

- 5 Overland use in C3 and C8 management areas allowed except December 14 through April 14 when use will be restricted to designated routes.
- 6 West of Ditch Creek:
Overland use in C3 and C8 management areas outside security areas allowed except from December 15 through April 14 when use will be restricted to designated routes.
- East of Ditch Creek:
Overland use in C3 and C8 management areas outside security areas allowed except from August 15 through December 14 and December 15 through April 14 when use will not be allowed.
- 7 Restricted to designated routes except from December 15 through April 14 when use will not be allowed.
- 8 Overland use allowed yearlong.
- 9 Overland use allowed except from December 15 through April 14 when use will be restricted to designated routes.
- 10 West of Ditch Creek:
Overland use allowed except from December 15 through April 14 when use will be restricted to designated routes.
- East of Ditch Creek:
Overland use allowed except from August 15 through December 14 and December 15 through April 14 when use will be restricted to designated routes.
- 11 Use not allowed.

TABLE 2: COMPARATIVE SUMMARY OF ALTERNATIVES CONTINUED

ISSUES & MEASUREMENT CRITERIA	ALTERNATIVES			
	A	B	C *	D
<u>Non-motorized Recreation</u>				
Acres in disturbance zone (Seasonal roads closed):				
High *	138,680	140,370	117,100	82,290
Moderate **	72,160	68,080	80,550	100,930
Low ***	17,070	19,460	30,260	44,690
<u>Effective Big Game Habitat</u>				
Open road density (mi./mi. ²)	1.94	2.42	1.51	0.83
Overland OHV use:				
Summer Range	Yes-Seasonal	No	No	No
Winter Range	Yes-Yearlong	Yes-Seasonal	Yes-Seasonal	No
Overland snowmobile use:				
Summer Range	Yes-Yearlong	Yes-Yearlong	Yes-Yearlong	Yes-Yearlong
Winter Range	Yes-Yearlong	Yes-Seasonal	Yes-Seasonal	No
Acres >.5 miles from roads:				
Open + Seasonal	30,610	14,020	29,170	87,130
Open roads only	40,500	47,360	53,516	98,750
<u>Administrative Use</u>				
Miles of road open to administrative use	729	866	545	278
Change in management costs	0%	-6%	+25%	+37%

* This includes the area less than 0.25 mile from an open road. Within this zone, recreationists may be disturbed by dust from roads, notable noise from vehicle motors, and a high concentration of people.

** This includes the area from 0.25 to 1 mile from an open road. Within this zone, recreationists may be disturbed by occasional noise from vehicle motors and a moderate concentration of people.

*** This includes the area greater than 1 mile from an open road. Within this zone, recreationists may rarely be disturbed by noise from vehicle motors. There would be a low concentration of people, so recreationists should experience the most solitude.

CHAPTER 3: ENVIRONMENTAL CONSEQUENCES

This chapter describes the potential consequences of implementing the alternatives (described in Chapter II). It also provides the scientific and analytical basis for the comparison of the alternatives. This information was provided by resource specialists and was taken from detailed analysis which can be found in the Access and Travel Management Analysis File at the Heppner District office. The organization of this chapter follows the sequence of key issues and other concerns listed in Chapter I.

INTRODUCTION

Discussion of the environmental effects of each alternative on the key issues follows. Direct, indirect, and cumulative effects of implementing each alternative along with the tradeoffs of mitigating undesirable effects are discussed. This analysis is not intended to explore tradeoffs that were part of the Forest planning process, but rather those which are legitimate Access and Travel Management options under Forest Plan direction [Forest Plan page III-3-K, Implementation Strategy]. Environmental effects not discussed in this section are addressed in the FEIS for the Forest Plan; see Chapter IV in the FEIS for details.

Effects are shown as being direct, indirect, or cumulative. These effects are described in terms of increases or decreases, intensity, duration, and timing. They are defined as:

Direct effects occur at the same time and place as the triggering action. For instance, road obliteration has a direct effect on the availability of that road for public or administrative access.

Indirect effects are separated in time or space from the action that caused them. The displacement of elk to private land because of disturbance from open roads, OHVs, and snowmobiles is an indirect effect.

