

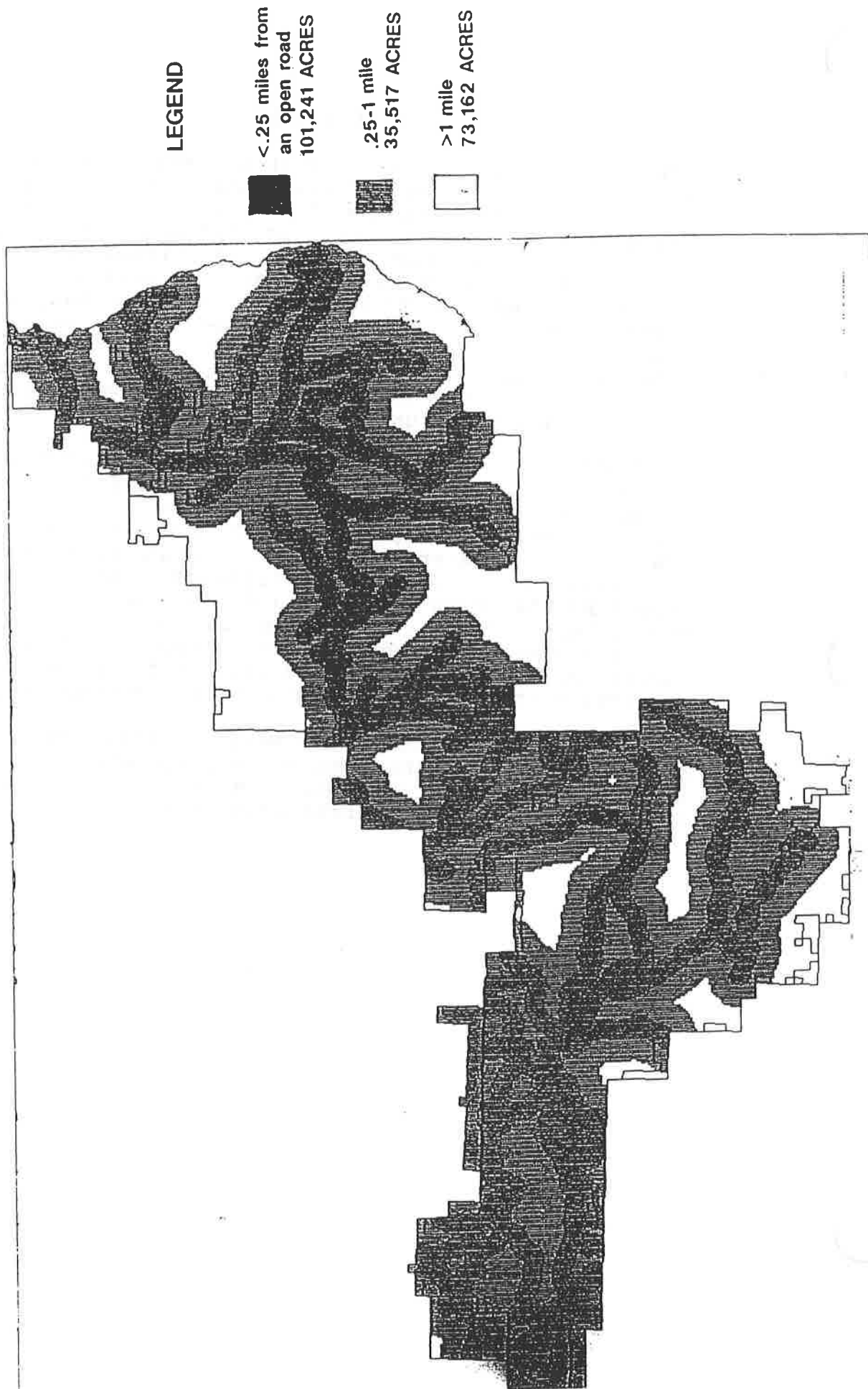
ALTERNATIVE D

DIRECT: In comparison to other alternatives, disturbance to non-motorized recreationists from open roads would be relatively low. Because OHV use would be restricted to designated routes across the District and snowmobile use would not be allowed in Winter Range, additional disturbance from these sources would be close to non-existent. Access to system trailheads would remain the same, but many trails which haven't been developed by the Forest Service would become inaccessible. Conflicts and safety hazards between user groups would not occur on current Forest Service system trails since these would be closed to OHV and snowmobile use. There would be many opportunities for non-motorized recreation.

INDIRECT: With the abundance of road closures proposed, this alternative would provide a high quality non-motorized recreation experience and opportunities to convert closed roads to non-motorized trails. This would save constructing new trails on undisturbed areas. In addition, non-motorized recreation use could be distributed over a larger area, lessening the chance for resource damage. In contrast with the other alternatives, this alternative would provide relatively more solitude for the non-motorized recreationist. Closure of roads may anger visitors if their favorite area or non-system trail is no longer directly accessible.

CUMULATIVE: This alternative would significantly enhance the non-motorized recreation experience and opportunities across the District. This may cause an increase in the number of non-motorized recreationists using the District.

ALT D DISTURBANCE ZONES (excluding seasonal roads)



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ISSUE 4: EFFECTIVE BIG GAME HABITAT

