

## APPENDIX 5

### THREATENED and ENDANGERED SPECIES MITIGATION PLAN for PROPOSED ASARCO ROCK CREEK MINE

This mitigation plan displays the specific items identified that are required to reduce, eliminate, or provide substitution for environmental consequences to species federally listed as threatened or endangered. It covers implementing Alternative Five as displayed in the Environmental Impact Statement for the ASARCO Rock Creek Mine project. This Final Mitigation Plan will be implemented by ASARCO and appropriate state and federal agencies.

#### **A. To reduce mortality risk (avoid incidental take) to Threatened and Endangered species ASARCO will:**

1. Develop a transportation plan designed to minimize mine related vehicular traffic, traveling between state highway 200 and the mill site, and minimize parking availability at the plant site. Agencies approval required.
2. Not use salt when sanding during winter plowing operations, on Forest Development Road 150 (FDR-150), to reduce big game mortality that could draw bald eagles, wolves and grizzly (in spring) to the road corridor and increase mortality.
3. Daily remove vehicular killed deer and elk from road rights-of-way within the permit area and along roadways used for access or hauling ore (FDR 150, 150A and new roads built for the project). Road kills would be moved at least 50 feet beyond the right-of-way clearing and further if necessary to be out of sight from the road, During construction and the first three years of full operation, ASARCO would monitor the number of vehicular killed deer and elk on these roads and report findings annually. They would also monitor and report (within 24 hours) all grizzly bear, bald eagle and wolf mortalities within the permit area. If a T&E species mortality occurs, and it is determined that the carrion was a contributing factor, then ASARCO would start hauling the dead deer and elk to a dumping location approved by Montana Fish, Wildlife and Parks (MFWP). After five years of full operation the Forest Service, in consultation with the U.S. Fish and Wildlife Service, will do a reevaluation of mortality risk to bald eagles, wolf, and grizzly bear to determine the need to continue this mitigation measure.
4. Construct power lines following criteria outlined by Olendorff, Miller and Lehman (1981) to reduce potential for electrocution of bald eagles.
5. Work with other mines operating in the area (ie. Noranda) to fund a MFWP public information and education program to aid in grizzly bear conservation. This would be the same program as required in the Record of Decision for the Montanore Project (9/93), not an additional one. The program would be funded for 5 years and then evaluated for need to continue as is or modify to better benefit the grizzly. If ASARCO is unable to find a partner for this measure, they will be responsible to fully fund the program. The purposes are to reduce mortality risk through (1) education of the public on the law and penalty for violation (illegal killing of T&E species); (2) education of hunters on bear

identification to reduce accidental killing of grizzly and (3) educate the public on biological needs of the grizzly so that an understanding exists that reduces "social jeopardy".

6. Work with other mines operating in the area (ie. Noranda) to fund a local MFWP law enforcement position for the life of the mine. This would be the same position as required in the Record of Decision for the Montanore Project (9/93), not an additional one. If for some reason the Montanore project does not proceed, ASARCO will be responsible to fully fund the position.
7. Use bear-proof containers to hold attractants and remove them in a timely manner (weekly unless a problem develops, then daily).
8. Not use clover in the seed mix used on any disturbed area during active operations, to reduce grizzly/human encounters caused by bears being drawn to clover sites.
9. Prohibit employees from carrying firearms within the permit area, except for security officers and other designated personnel.
10. Prohibit employees from feeding wildlife, especially bears, as food becomes attractants to bears.

**B. To maintain habitat effectiveness for Threatened and Endangered species, ASARCO will:**

1. Secure or protect (through conservation easement, including road closures, or acquisition) from development (including but not limited to housing, motorized access) and use (timber harvest, adverse grazing, mining) replacement habitat to compensate for acres lost by physical alterations, or acres with reduced habitat availability due to disturbance. Replacement acres for Alternative Five are: 2350. The "in kind" replacement acres must provide 2.61 early (6133.5 total), 1.61 late (3783.5 total) or an overall 2.11 habitat unit value (4958.5 total overall HUs). Replacement habitat will be provided using the following schedule:

Activity Area	Replacement Acres	Timing
Exploration Adit	53	Prior to Construction
Tailings & AF	806	Prior to Construction
Mill & AF	248	Prior to Construction
Ventilation Adit	10	Prior to Construction
New Roads	102	Prior to Construction
Existing Roads (Reconstruction)	565	Prior to Reconstruction
Existing Roads (Increased Influence)	566	Prior to Operations
Total Alternative 5	2350	Prior to Operations

AF = Associated Features

This schedule will have all replacement habitat (except ventilation adit) in place prior to starting full operations (end of year 5).

Either fee title or conservation easements are acceptable. Either method must be, at a minimum, for the life of the mine (35 years) plus a reasonable recovery period following mine reclamation. Bear

generations are between 7 and 10 years (per Wayne Kasworm personal communicaiton 7-15-98) and a 'reasonable' period would be 2 bear generations. This means a minmum of about 50 years is reasonable. Fee title lands would be turned over to the Forest Service. First choice for replacement habitat is within the disturbed BMUs. If adequate replacement acres are not available in those BMUs then acres may be found in other BMUs within the southern portion of the Cabinet Mountains. See the attached Replacement Habitat Assessment for acceptable lands to consider (**Not available to public until replacement habitat mitigation completed**).

2. Fund habitat enhancement, commensurate with loss of habitat effectiveness. Enhancements include, but are not limited to, prescribed fire to restore whitebark pine, road closures and obliterations. Enhancements are preferred in the affected BMU, however if opportunities are not available, then work may be done in adjacent BMUs.

BMU	% H.E. Change	Acres H.E. Mitigation
4	+1.0	0
5	- 1.1	348
6	- 0.3	136

**C. To reduce mortality risk and maintain habitat effectiveness for Threatened and Endangered species, ASARCO will fully fund the following road closures:**

1. Close the following roads prior to the start of ASARCO construction activities (see maps):

Road Number	Road Name	Closure Miles	Closure Period	Closure Method
2285	Orr Creek	1.61	Yearlong	Barrier
2741X	unnamed	0.18	Yearlong	Barrier
150	Rock Creek	2.92	Yearlong	Gate *
2741A	unnamed	0.47	Yearlong	Barrier

\* North 0.42 miles will be obliterated, South 2.5 miles will be gated (see map)

**D. To mitigate for habitat constriction which reduces the potential to achieve CUE grizzly bear recovery goals (by impacting individuals in the Cabinet Mountains), ASARCO will:**

1. Secure or protect (through conservation easement, including road closures or acquisition) from development (including but not limited to housing, motorized access) and use (mining, timber harvest, adverse grazing) replacement habitat that will enhance the north to south habitat corridor in the Cabinet Mountains. These lands are in addition to those identified under mitigation item B-1. See the attached Corridor Replacement Habitat Assessment for acceptable lands to consider (**Not available to public until corridor replacement habitat mitigation completed**) Either fee title or

conservation easements are acceptable, Either method must be, at a minimum, for the life of the mine (35 years) plus a reasonable recovery period following mine reclamation. Bear generations are between 7 and 10 years (per Wayne Kasworm personal communicaiton 7-15-98) and a 'reasonable' period would be 2 bear generations. This means a minnum of about 50 years is reasonable. Fee title lands would be turned over to the Forest Service.