Cumulative effects are those which result from the impact of the project when added to other past, present, and reasonably foreseeable actions or catastrophic events. These are regardless of administrative boundaries, ownership lines, or who is planning other projects [40 CFR 1508.7]. The cumulative effects analysis discussed here considered all roads within the project area, whether or not they are under the jurisdiction of the Forest Service. The results of this

analysis may be used to determine threshold values or resource constraints [Forest Plan III-4-L, Implementation Strategy]. Forest Plan standards and guidelines, project scoping, and interdisciplinary analysis insure that the proposed actions could be implemented from within this project area without cumulative effects exceeding those expected under current direction. An example of cumulative effects would be the effects of open road densities coupled with declining forest health and the associated massive salvage program on the quality of big game habitat.

EFFECTS QUANTIFIED

ISSUE 1: ROAD-ORIENTED ACTIVITIES

ALTERNATIVE A

DIRECT: Motor vehicle access is moderately high in that 689 miles of road (or 66% of the road system) are open, either yearlong or seasonally. Road-oriented opportunities could be decreased in some parts of the District more than others, depending upon the project objectives and the focus of each project's designing team. Roads could be closed after a project's completion with little or no warning to potential users of a particular road in question. Access to some favored roads, dispersed campsites, or recreation areas may be reduced.

INDIRECT: These project-by-project closures may confuse and discourage forest users, as road-oriented opportunities occur in patches across the District. This can diminish the recreation experience, since users who are unable to access their favorite area feel disappointment and anger.

CUMULATIVE: The effects of road closures occurring a little at a time across the District may be serious, as the collective elimination of dispersed campsites and favorite areas may not be noticed on a project-by-project basis. This could cause users who prefer road-oriented recreation to go elsewhere.

ALTERNATIVE B

DIRECT: Under alternative B, road-oriented opportunities would increase across the District. Motor vehicle access is the highest of all alternatives in that 860 miles of road (or 82% of the road system) are open, either yearlong or seasonally. Some traditionally favored roads and areas closed by previous projects would be reopened. Most of the District

would be available for forest users who are either limited to or prefer motorized access. Many types of road conditions would be available, providing many opportunities both for passenger cars and high clearance vehicles.

INDIRECT: Additional road-oriented opportunities may provide greater enjoyment for forest users and encourage additional use. However, an increase in open roads may also allow road-oriented activities and dispersed campsites in sensitive areas or in areas which need recovery. The results of additional access may include: a decreased amount of vegetation, increased erosion, reduced water quality and quantity, and damage to wildlife and fish habitat.

CUMULATIVE: The amount of road-oriented activities may increase across the District. Over time, the negative effects of an increased amount of open roads, coupled with the effects of declining forest health, may reduce the quality of the available non-motorized recreation experiences. The decline in visual appearances and lower hunting and fishing successes may disappoint forest users and cause them to go elsewhere.

ALTERNATIVE C

DIRECT: Road-oriented opportunities would decrease in the General Forest and Winter Range portions of the District. Motor vehicle access would be less than alternatives A and B in that 525 miles of road (or 50% of the road system) would be open, either yearlong or seasonally.

Most of the known traditionally favored roads, dispersed campsites, and areas would still be accessible. However, access to some of these would be closed for mitigation for forest health or for protection of other resources. Portions of the District would be unavailable to forest users limited to motorized access. Many types of road conditions would be provided for users who prefer a more rugged driving experience.

INDIRECT: A reduction in road-oriented opportunities may disappoint and anger some forest users. However, closing roads may also improve the condition of other resources, including big game and fish habitat. The reduction in available dispersed campsites should not be enough to crowd users into creating new sites. Road closures would also allow "well used" dispersed campsites along those roads to rehabilitate on either a planned or natural schedule.

CUMULATIVE: An increase in the quality big game and fish habitat may attract more users. However, a reduction in the amount of road-oriented opportunities may concentrate use to

areas still available to motorized access. This may be most apparent with dispersed campsites in that vegetation, soil, water quality, and the availability of firewood may be reduced. Still, concentrated use is expected to be a limited problem; the overall benefits across the District should offset any localized negative effects.