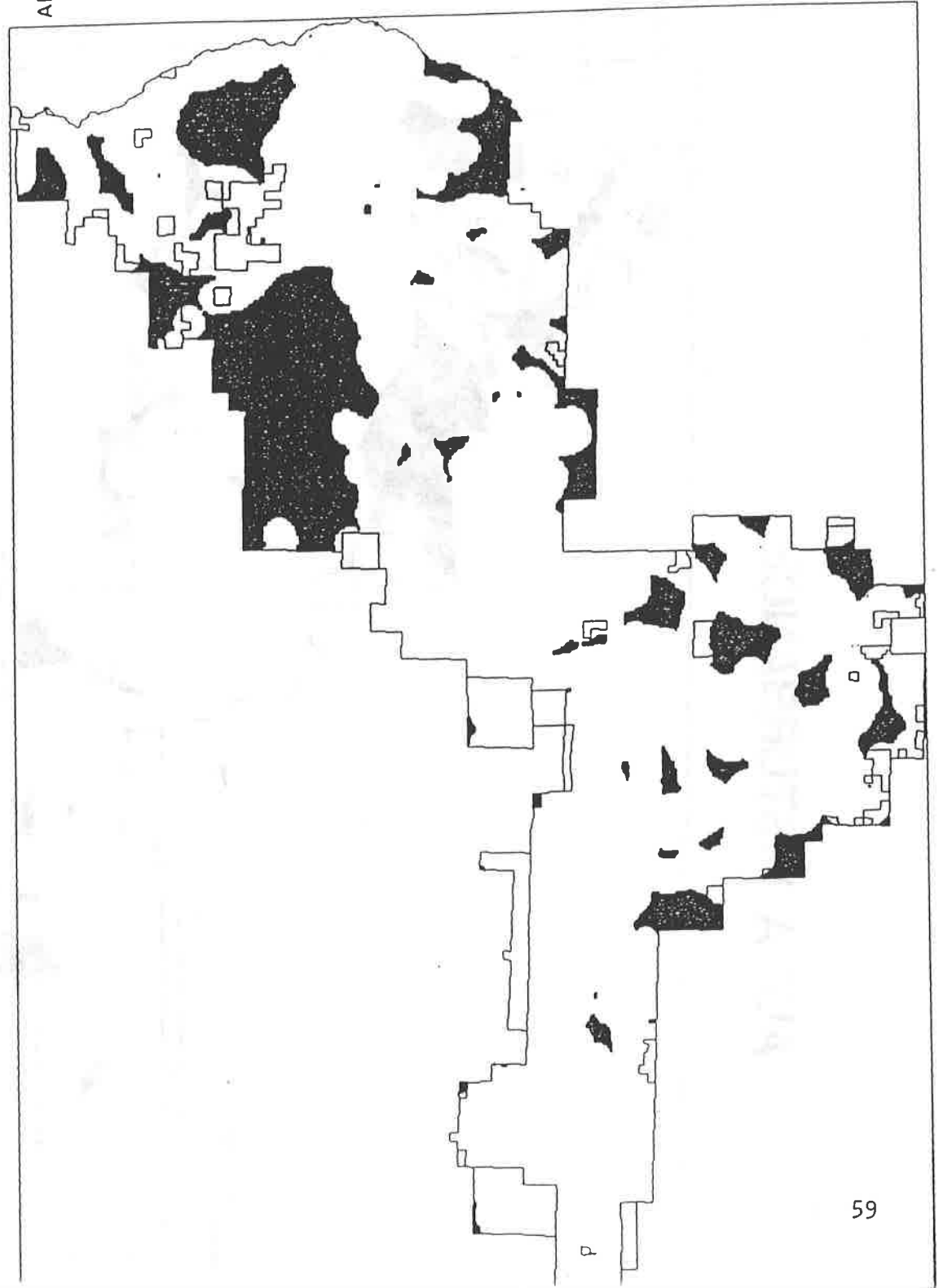
Maps were created for each alternative to help analyze potential District-wide disturbance patterns for big game. These patterns were calculated using open and seasonally open roads to indicate areas of potential disturbance during the periods of highest road use throughout the year. Areas up to one half mile from such roads could result in relatively high levels of road-related disturbance, while areas greater than one half of a mile should provide relatively low levels of road-related disturbance. More maps were developed, using only open roads, to indicate the areas big game would be most vulnerable during hunting seasons. Again, vulnerability would be lowest in areas greater than one half mile from an open road. These maps do not indicate potential disturbance or vulnerability caused by administrative use of closed roads. Disturbance and vulnerability due to OHV and snowmobile use were also not included in this map, although the effects of such use are discussed in the text. These maps indicate the trend of big game road-related disturbance and vulnerability for each alternative. The maps for each alternative are displayed along with the discussion of effects.

ALTERNATIVE A

DIRECT: This alternative has one of the higher potentials to affect big game due to the amount of open roads. Disturbance to big game would fluctuate as road densities decrease in some areas, remain the same in others, or even increase if a project occurs in an area not already accessible by road. Overland use of OHVs and snowmobiles would compound disturbance. Relief from disturbance during calving/fawning would be minimal, since road closures during this season are confined to a small area in the north and OHV use is unrestricted.

The Texas and Wickiup Cooperative Travel Management areas would continue to reduce some vulnerability, but animals migrating to their winter range would be vulnerable to hunters. The high amount of disturbance and vulnerability would reduce the quality of habitat. A small amount of quality habitat would be available, since few