**E. To assure compliance with the T&E species mitigation plan ASARCO will:**

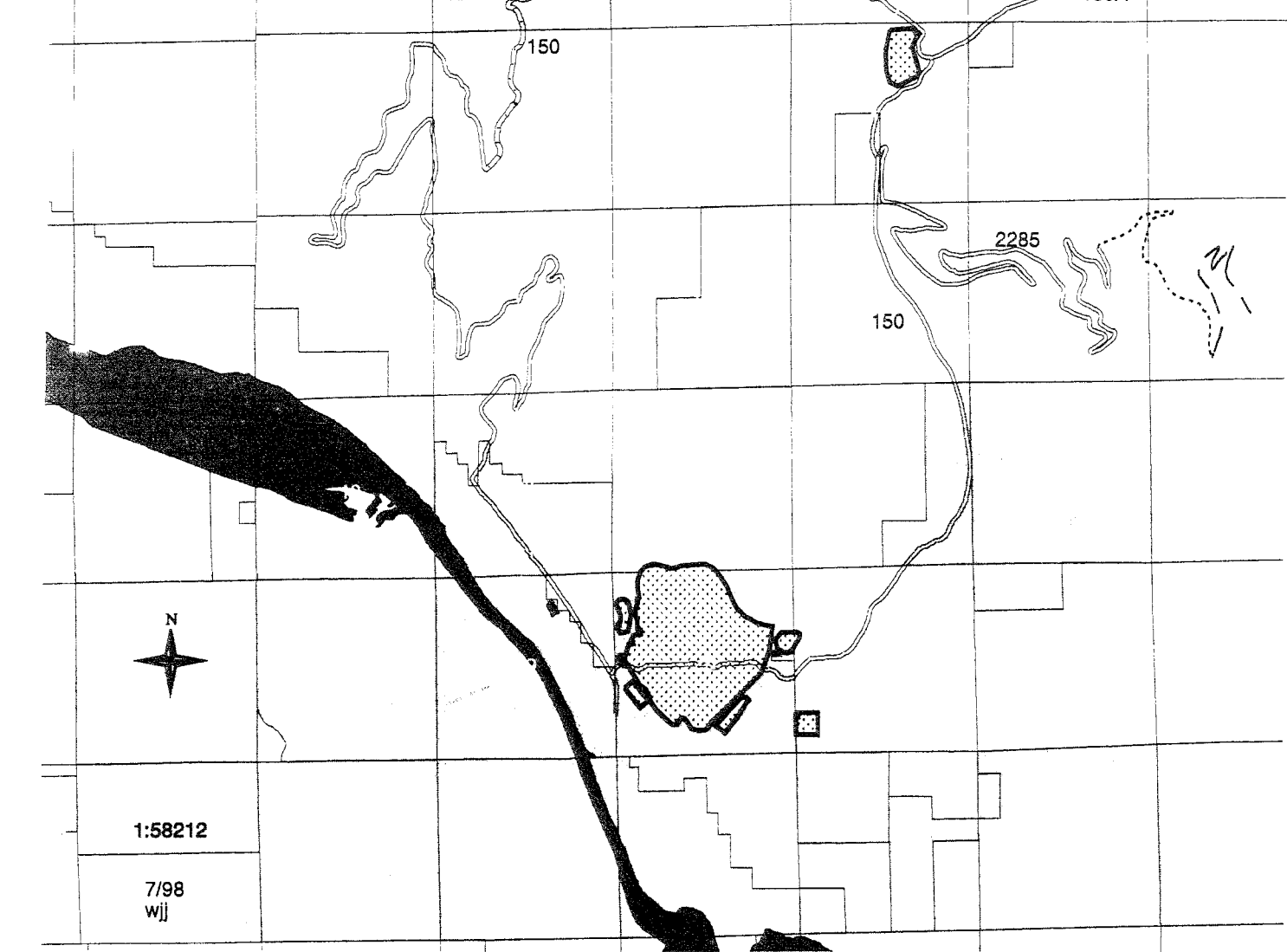
1. Establish a trust fund and/or post a bond, prior to initiating any activities, to cover the mitigation plan implementation costs. The amount in the fund or posted in a bond will be comensurate with projected work and associated required mitigation items (see table below) (initial cost estimates, 1997 dollars, are about \$9.7 million over the life of the mine, actual amount will be adjusted for inflation).

Estimated Deposit Summary:

Year	Deposit
1	\$ 3,756,850
3	\$ 2,533,400
5	\$ 1,177,000
15	\$ 2,300,000

# ASARCO Rock Creek Mine: Mitigations (by Alternative)

	Proposed gated road (Alt.5)
	Proposed gated road (Alt. 3&4)
	Proposed obliterated road (Alt 5)
	Proposed barriered road (Alts 3-5)
	Proposed gated road (Alts 3-5)
	Existing gated road
	Existing open road
	Alt. 5 Facility Site
	Private land
	Water
150	Road Number