ALTERNATIVE D

DIRECT: Road-oriented opportunities would be very limited across the entire District. Motor vehicle access would be less than alternatives A, B, and C in that 297 miles of road (or 28% of the road system) would be open, either yearlong or seasonally.

Many traditionally favored roads, dispersed campsites, and areas would be closed. Most of the District would be unavailable for forest users limited to motorized access. There would be fewer opportunities for rugged driving recreation.

INDIRECT: The large reduction in road-oriented opportunities could disappoint and anger many forest users. Heavy impacts may occur to those dispersed campsites along the remaining open roads; competition for and use of these sites would greatly increase. Additionally, more sites would randomly develop along the remaining open roads, where no campsites now exist. However, the condition of resources along closed roads may improve through natural or planned rehabilitation, resulting in an increase in the quality of big game and fish habitat across the District.

CUMULATIVE: An increase in the quality of big game and fish may attract more users. However, use would be highly concentrated in areas still accessible by road; impacts to natural resources in these areas could be severe. This would be most apparent with dispersed campsites; with a limited number of sites easily accessible, recreationists would have to compete for available sites or create new ones. This could disappoint and anger many forest users and cause them to be displaced.

ISSUE 2: OHV/SNOWMOBILE USE

ALTERNATIVE A

DIRECT: Overland OHV use would occur across the District with few restrictions, which could result in conflicts with other recreationists. Recreationists preferring a more secluded, quiet experience may be disturbed by noise and dust. Overland OHV use could also damage soils, riparian areas, and

vegetation, disturb wildlife, and spread the seeds of noxious weeds.

Overland snowmobile use would occur across the District with few restrictions, which could result in conflicts with other recreationists. Although snow should adequately protect soils, riparian areas, and most vegetation, overland snowmobile travel could still disturb wildlife.

Project-by-project road closures associated with this alternative could positively affect OHV and snowmobile use, providing additional routes for those users who prefer road travel rather than overland travel.

INDIRECT: The quality of the recreation experience may be reduced for those recreationists preferring a nonmotorized setting. In some areas, water quality and fish habitat may be degraded by overland OHV use. OHV use may cause the spread of noxious weeds. OHV and snowmobile use may cause wildlife to become stressed due to disturbance.

CUMULATIVE: Though by itself, damage from OHVs may only occur in scattered areas, the affects to water quality and fish habitat could be compounded when joined with the affects from open roads and declining forest health. With neighboring Forest's and other lands becoming more restrictive to OHV use, unrestricted overland use allowed on this District may promote increased use which could create more resource damage over time. Cumulative effects from snowmobiles are not expected, since few trees would be affected.

ALTERNATIVE B

DIRECT: Seasonal and permanent restrictions could close off areas that may have been traditionally used by OHV users, especially in the Summer Range. Designated routes could also reduce opportunities and variety for these types of recreation. Opening roads (to pickup use) would reduce opportunities for OHV users who prefer road travel rather than overland travel. Designated and suggested OHV routes may concentrate use, which could cause damage in the immediate area (around the routes). However, these effects would be localized, routes would direct recreationists away from sensitive areas, disturbance to wildlife and other recreationists would be minimized, and the spread of noxious weed seeds would be confined (at least initially) to the immediate area.

Seasonal restrictions in the Winter Range could close off areas that may have been traditionally used by snowmobile users. Snowmobile travel could still disturb wildlife.

INDIRECT: The effects of restrictions could cause dissatisfaction by reducing the variety and areas available to OHV users or closing some user's favorite area. The concentration of users on designated routes could also reduce the quality of the recreation experience and cause safety hazards. However, designated and suggested routes would also offer security to those OHV users not familiar with the District. If impacts from use begin to appear, measures can be taken to mitigate them, while with unrestricted use, damaged areas may never be discovered. OHV routes would assist in the control of noxious weeds by making it easier to locate infestations. In some areas of General Forest and Winter Range, water quality and fish habitat may be degraded by overland OHV use and wildlife may become stressed.