ALT A VULNERABILITY

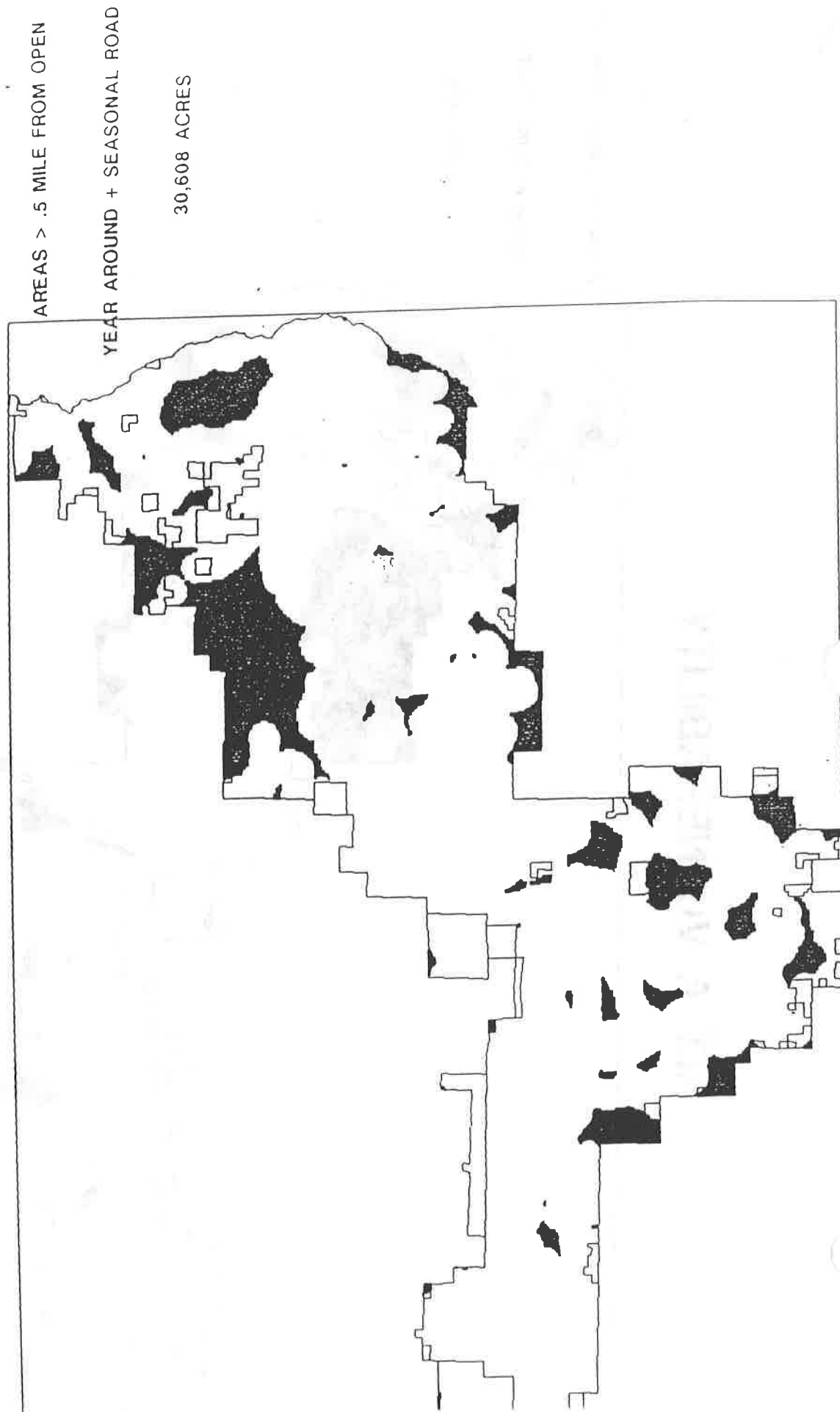


AREAS > .5 MILE FROM OPEN

YEAR AROUND ROAD

40,504 ACRES

ALT A DISTURBANCE



areas are greater than a half a mile from open or seasonally open roads.

INDIRECT: Displacement of big game animals would continue to occur due to disturbance; competition with other herds and damage to private property could result. Stress caused by disturbance could provoke a decline in birth rates and infant survival. In the winter months the additional stress may cause a rise in death rates. Success during hunting seasons may reduce the bull to cow ratio, decreasing the ability to successfully breed.

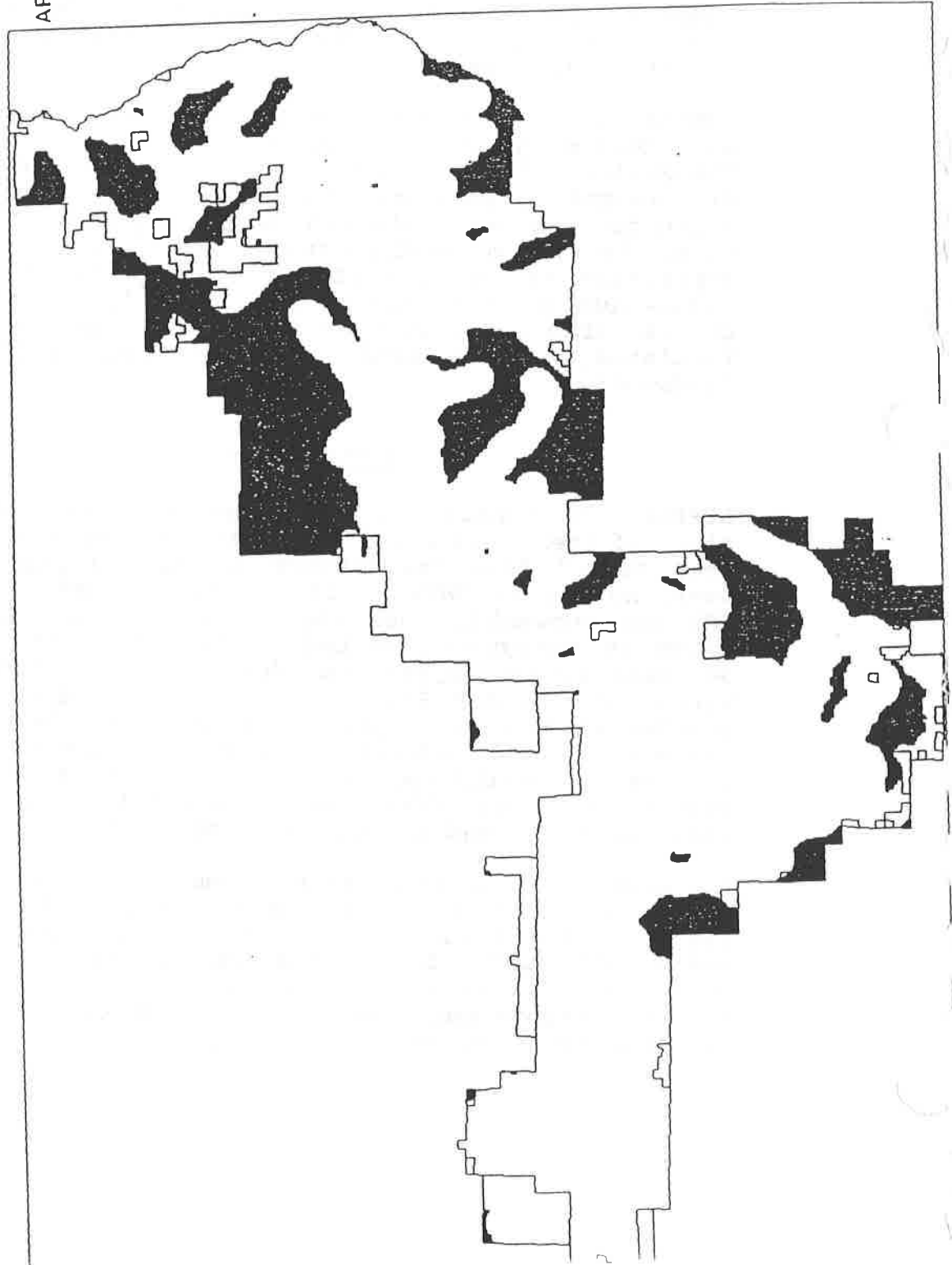
CUMULATIVE: Moderately high open road densities, combined with declining cover due to poor forest health, would reduce the quality of big game habitat across the District. Because of this and a high level of vulnerability, population dynamics would not achieve state management objectives. In the long-term, the type of hunting experience would remain a motorized experience as it currently is; this has the potential to reduce hunter satisfaction due to declining hunter success. Entire herds may stay yearlong on the more isolated, hunter-regulated, private lands; this may financially impact many landowners.