1:58212

7/98  
wjj

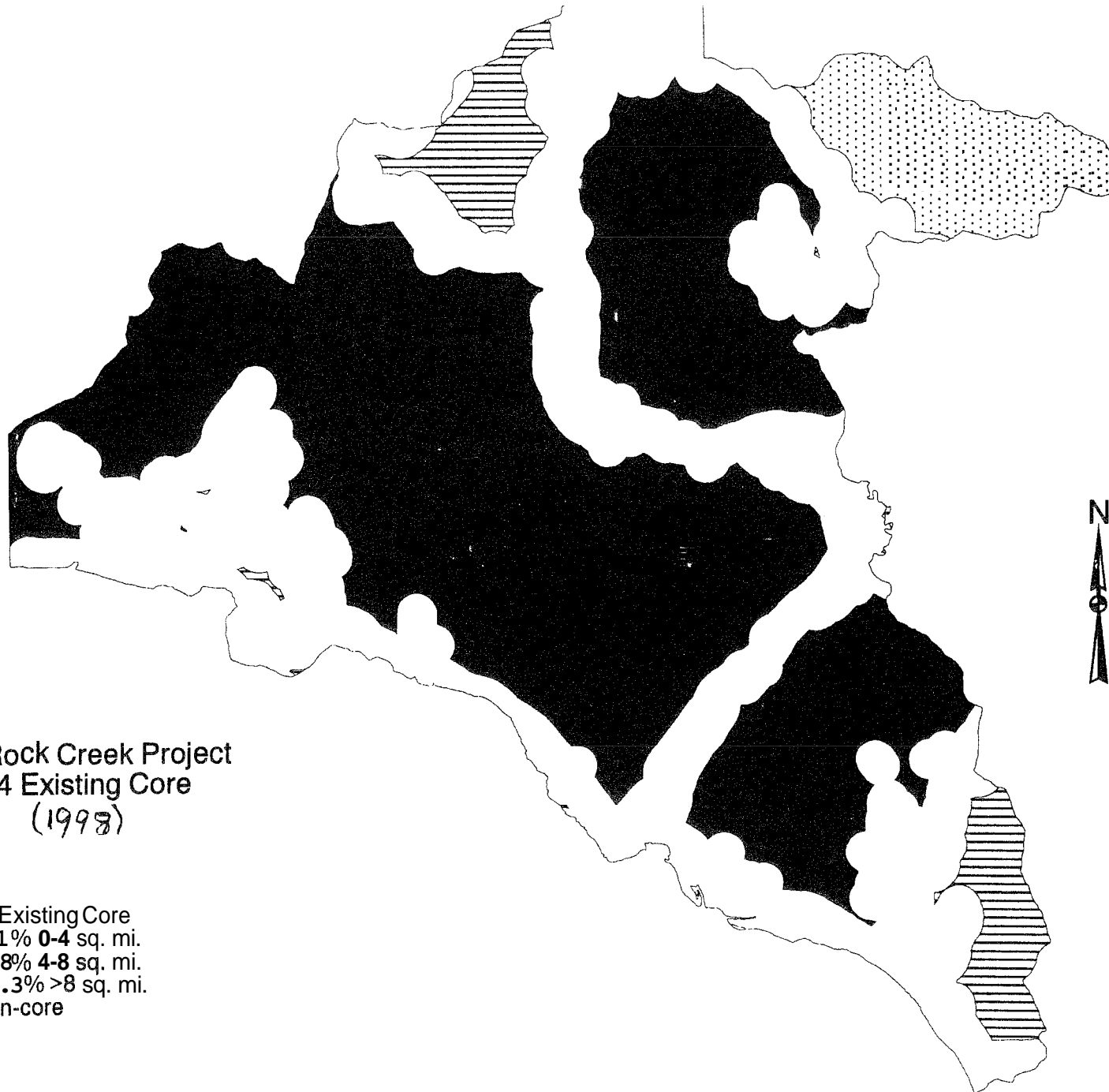
## **APPENDIX 6**

### **CORE HABITAT ANALYSIS MAPS (1998,1999,2000)**





**BMU 4**  
**BMU 5**  
**BMU 6**

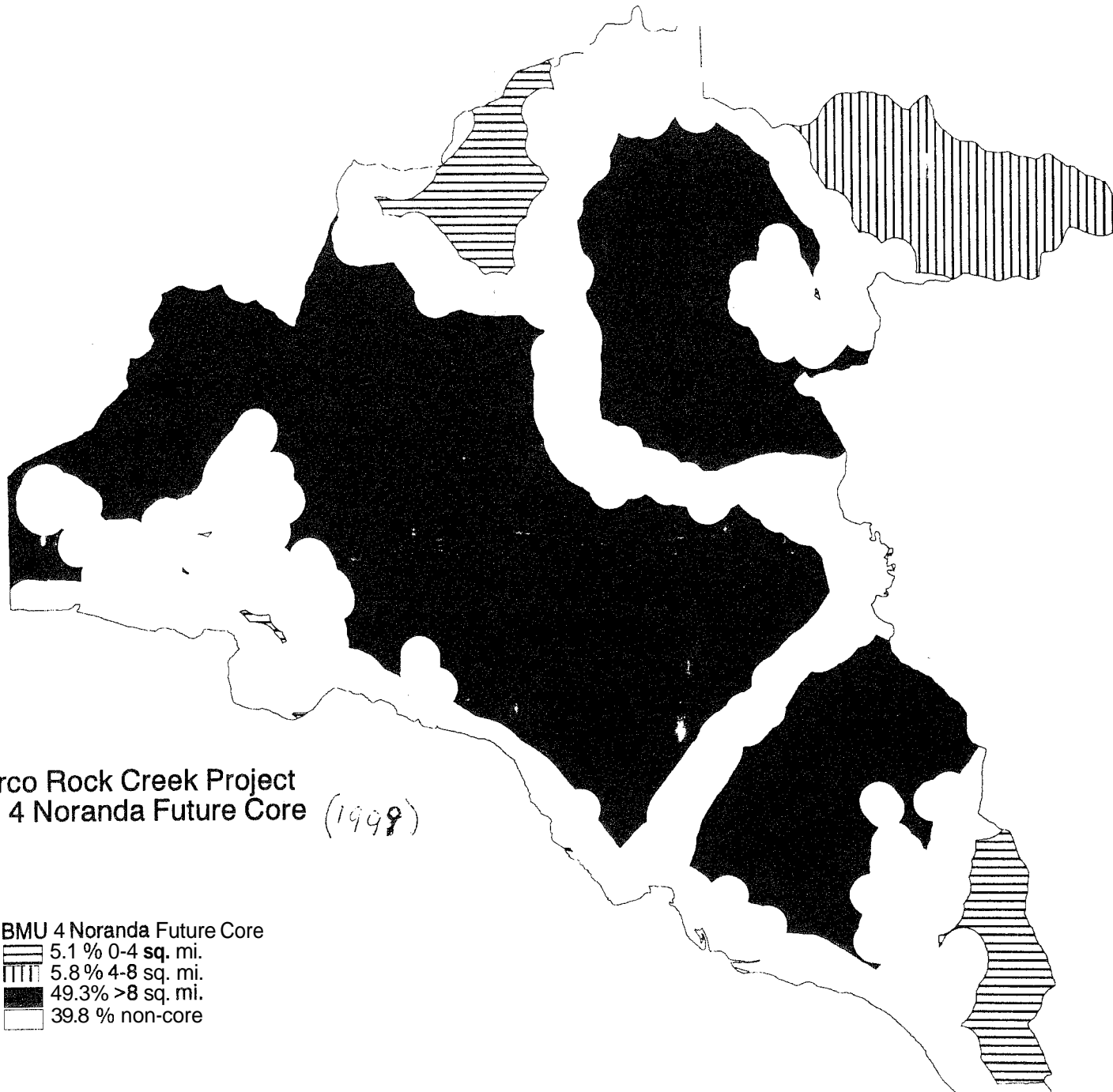
### **MOVING WINDOWS ANALYSIS MAPS (OPEN AND TOTAL ROUTES - 1998, 2000)**

**BMU 4**  
**BMU 5**  
**BMU 6**







Asarco Rock Creek Project  
BMU 4 Existing Core  
(1998)

	5.1% 0-4 sq. mi.
	5.8% 4-8 sq. mi.
	49.3% >8 sq. mi.
	non-core

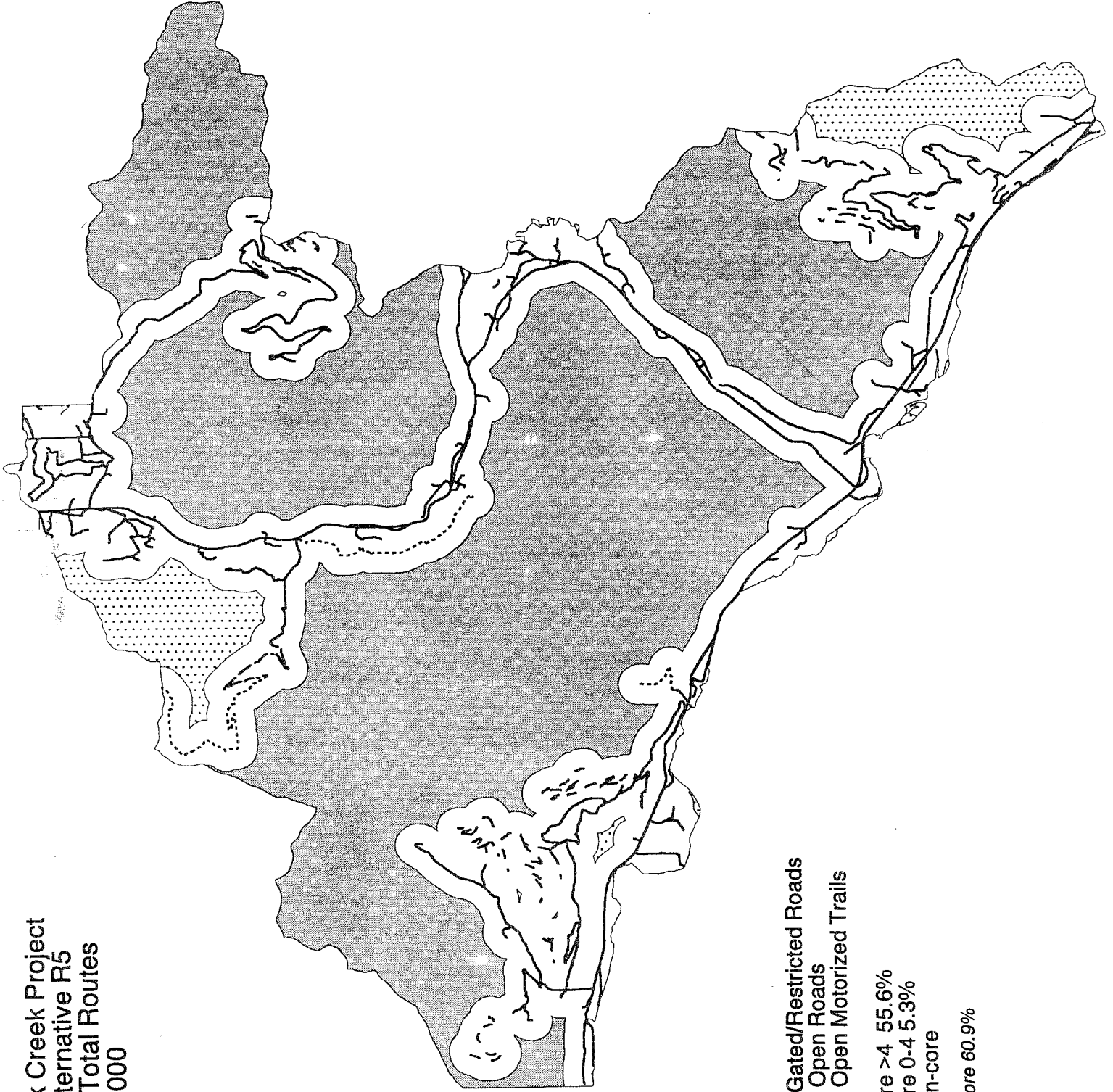


Asarco Rock Creek Project  
BMU 4 Noranda Future Core (1999)

BMU 4 Noranda Future Core	
	5.1 % 0-4 sq. mi.
	5.8 % 4-8 sq. mi.
	49.3 % >8 sq. mi.
	39.8 % non-core



Asarc  
 Asarc Creek Project  
 BMU 4 Alternative R5  
 Core with Total Routes  
 2000