The effects of restrictions on snowmobile use could cause dissatisfaction by reducing the variety and areas available to snowmobile users or closing some user's favorite area. However, the risk of dissatisfaction is minimal as snowmobiles are only restricted to designated routes in the Winter Range seasonally.

CUMULATIVE: Over time, designated OHV routes and adjacent areas may show resource damage. Also, in areas open to overland OHV use, adverse resource effects to soils and vegetation could occur unchecked. Though by itself, damage from OHVs may only occur in scattered areas, the effects to water quality and fish habitat could be compounded when joined with the affects from open roads and declining forest health. These effects should be partially reduced by seasonal restrictions and designated routes. Because this would be similar to restrictions in other locations, there would be little reason for OHV users to relocate to this District. The combination of designated routes and unrestricted areas should still provide an enjoyable and challenging experience for users.

Cumulative effects from snowmobiles are expected to be minimal. Disturbance to big game from snowmobiles would only occur near designated snowmobile routes in the Winter Range.

ALTERNATIVE C

DIRECT: The effects would be similar to those in Alternative B. Restrictions would reduce OHV and snowmobile opportunities from levels in alternative B, but other resources would benefit from these additional restrictions.

This alternative would further restrict OHV use, limiting it to the E1 management area in General Forest, with designated

routes provided for stream crossings and other sensitive areas.

INDIRECT: Again, the effects of these restrictions could cause OHV users dissatisfaction through closure of favorite areas and a reduction in variety of possible experiences. The concentration of users on designated OHV routes could also reduce the quality of the recreation experience and cause safety hazards. Restrictions and designated routes should reduce negative effects to water quality, fish habitat, wildlife, and other recreationists. Designated routes may experience concentrated negative effects, but as impacts from use begin to appear, measures can be taken to repair them.

CUMULATIVE: Over time, designated OHV routes could show resource damage depending on the amount of use. Although negative effects could occur unchecked in areas open to overland OHV travel, the areas available for this are those with the least potential for damage or disturbance. Constraints on OHV use should minimize the effects to water quality and fish habitat, even when joined with the impacts from open roads and declining forest health. There would be little reason for OHV users from other areas to shift to this District. The combination of designated routes and areas available for overland OHV use still provide an enjoyable and challenging experience for users.

Cumulative effects from snowmobiles are expected to be minimal. Disturbance to big game from snowmobiles would only occur near designated snowmobile routes in the Winter Range.

ALTERNATIVE D

DIRECT: Overland OHV use is restricted District-wide; designated routes would be provided yearlong district-wide, except during the winter months in Winter Range, when OHV use is not allowed. This would greatly limit the opportunities and variety available to OHV users and would eliminate many of their favored areas. Soil, vegetation, riparian areas, wildlife, and other recreationists would benefit across most of the District, however serious damage could occur to soils and vegetation along designated routes.

Opportunities for snowmobile use would be totally eliminated in Winter Range, thus reducing effects on big game.

INDIRECT: This alternative provides the highest level of designated OHV routes, significantly changing the OHV experience from the current condition. This could create a widespread dissatisfaction among OHV users. The small number of designated routes for OHV use would cause a high

concentration of use, which could result in severe impacts to the natural resources and a serious safety hazard.

Except for in the Winter Range, snowmobile opportunities would remain similar to current levels.

CUMULATIVE: The total restriction of OHVs to a designated route system could reduce the quality of the OHV experience enough that these users are forced to go elsewhere. Designated routes could experience so much resource damage that the water quality and fish habitat in subwatersheds containing those routes may be impacted, especially if the decline in forest health is severe in those areas as well. However, resources across most of the District should benefit from the combination of OHV and snowmobile restrictions and road closures.

ISSUE 3: NONMOTORIZED RECREATION

To analyze the potential effects to the non-motorized recreation resource, a map was created to show zones where high, moderate, and low levels of disturbance would likely occur with each alternative. These zones were defined as follows:

High levels of disturbance usually occur up to one quarter of a mile from an open road. Within this zone, recreationists may experience dust from roads, notable noise from vehicle motors, and a high concentration of people.

Moderate levels of disturbance usually occur from one quarter of a mile to a mile from an open road. Within this zone, recreationists may be disturbed by occasional noise from vehicle motors and a moderate concentration of people.