ALTERNATIVE B

DIRECT: Disturbance to big game would be high because the miles of open road would increase. Big game would experience some relief from disturbance during calving/fawning, since overland use of OHVs would not be allowed in Summer Range. OHV and snowmobile use would also be restricted in Winter Range to designated routes during the winter, which would decrease stress on big game during that critical period. In Winter and Summer Range, road closures during the hunting seasons would reduce some vulnerability. The high amount of disturbance and vulnerability would reduce the quality of habitat. Quality habitat is minimal because areas greater than a half a mile from open or seasonally open roads are few, small in size, and seriously fragmented.

INDIRECT: Displacement of big game animals would continue to occur due to disturbance; damage to private property could result. Disturbance could provoke a decline in birth rates and infant survival. In the winter months, the additional stress may cause a rise in death rates. Success during hunting seasons may reduce the bull to cow ratio, decreasing the ability to successfully breed.

ALT B VULNERABILITY

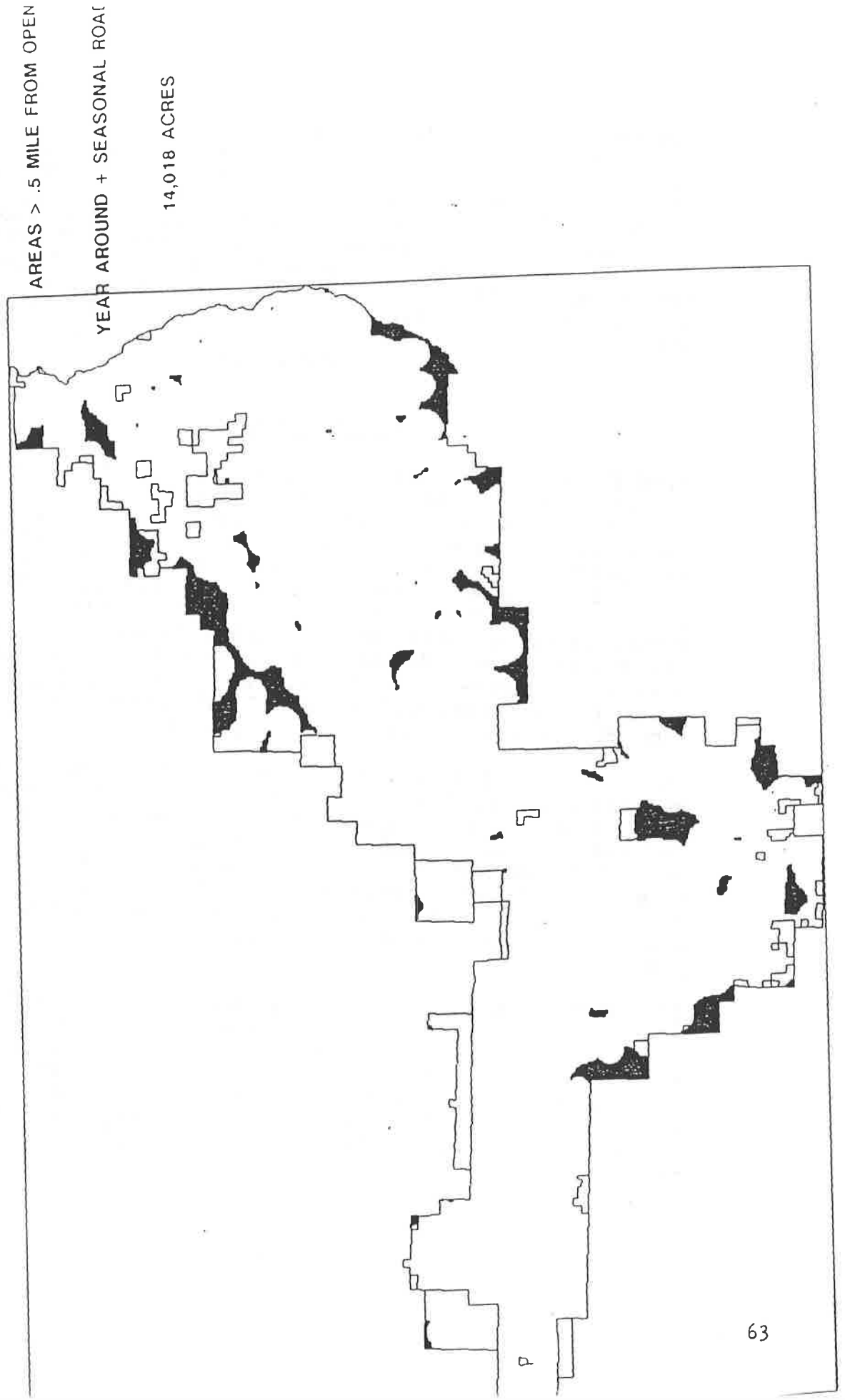


AREAS > .5 MILE FROM OPEN

YEAR AROUND ROAD

47,356 ACRES

ALT B DISTURBANCE



CUMULATIVE: Very high open road densities, combined with declining cover due to poor forest health, would reduce the quality of big game habitat across the District. Because of this and a very high level of vulnerability, population dynamics would not achieve state management objectives. In the long-term, the type of hunting experience would change to more of a motorized experience than it currently is; this has the potential to reduce hunter satisfaction due to declining hunter success. Entire herds may stay yearlong on the more isolated, hunter-regulated, private lands; this may financially impact many landowners.