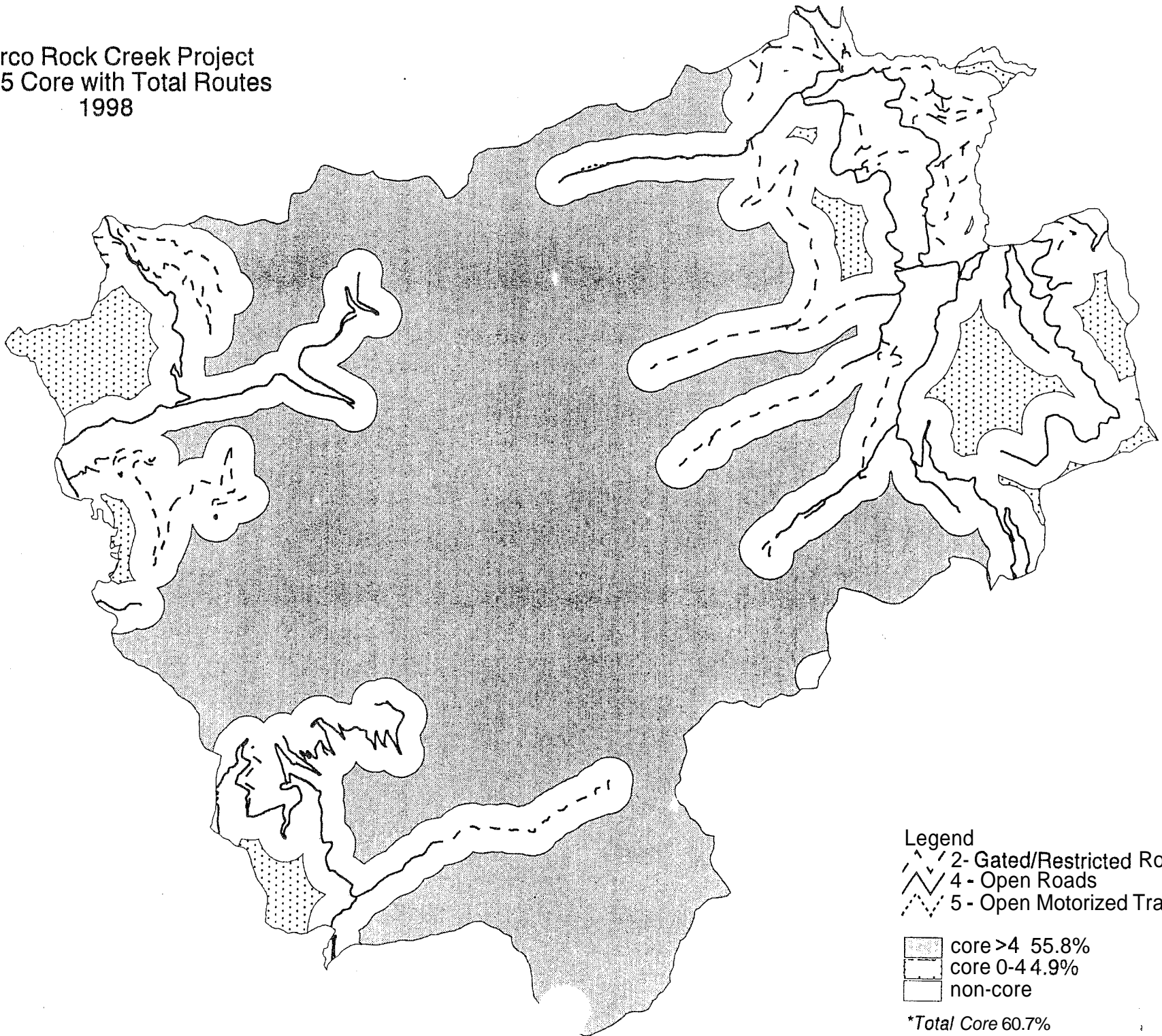


- Legend
- / — 2- Gated/Restricted Roads
  - / — / — 4 - Open Roads
  - / — / — / — 5 - Open Motorized Trails

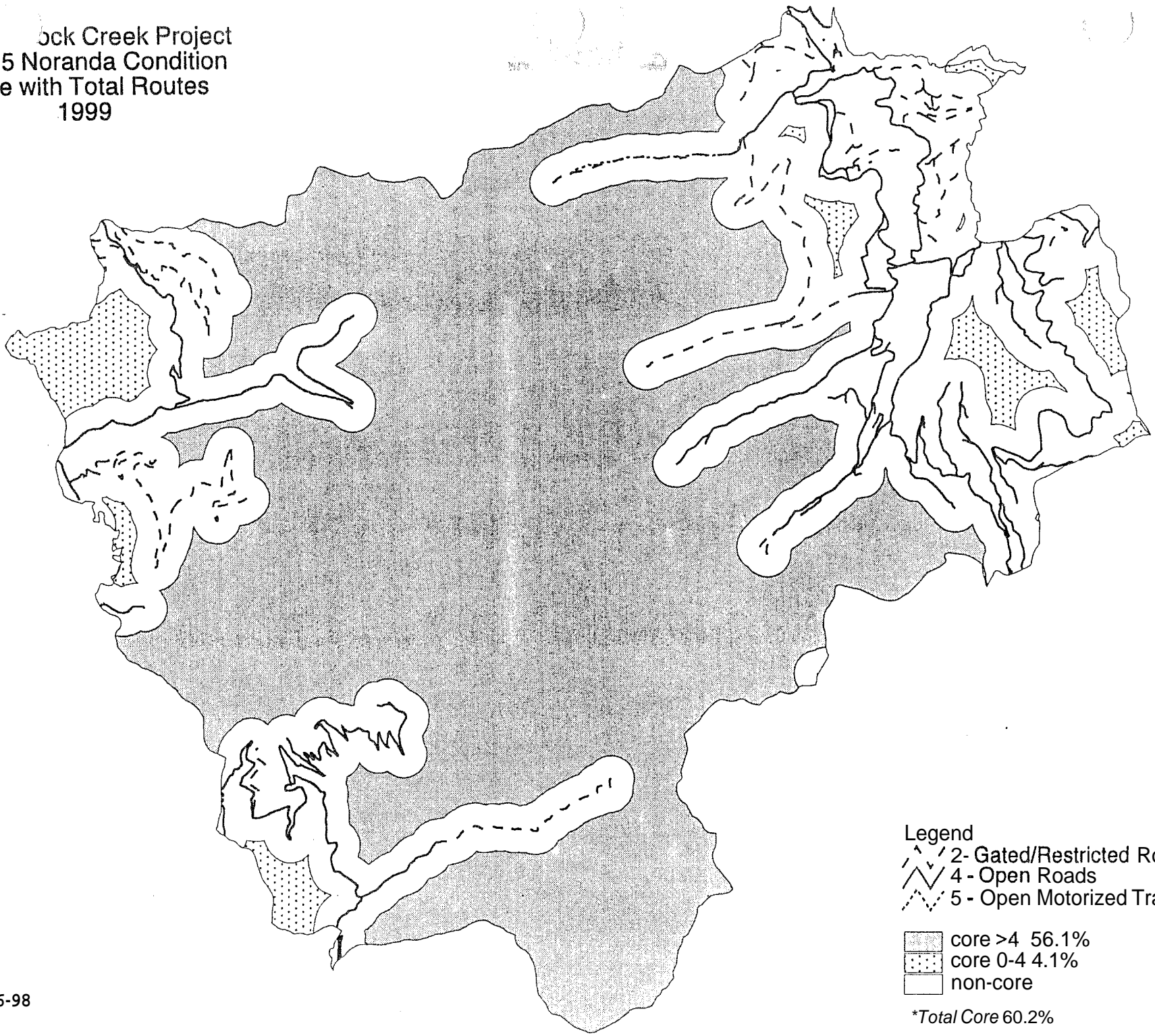
Dark Stippled	core >4	55.6%
Light Stippled	core 0-4	5.3%
White	non-core	

\*Total Core 60.9%




Asarco Rock Creek Project  
BMU 5 Core with Total Routes  
1998






Asarc Black Creek Project  
BMU 5 Noranda Condition  
Core with Total Routes  
1999