Low levels of disturbance usually occur more than one mile from an open road. Within this zone, recreationists may rarely experience noise from vehicle motors. There would be a low concentration of people, so recreationists should experience the most solitude.

Only yearlong open roads were used for this analysis. Because data regarding the frequency of travel on each open road was not available, the District Recreation Forester felt that excluding seasonally open roads from the map would help compensate for this missing information. Disturbance from OHV and snowmobile use was also not included in this map, although the effects of such use are discussed in the preceding issue. These maps are not intended to show the exact location of disturbance zones, instead it should indicate the trend of disturbance for each alternative. The maps for each alternative are displayed along with the discussion of effects.

ALTERNATIVE A

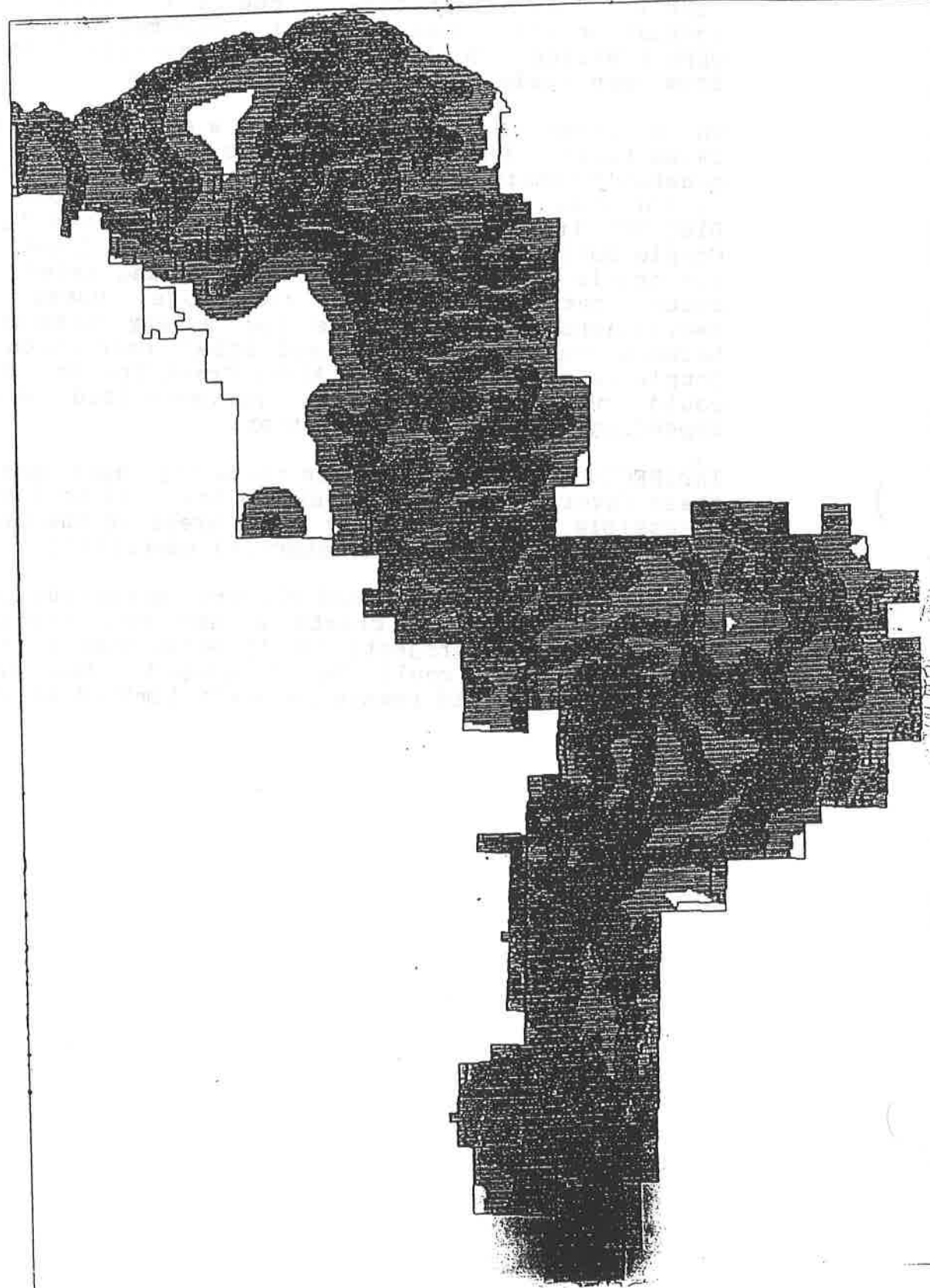
DIRECT: This alternative is one of the least desirable for recreationists looking for non-motorized recreation opportunities. Disturbance to non-motorized recreationists from open roads would be relatively high.