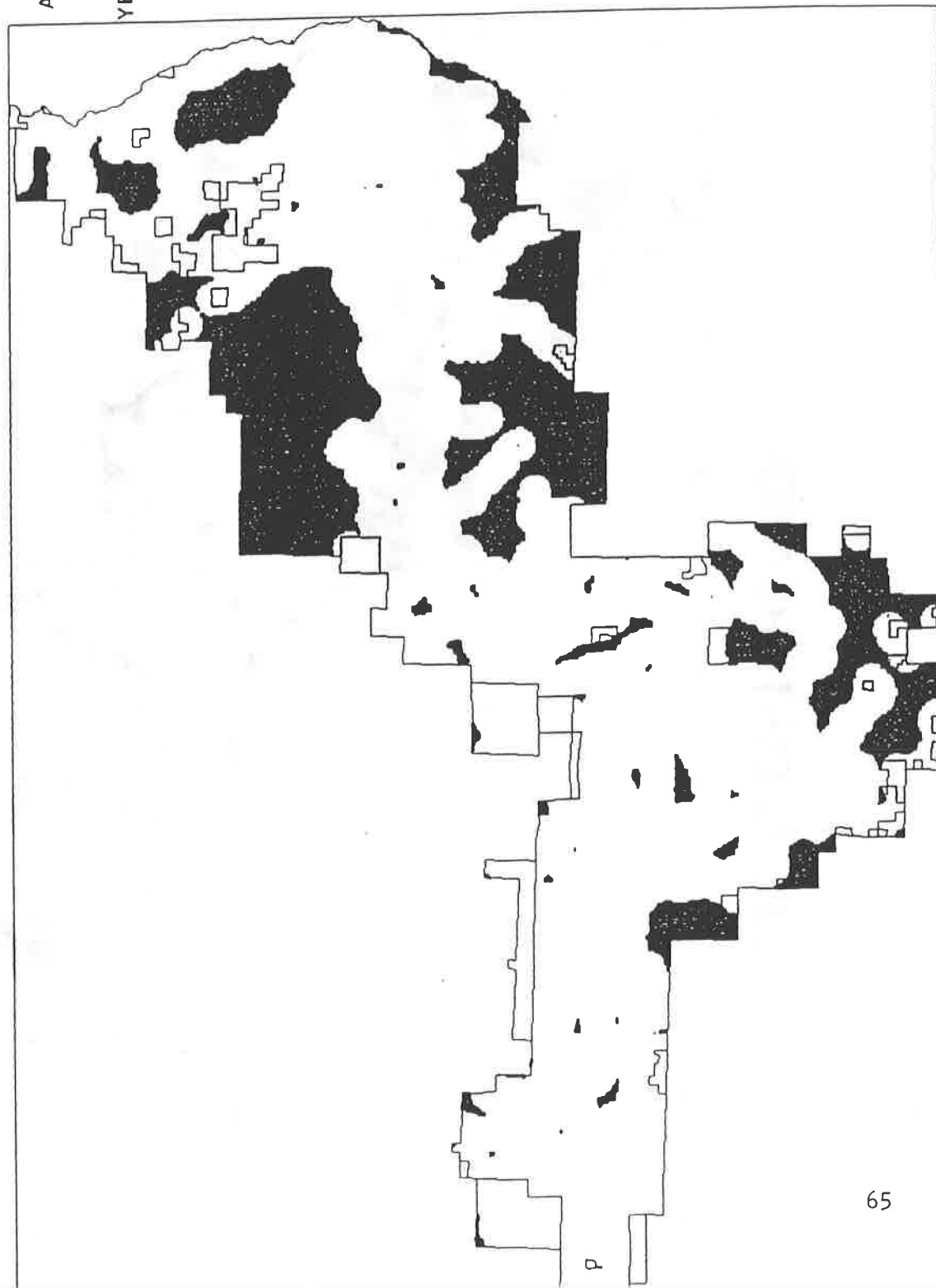
ALTERNATIVE C

DIRECT: Disturbance to big game would be reduced relative to alternatives A and B because open road densities would decrease in General Forest and Winter Range. Big game would experience some relief from disturbance during calving/fawning, since overland use of OHVs would not be allowed in Summer Range. During the winter, OHV's would be restricted to designated routes west of Ditch Creek in the Winter Range, and eliminated completely east of Ditch Creek in the Winter Range. Snowmobile use would also be restricted to designated routes in the Winter Range during the winter. These restrictions would cause a decrease in stress on big game during the winter critical period.

In Winter and Summer Range, road closures during the hunting seasons would partially reduce vulnerability. The quality of habitat would be increased due to a reduction in disturbance and vulnerability, and the addition of limited access areas where big game could escape harassment. Quality habitat would be at a relatively moderate level as areas greater than a half a mile from open or seasonally open roads would increase in size and number, although fragmentation would still be a problem.

INDIRECT: Displacement of big game animals would continue to occur due to disturbance; damage to private property could result. This could provoke a decline in birth rates and infant survival; in the winter months, the additional stress may cause a rise in death rates. Vulnerability is still relatively high and success during hunting seasons may reduce the bull to cow ratio, decreasing the ability to successfully breed.

ALT C VULNERABILITY

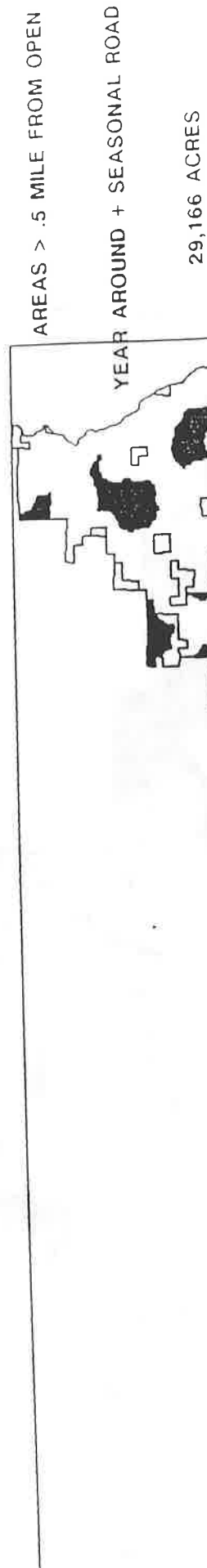


AREAS > .5 MILE FROM OPEI

YEAR AROUND ROAD

53,516 ACRES

ALT C DISTURBANCE



CUMULATIVE: Moderately high open road densities, combined with declining cover due to poor forest health, would reduce the quality of big game habitat across the District. Because of this and a high level of vulnerability, population dynamics would not achieve state management objectives. In the long-term, despite lower road densities, the type of hunting experience would remain primarily a motorized experience; although somewhat less than it currently is. The potential of reduced hunter satisfaction still remains due to declining hunter success. Entire herds may stay yearlong on the more isolated, hunter-regulated, private lands; this may financially impact many landowners.