Legend

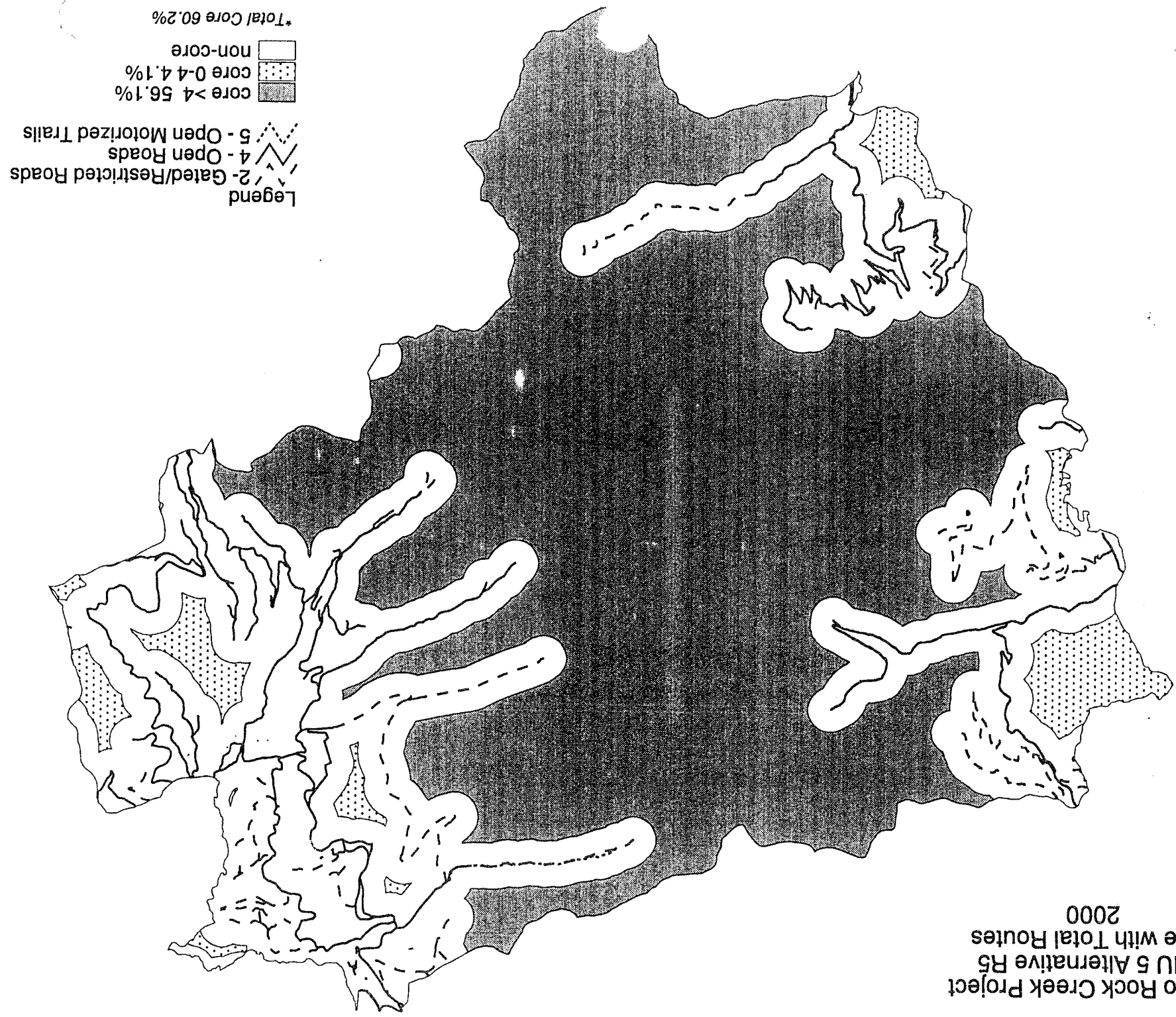
-  2 - Gated/Restricted Roads
-  4 - Open Roads
-  5 - Open Motorized Trails

-  core >4 56.1%
-  core 0-4 4.1%
-  non-core

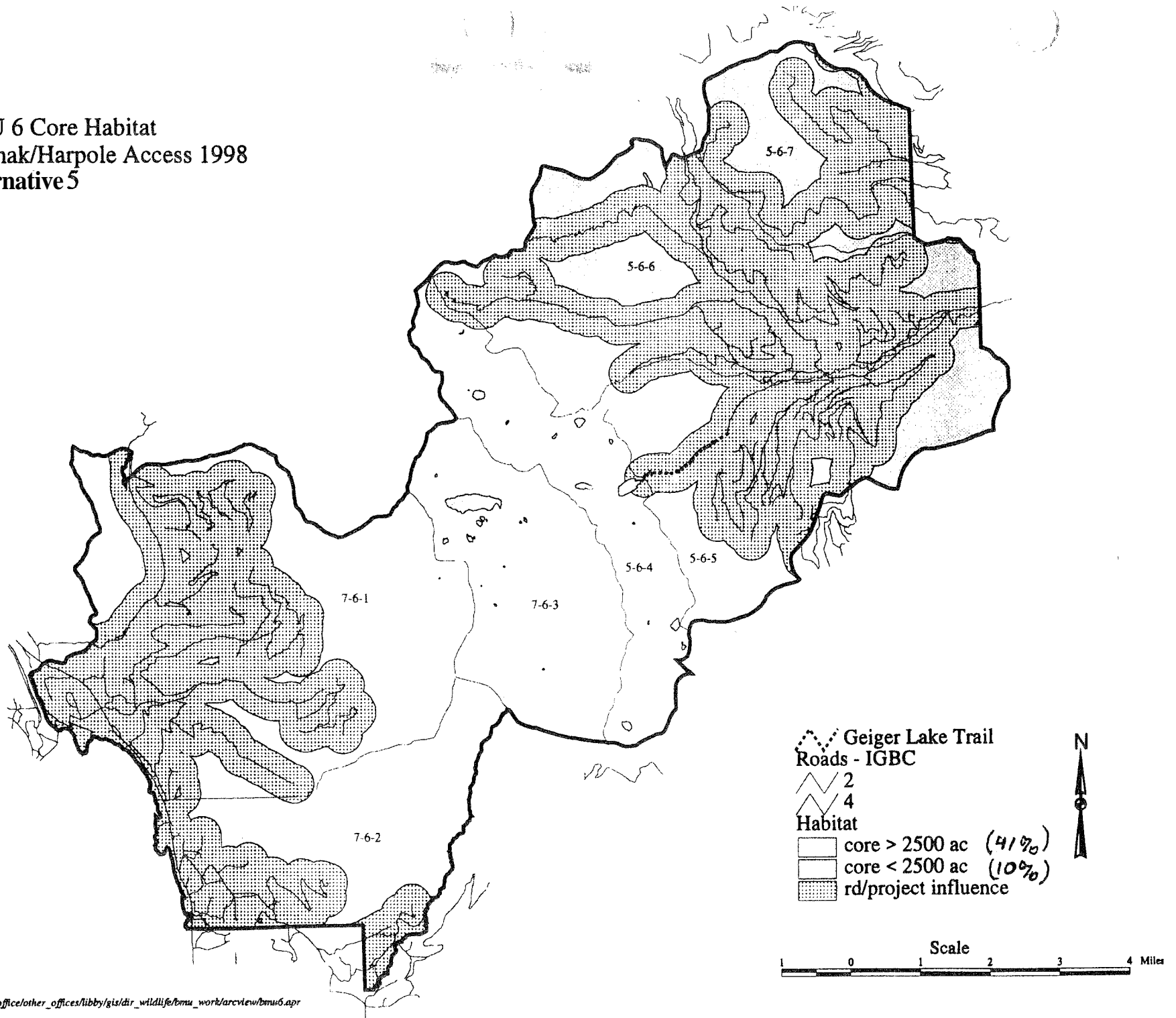
\*Total Core 60.2%

Asarco Rock Creek Project  
 BMU 5 Alternative R5  
 Core with Total Routes  
 2000