Unrestricted OHV and snowmobile use across the District would cause further disturbance. Access to system trailheads would generally remain open, but trails which haven't been developed by the Forest Service may become inaccessible. Only four District trails are closed to motorized use by CFR order: Copple Butte, Madison, Skookum, and Alder Creek. Because so few trails are restricted, conflicts and safety hazards may occur between OHV or snowmobile users and other recreationists. Conflicts and safety hazards may occur between snowmobile users and other recreationists on the Copple Butte, Skookum, and Alder Creek Trails. Road closures could occasionally create non-motorized opportunities, depending on the road's location.

INDIRECT: Closure of certain roads may anger some visitors if their favorite area or non-system trail is no longer directly accessible. There are only a few areas of the District which offer a high quality non-motorized experience.

CUMULATIVE: With more road closures occurring over time, it may be possible to create a new non-motorized trails. However, because projects rarely occur next to each other so that a system could be developed, the non-motorized opportunities would remain severely limited on the District.

ALT A DISTURBANCE ZONES (excluding seasonal roads)



LEGEND

	<.25 miles from an open road 137,949 ACRES
	.25-1 mile 58,235 ACRES
	> .1 mile 13,646 ACRES

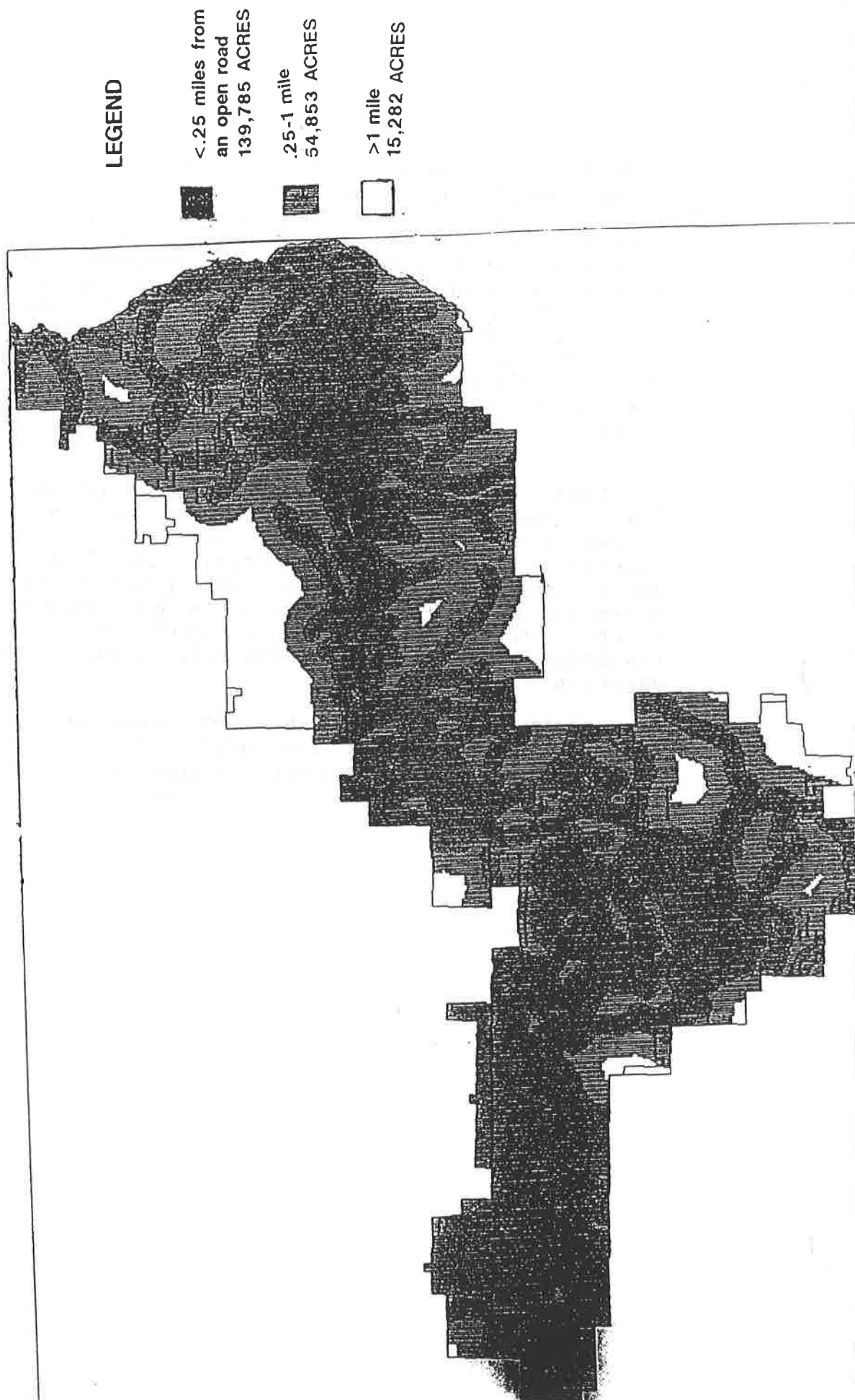
ALTERNATIVE B

DIRECT: Disturbance to non-motorized recreationists from open roads would be relatively high. Because there are restrictions for OHV use in Summer Range and seasonal restrictions for OHV and snowmobile use in Winter Range, additional disturbance from these sources would be reduced. Access to system trails and trails which haven't been developed by the Forest Service would remain the same. Conflicts and safety hazards may occur between snowmobile users and other recreationists on the Copple Butte, Skookum, and Alder Creek Trails. The large number of open roads and areas proposed by this alternative would limit non-motorized opportunities even further, primarily in the Summer Range.

INDIRECT: Non-motorized activities would be channelled to only a few trails. If non-motorized use on trails greatly increases over current levels, soil erosion, a reduction in vegetation, or damage to the trail itself could occur. The large reduction in non-motorized opportunities could cause non-motorized recreationists to be displaced to other areas which provide a higher quality experience. There are only a few areas of the District which offer a quality non-motorized experience.

CUMULATIVE: Over time, the high level of disturbance may diminish non-motorized recreation on the District. If non-motorized recreationists continue to use this District, they would have to endure the disturbances caused by motorized activities.

ALT B DISTURBANCE ZONES (excluding seasonal roads)