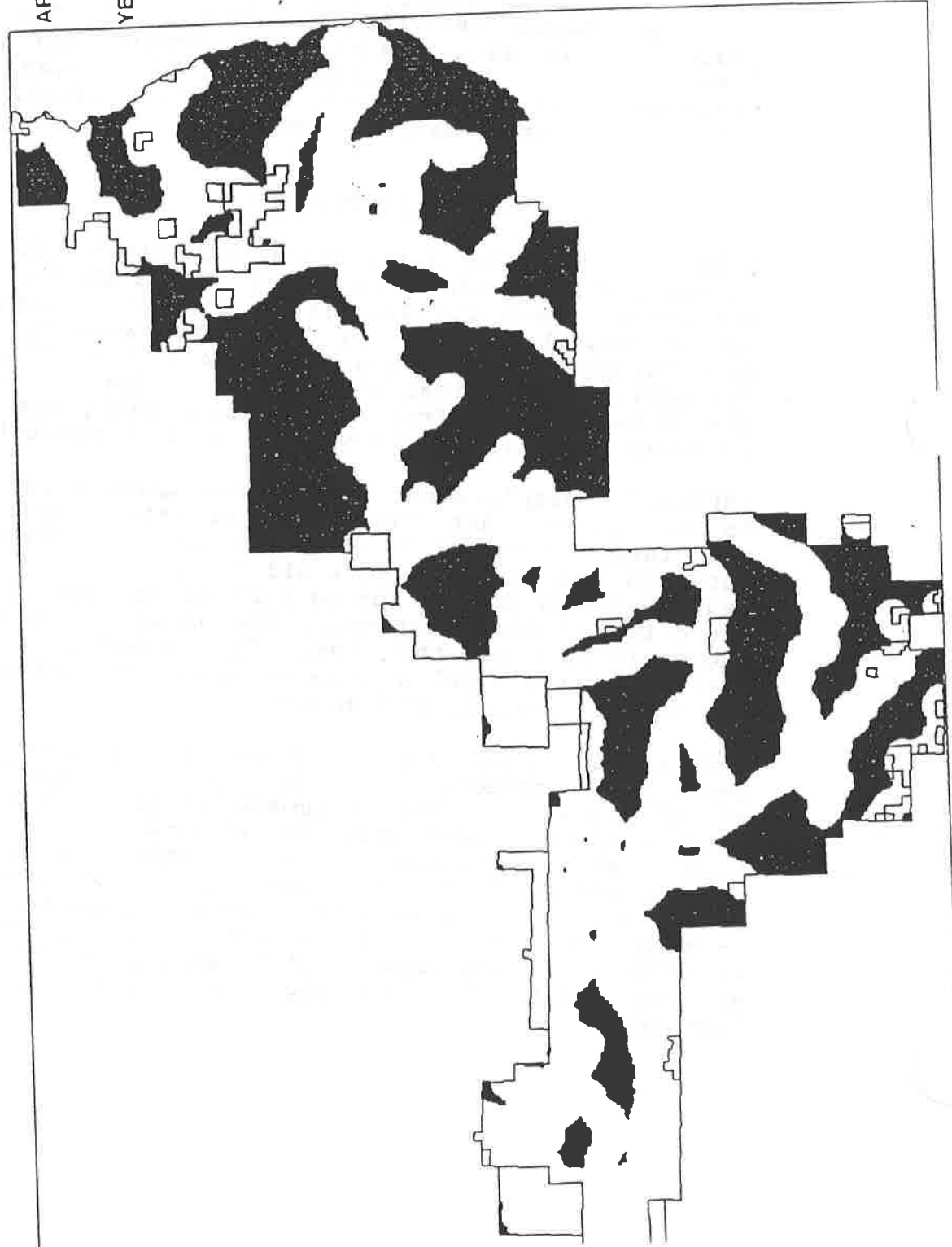
ALTERNATIVE D

DIRECT: Big Game disturbance and vulnerability would be significantly reduced because of the large decrease in road densities across the District. Big game Summer and Winter ranges would be void of all OHV and snowmobile travel during critical periods. The quality of habitat would be maximized. The quality of habitat would be high, because areas greater than a half a mile from open or seasonally open roads would increase in size, and number and be more connected.

INDIRECT: Displacement of big game animals would be reduced to the point that damage to private property could be alleviated. The bull to cow ratio would be improved and birth rate and infant survival would be greatly increased. With reduced vulnerability during hunting seasons, hunter success would be reduced, increasing the amount of mature bulls to successfully breed the cows. This would also increase the quality of trophy bulls to be harvested by hunters and improve the overall quality of hunting.

CUMULATIVE: This alternative would have numerous long-term beneficial effects on big game populations, hunter satisfaction, and animal damage control of big game upon private lands. Even with the decline in cover due to poor forest health, the quality of big game habitat would remain good across the District. Population dynamics should achieve state management objectives. In the long-term, this would increase the quality of non-motorized hunting and hunter satisfaction. Big game would be encouraged to stay yearlong on the District, reducing the financial impacts to landowners.