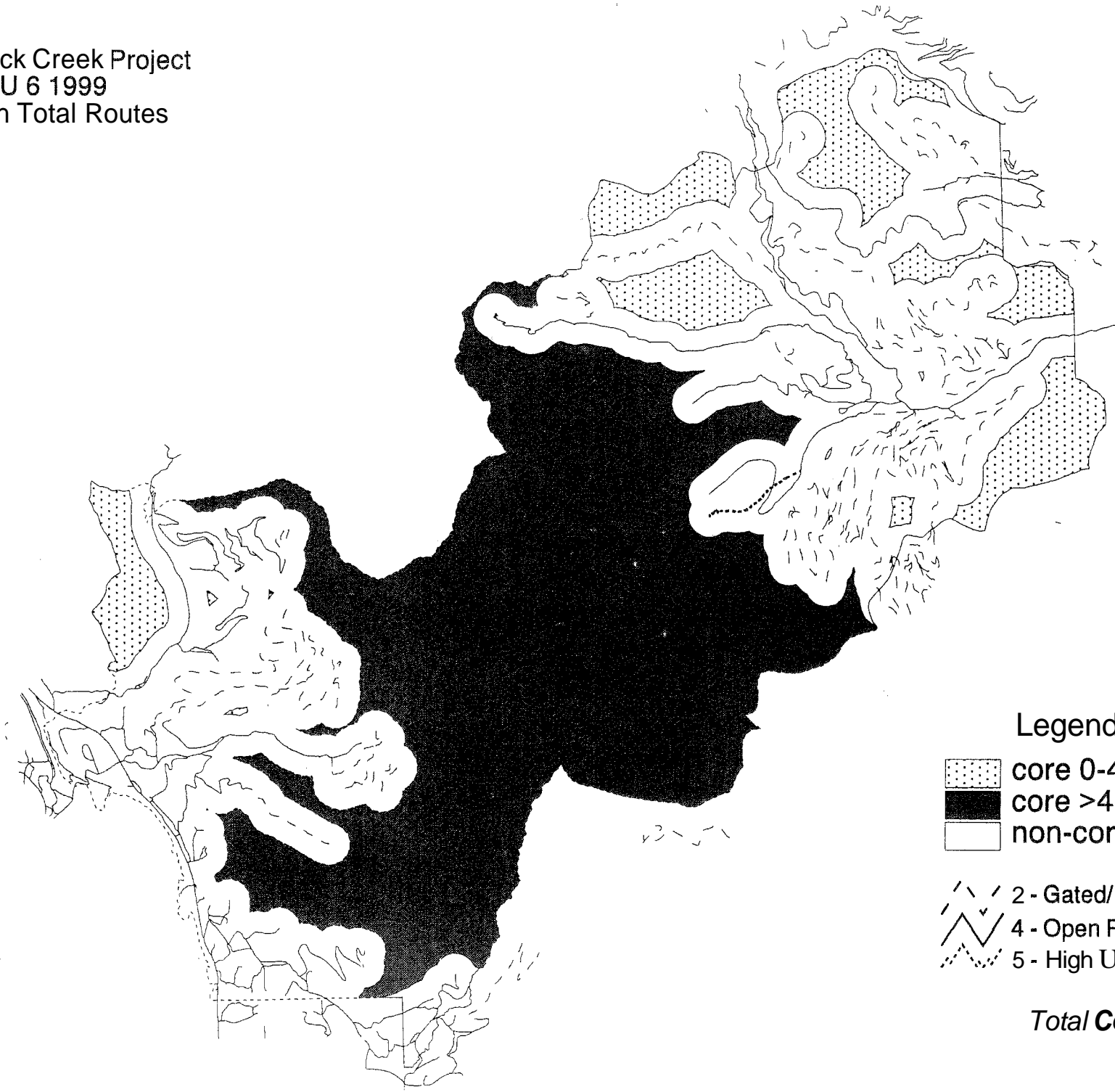


- Legend
- 2- Gated/Restricted Roads
  - 4- Open Roads
  - 5- Open Motorized Trails
  - core >4 56.1%
  - core 0-4 4.1%
  - non-core
- \*Total Core 60.2%