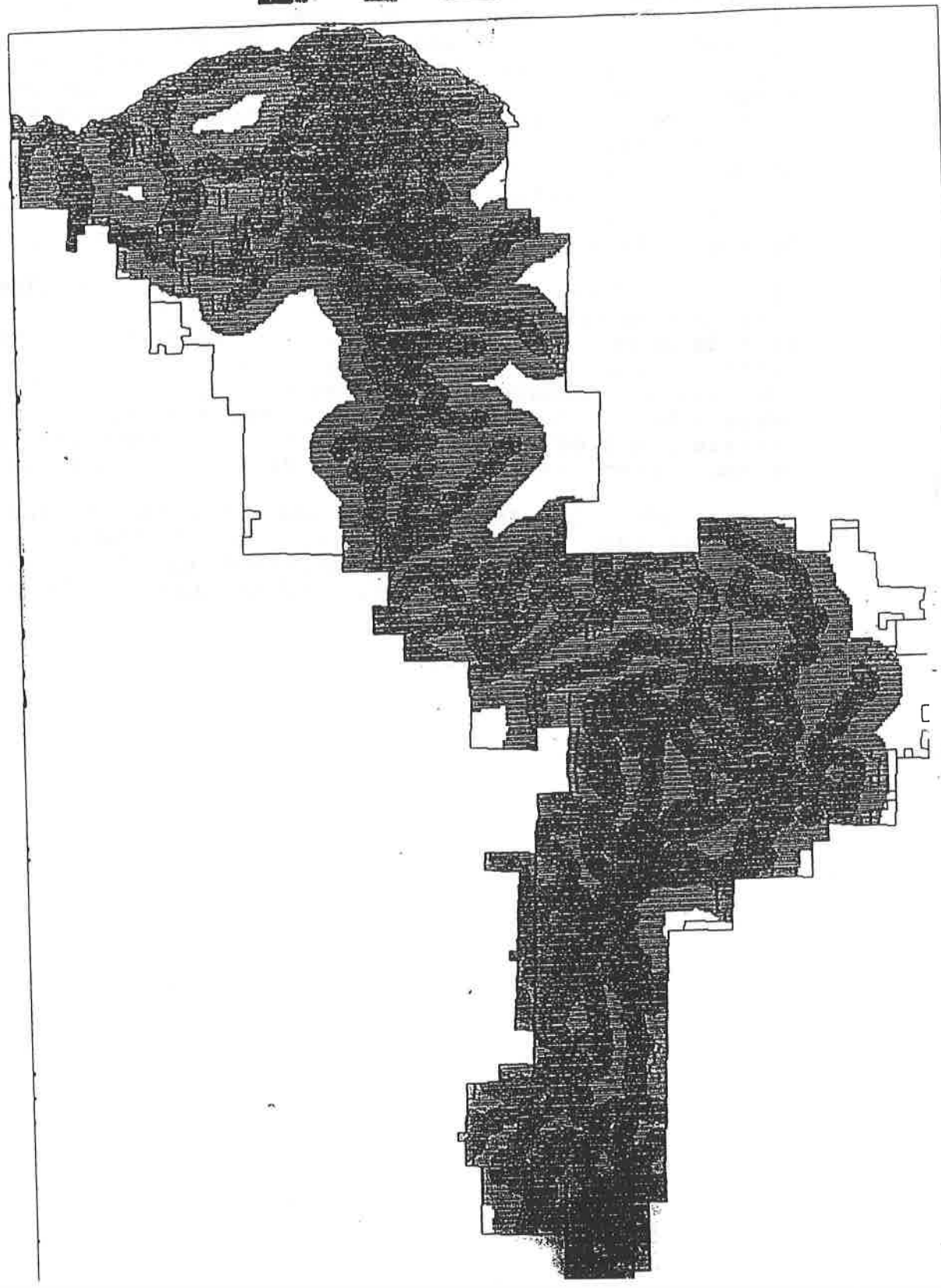
ALTERNATIVE C

DIRECT: Disturbance to non-motorized recreationists from open roads would be relatively moderate when compared to alternatives A and B. Because there are restrictions for OHV use in Summer Range and General Forest and seasonal restrictions for OHV and snowmobile use in Winter Range, additional disturbance from these sources would be reduced. Access to system trailheads would remain the same, but trails which haven't been developed by the Forest Service may become inaccessible. Conflicts and safety hazards may occur between snowmobile users and other recreationists on the Copple Butte, Skookum, and Alder Creek Trails. There would be more opportunities for non-motorized recreation than in Alternatives A or B because there would be fewer open roads.

INDIRECT: Though the reduction in road miles from Alternative A doesn't necessarily create more non-motorized area, it does provide more of a buffer from motorized disturbance. In certain areas this could enhance the non-motorized recreation experience. However, disturbance would still be moderate overall due to the number of roads remaining open. Closure of certain roads may anger some visitors if their favorite area or non-system trail is no longer directly accessible.

CUMULATIVE: Displacement of non-motorized recreationists would be less likely to occur. Though there is greater potential to enhance the non-motorized opportunities than in Alternative A it is still limited because of the amount of open roads.

ALT C DISTURBANCE ZONES (excluding seasonal roads)



LEGEND

-  <.25 miles from an open road
118,185 ACRES
-  .25-1 mile
66,485 ACRES
-  >1 mile
25,250 ACRES