ALT D VULNERABILITY



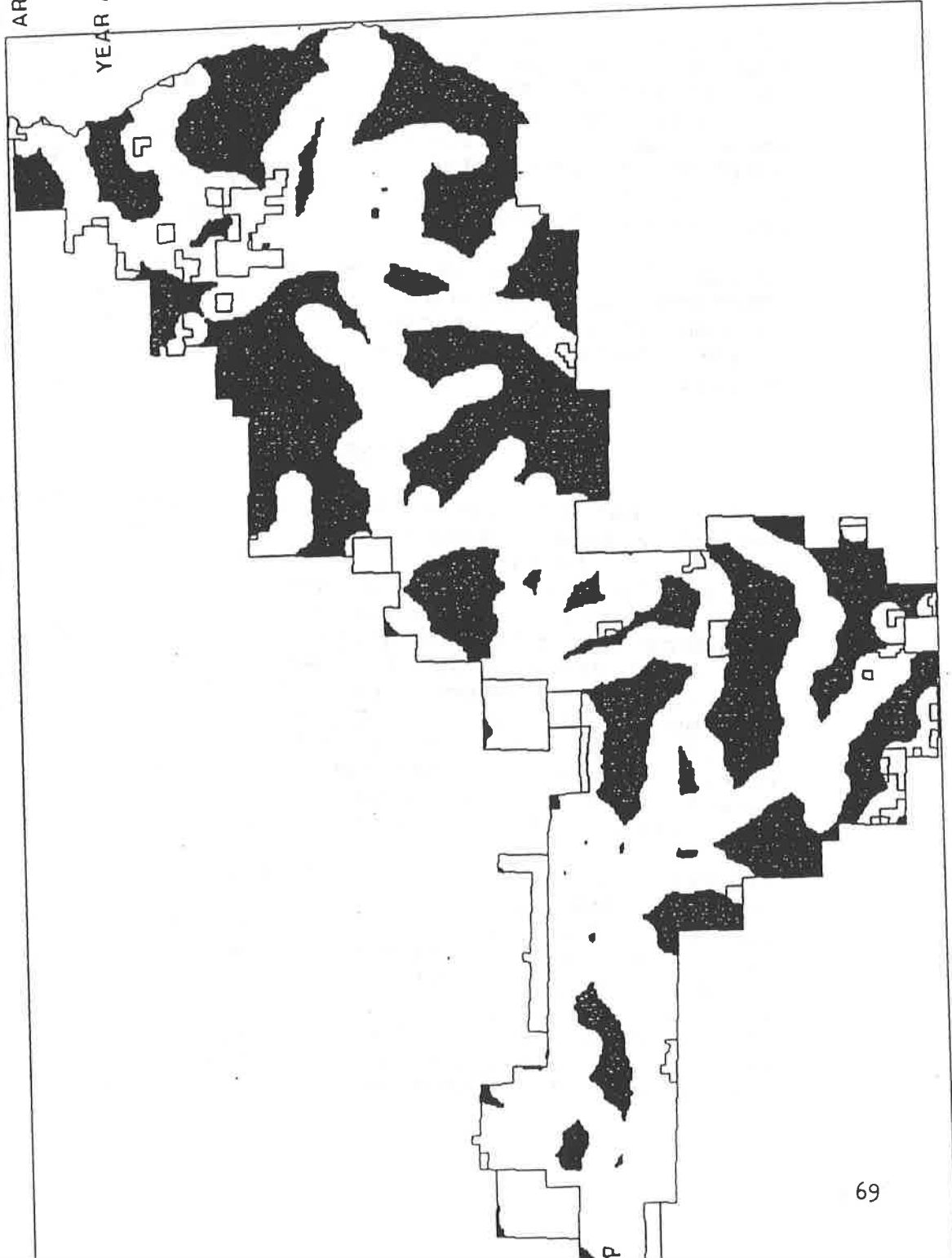
AREAS > .5 MILE FROM OPEN

YEAR AROUND ROAD

89,750 ACRES

ALT D DISTURBANCE

AREAS > .5 MILE FROM OPEN
YEAR AROUND + SEASONAL ROAD
87,132 ACRES



ISSUE 5: ADMINISTRATIVE USE

ALTERNATIVE A

DIRECT: The timing of administrative use would be limited during seasonal closures for calving/fawning in the northern part of the District and for hunting in the Texas and Wickiup areas.

INDIRECT: Change in costs of the District program of work, contracts, and permitted use should be minimal, since the current way of managing the permit system totally prohibits entry only during the hunting season in the Texas and Wickiup areas. Access for fire detection and suppression activities would not be restricted. Disturbance to big game may occur since trips on closed and seasonally closed roads may exceed the non-disturbance level (of less than 4 trips per month).

CUMULATIVE: There would be few long-term effects to the administrative use program. However, the effects of entries for administrative purposes, combined with declining cover due to poor forest health, may reduce the quality of big game habitat.

ALTERNATIVE B

DIRECT: Entry to projects would take less time since access would be available over most of the District. Some activities would not be permitted in Summer Range from May 1 through June 30 to reduce stress to big game during calving and fawning. Also, some activities would not be permitted in Winter Range from December 15 through April 14 to reduce disturbance to big game which are already stressed by the weather and a limited food supply. However, since the activities which are best implemented during these times would be permitted, effects should be minimal. Opportunities for special uses, such as firewood collection, christmas tree cutting, etc. may increase because of additional access. Access for fire detection and suppression activities would not be restricted.

INDIRECT: Costs associated with District projects, contracts, and permitted uses would be reduced, because more areas would be accessible by motorized methods. Contractors and permittees would experience the same benefits. Because more of the District would be accessible to the public, some project costs may also increase due to a greater emphasis on visual management. There should be little additional disturbance to big game from administrative access, since so many roads will already be open to public use.

CUMULATIVE: The reduction in project costs, resulting from more access, may provide opportunities for expanding resource management programs.

ALTERNATIVE C

DIRECT: Access for some activities would not be permitted in Summer Range from May 1 through June 30 to reduce stress to big game during calving and fawning; access would be restricted again from August 15 through December 14 to decrease big game vulnerability and improve the quality of hunting. In some cases, the period of permitted access in Summer Range would be extended through October 14 to allow more time to complete projects. Access would also be limited in Winter Range from December 15 to April 14 to reduce disturbance to big game already stressed by the weather and a limited food supply. However, access for activities which are best implemented during these times would be permitted, so the effects to District programs, contracts, and permits should be minimal. Security areas would only allow access for projects which would directly or indirectly benefit big game habitat. Fire suppression would be unrestricted in all areas of the District.