BMU 6 Core Habitat  
 Skranak/Harpole Access 1998  
 Alternative 5






Asarco Rock Creek Project  
BMU 6 1999  
Core with Total Routes



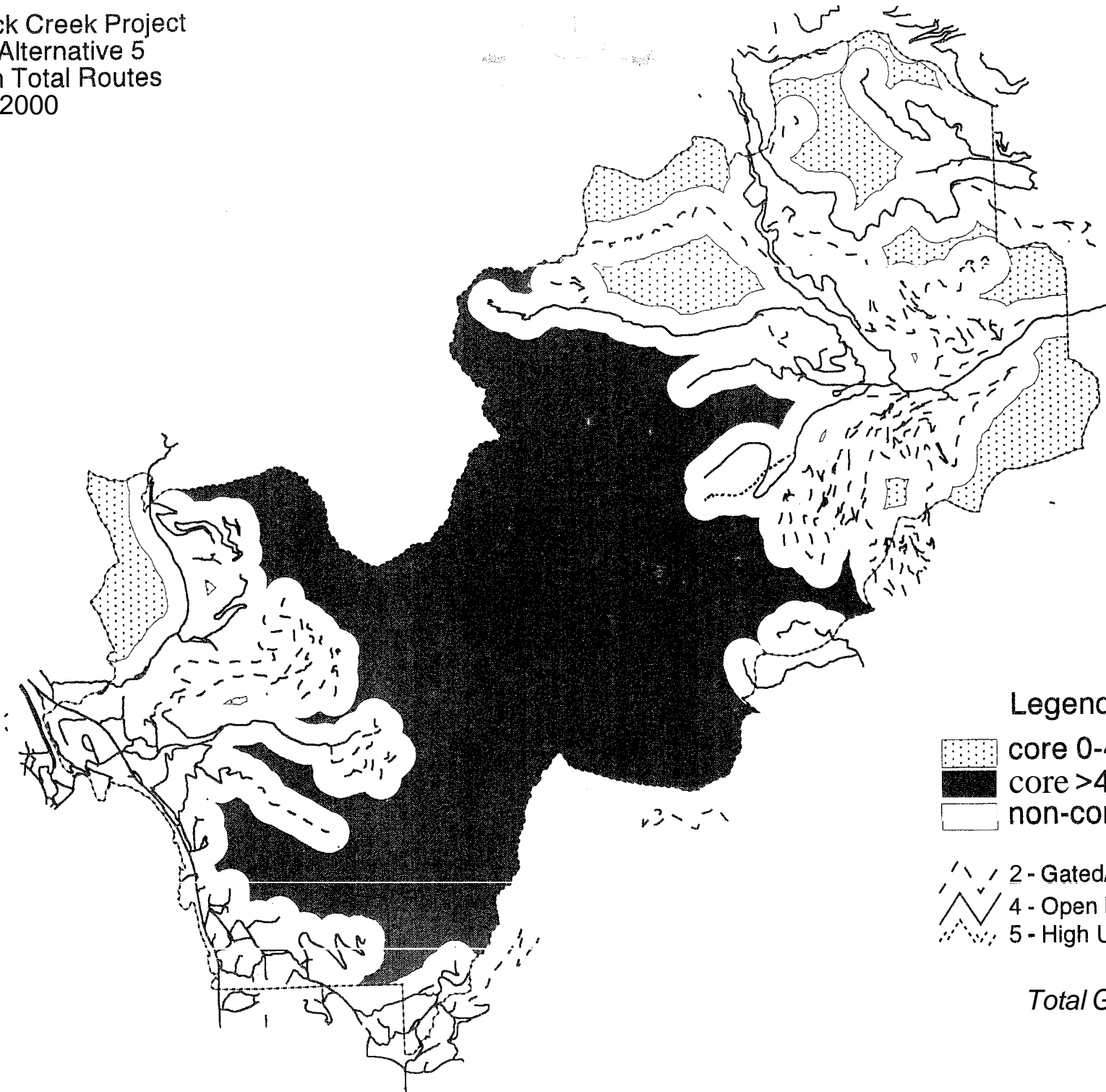
Legend

-  core 0-4 10.1%
-  core >4 40.4%
-  non-core




-  2 - Gated/Restricted Roads
-  4 - Open Roads
-  5 - High Use Trails




**Total Core 50.5%**

Asarc Black Creek Project  
BMC Alternative 5  
Core with Total Routes  
2000



Legend

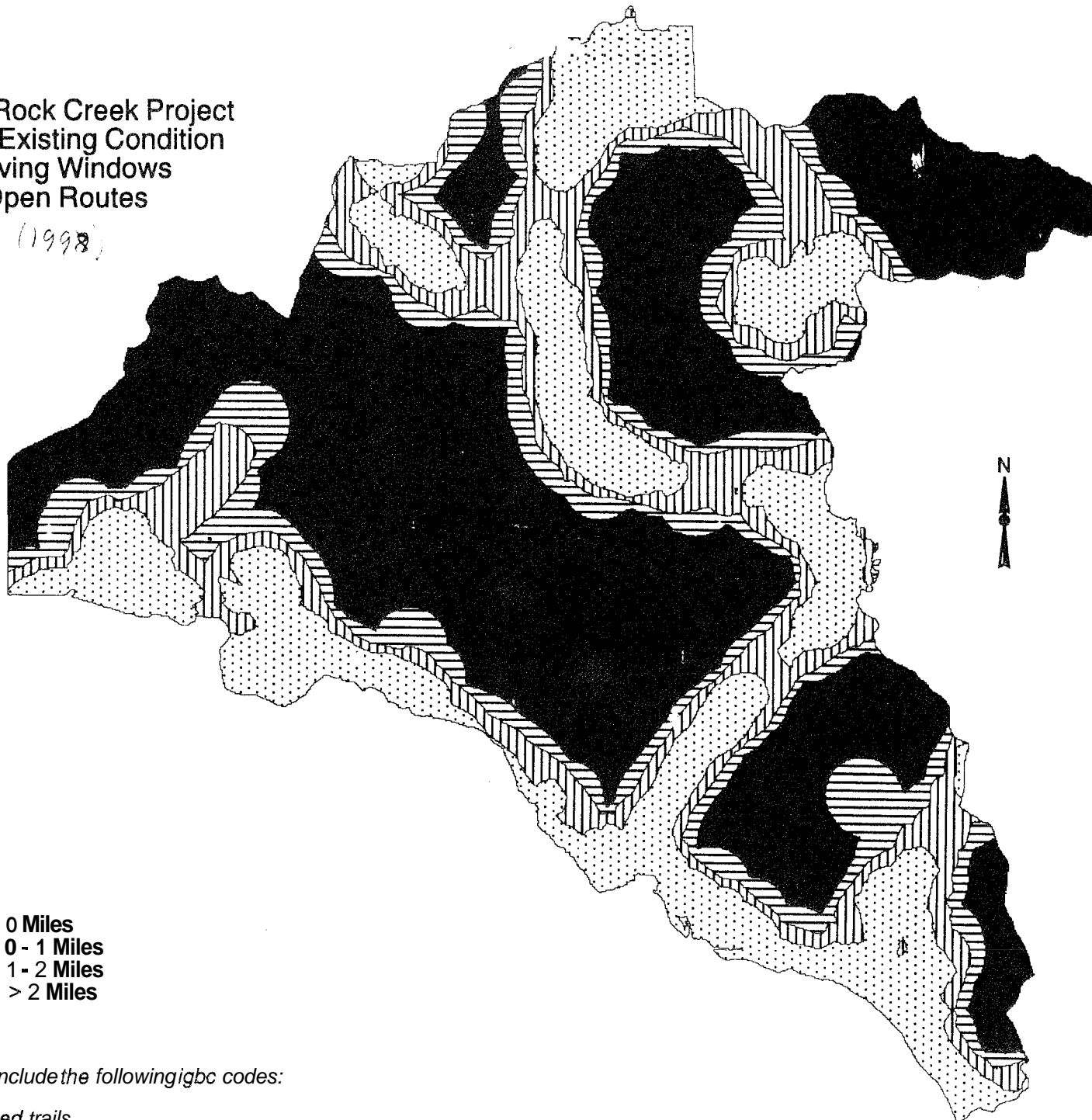
-  core 0-4 9.8%
-  core >4 40.1%
-  non-core

-  2 - Gated/Restricted Roads
-  4 - Open Roads
-  5 - High Use Trails





Total Gore 49.9%

Asarco Rock Creek Project  
 BMU 4 Existing Condition  
 Moving Windows  
 Open Routes

(1998)



**Legend**

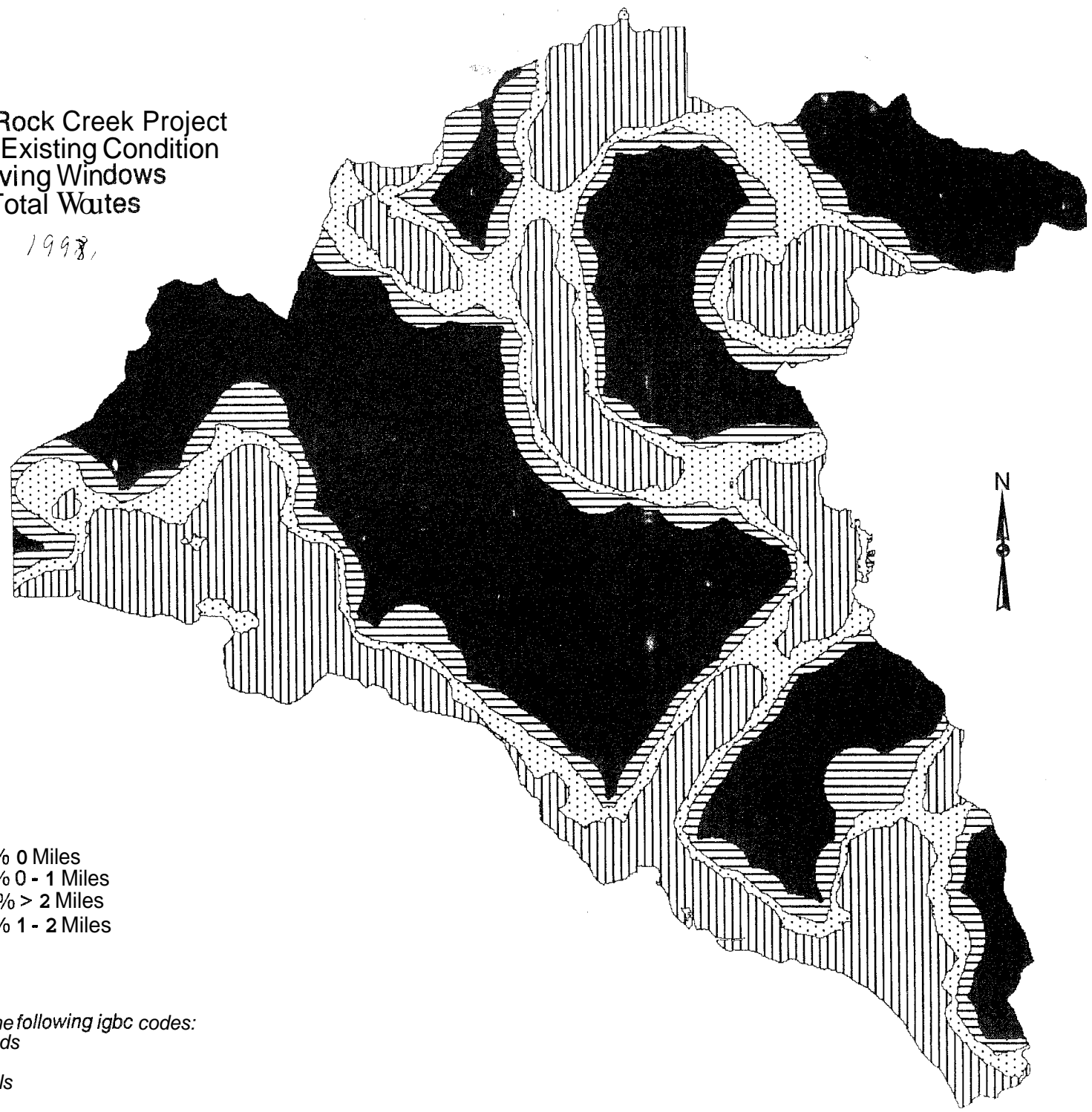
-  46.9 % 0 Miles
-  14.1 % 0 - 1 Miles
-  15.0 % 1 - 2 Miles
-  24.0 % > 2 Miles

\* Open Routes include the following igbc codes:  
 4 - open roads  
 5 - open authorized trails







Asarco Rock Creek Project  
BMU 4 Existing Condition  
Moving Windows  
Total Waives

