in sediment production with any of the Action Alternatives. Mitigation, would be adequate to keep impacts within acceptable limits set forth in the Forest Plan and other jurisdictions.

Ski area development would represent a long-term commitment of the area to a relatively high intensity recreational use. However, should the time come when the ski area was no longer functioning, all facilities could be dismantled and removed and the area revegetated or allowed to return to a natural state. Roads and culverts can be removed and resources rehabilitated.

Irretrievable commitment applies to losses of production, harvest, or use of renewable natural resources. Vegetation loss in mature and overstory timber would result from ski run clearing. The visual resource at the ski area itself would be irretrievably altered by the addition of lifts, ski runs, and base facilities. The conversion of forested lands to ski runs reduces the potential

timber yields from the forest by a fraction of a percent. Soil productivity would be lost on areas covered by buildings, parking areas or other features and would be reduced on graded areas.

Effects on Wetlands and Floodplains

The Action Alternatives would have a small effect on wetlands and floodplains at culvert installations for stream crossings. The wetland portion of these crossings is a very narrow zone along the waters edge (approximately 2 feet wide) and the total impact for all crossings would total approximately 0.2 acre. Floodplain conditions would be improved at culvert locations on Little Calispell Creek where existing culverts would be replaced by larger culverts sized to pass a 100-year flood event.

Effects on Prime Farm Land, Range Land, Forest Land

All alternatives are in keeping with the intent of the Secretary of Agriculture Memorandum 1827 for prime land. The proposed expansion area does not contain any prime farm lands or rangelands. "Prime" forest land does not apply to lands within the National Forest System. Under the Action Alternatives, National Forest System lands would be managed with sensitivity to the effects on adjacent lands.

Energy Requirements of Alternatives

There are no unusual energy requirements for implementing the Action Alternatives. Electricity for the ski lifts would be supplied by the existing power line system.

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