INDIRECT: Project costs would greatly increase because project preparation in areas limited to nonmotorized access would require more time and personnel. For instance, if the work day consists of eight hours and it takes 30 minutes to walk a mile and the project site is 3 miles from the nearest open road, then access to and from the project would take three hours; only five hours would be spent on actual work. This access time would further increase if supplies or equipment are needed to complete the task. Deadlines and limited time for project preparation would require additional personnel. Contractors bidding on a project requiring nonmotorized access would increase the price of their bid. As a result of all of these factors, some programs may be reduced or completely eliminated--especially if heavy equipment or lots of supplies are needed. Permittees would also experience an increase in their business costs. Detection of fires could be affected during seasonal restrictions to administrative use, but suppression would be unrestricted District-wide. Even so, suppression would take longer because time would be spent opening closure devices to access the fire (this concern would be most evident with closures requiring the removal of earthen, log, or boulder barriers). Disturbances to big game would be closely regulated through the permit system.

CUMULATIVE: Some programs or portions of programs would be cancelled. Opportunities for special uses may be largely reduced - the greatest effect would be to firewood collection. Fires may affect more ground since detection and access may take longer. In the short-term, the reduction in administrative access would reduce disturbance to big game; in the long-term the quality of big game habitat may be improved as open road densities are reduced.

ALTERNATIVE D

DIRECT: Entry to projects would take more time since access would be limited to nonmotorized methods over most of the District. Equipment and supplies may not be available without motorized entry. Contractors and permittees would experience the same difficulties. Opportunities for special uses, such as firewood collection, christmas tree cutting, etc. may decline as access becomes very limited. Fire detection would rely mostly on air reconnaissance, but suppression activities would be allowed unrestricted entry. Disturbance to big game would be greatly reduced.

INDIRECT: The cost of projects would significantly increase; in some cases this may cause projects to be dropped. Contracts may not be bid upon due to logistical difficulties and excessive costs. Permittees will experience a rise in their cost of business and may be forced to go elsewhere. Because fires may not be detected as early, more ground may be affected by fire before suppression activities begin. The quality of big game habitat should improve.

CUMULATIVE: Entire District programs would cease to exist. The affected program of most concern would be tree improvement; without motorized access to genetically superior trees across the District, identification, development, and maintenance of these trees and collection of their cone crop would be impossible. This could affect forest health in the long-term, as seed from disease-resistant, fast-growing trees is no longer available. Stands of trees not planted from genetically superior seed will not produce cover for big game as quickly, may be more susceptible to insect and disease attack, and would take longer to produce trees large enough for harvest. Though wildlife habitat may be improved by a reduction of access in the short-term, it may actually decline because of slower growing, less healthy cover over the long-term. Special users may be forced to go somewhere else for their products or may have to do without. Local economies and communities may be affected as contractors and permittees are forced to work elsewhere.

OTHER ISSUES

(6) Watershed, Fisheries, Soils, and Riparian Areas

Road surface and related soil compaction can increase the quantity of water entering a stream. Ditches and other water diversion structures concentrate the flow of water into a single point of entry, instead of allowing it to naturally disperse over a wide area. This increases the force of runoff, which may cause increases in the amount of woody debris and sediment entering the stream. On roads to be obliterated, waterbars will be constructed. On other roads, waterbars and other drainage structures will be constructed and maintained. These measures will disperse runoff, preventing erosion caused by flow concentration.

Roads and road related activities also contribute to soil erosion and increased sedimentation (soil particles in the stream). When a road is constructed, vegetation and the organic layer of soil (both of which protect the soil surface) are removed, making the soil highly susceptible to erosion. When a road is closed, the vegetation eventually recovers. However, seedbed preparation and seeding accelerate this recovery, reducing the road's susceptibility to erosion earlier than with natural regeneration. If a road remains open to traffic, sediment can be generated from the surface, even on aggregate-surfaced roads. Vehicles driving on a road cause ruts that can range from a slight indentation to several inches deep. Water runs down these ruts, picking up sediment and speed. When this water finally leaves the road, it can enter a stream and carry the sediment downstream until the water slows down enough to allow the sediment to settle out. This is a particular problem when a road is located too close to a stream. All of this contributes to a loss of soil, a decline in water quality (sediment and nutrient loading), and deposition of sediment on spawning gravels causing a decline in the quality of fish habitat.

Roads which are poorly located or constructed may pose the greatest threat to these resources. Inadequate stream crossings can wash out, and can wash material used to construct the crossing into the stream. Roads in riparian areas, which were created from vehicles driving overland or on old skid trails, also cause damage to these resources because no erosion control devices have been built into these roads.

The recent Columbia River Basin Anadromous Fish Habitat Management Policy and Implementation Guide provides further motivation to obliterate existing local roads not required to meet current or future integrated resource objectives.

The interdisciplinary team considered identifying these concerns as a key issue. However, they felt that this issue was so important that all alternatives must provide protection for these resources, so detailed mitigation measures (see Chapter 2, pages 23-31) were adopted instead. Because open and seasonally open roads also cause negative effects to big game, the key issue of *Effective Big Game Habitat* should also give an indication of the effects to watershed, fisheries, soil, and riparian areas; the alternative which best satisfies big game needs should also satisfy these concerns. A decrease in miles of open road, especially during wet seasons, would directly decrease the amount of traffic-caused sediment moving down the drainages. Closing roads would allow road maintenance efforts to focus on a lesser number of open miles thus increasing the quality of road maintenance on those open roads; traffic on roads remaining open would cause less sediment. (Road maintenance activities are designed to help maintain drainage structures and roadway drainage patterns, thus minimizing soil movement and stream sedimentation from roads.)

Culverts that are unstable or at risk of failure would be stabilized; on roads to be obliterated, they would be removed permanently. On other closed roads, they would be removed and the stream channel stabilized until they could be replaced through a project. On open and seasonal roads, unstable culverts would be replaced as soon as possible.

If, through implementation and monitoring, previously unidentified roads are discovered in riparian areas, they may be closed and obliterated, unless they are identified as needed for resource management.

(7) Forest Health

Forest health is indirectly linked to Access and Travel Management in several ways. Most obvious is the current need to provide access to salvage dead and dying stands of timber followed by the need to rehabilitate areas affected by insects and disease. Access is also important for fire suppression, use of fire as a rehabilitation tool, tree planting and silvicultural