1998,

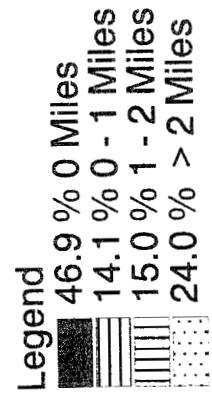
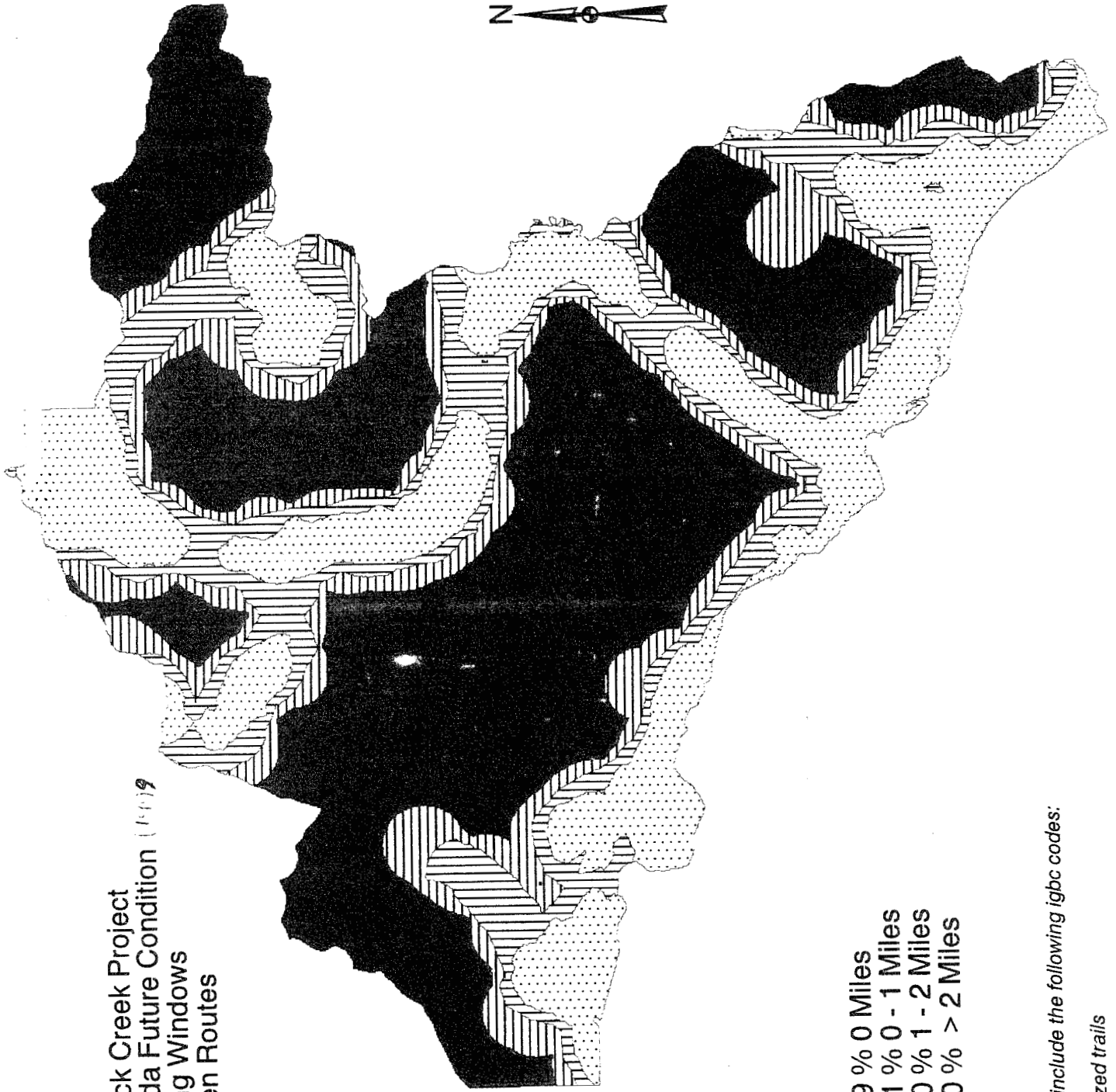


Legend

	43.9% 0 Miles
	13.7% 0 - 1 Miles
	14.3% > 2 Miles
	28.1% 1 - 2 Miles

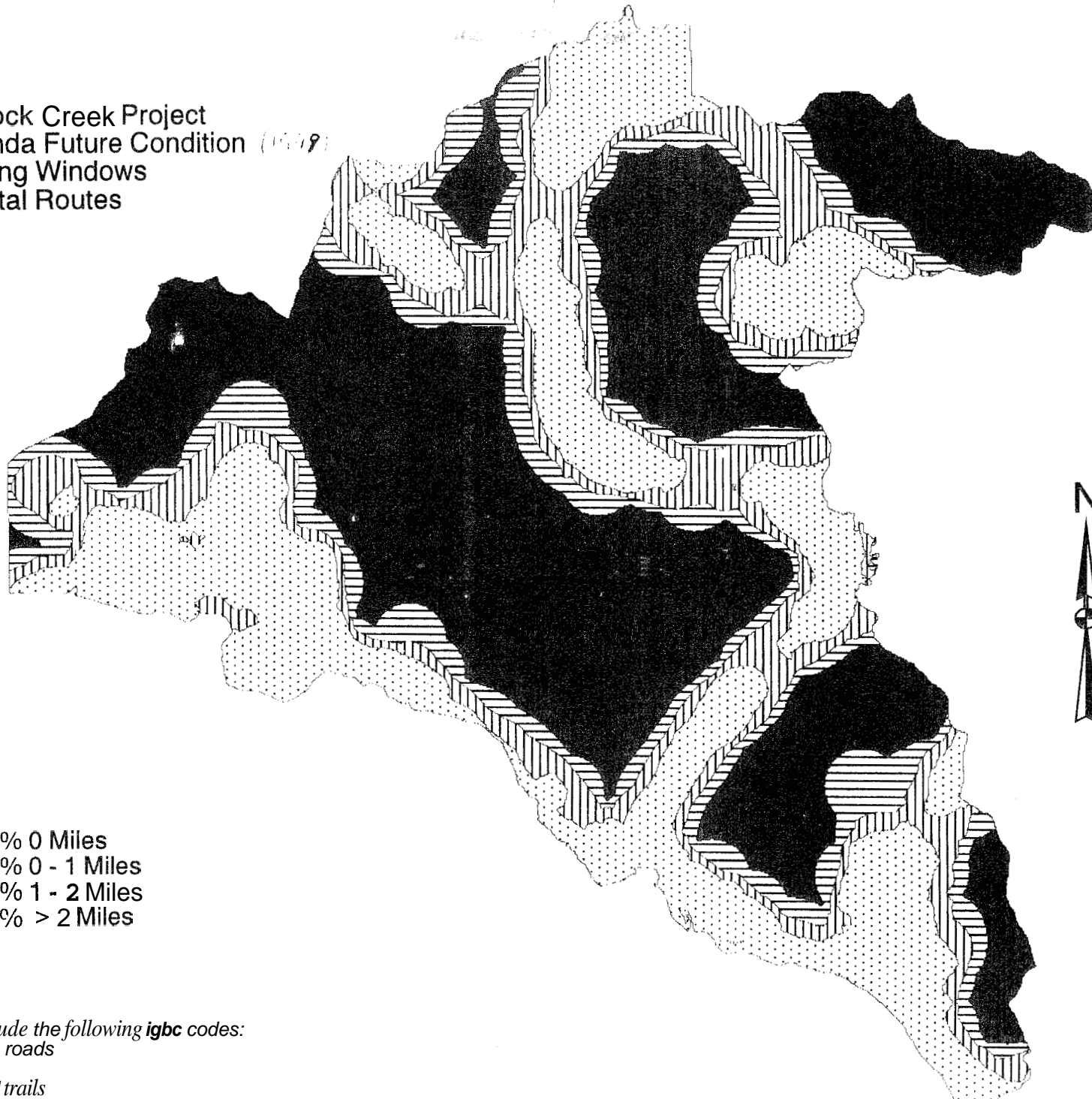
Total Routes include the following igbc codes:  
2 - gated/restricted roads  
4 - open roads  
5 - open motorized trails

Asarco Rock Creek Project  
 IMU 4 Noranda Future Condition (1999)  
 Moving Windows  
 Open Routes







\* Open Routes include the following igbc codes:  
 4 - open roads  
 5 - open motorized trails

Asarco Rock Creek Project  
BMU 4 Noranda Future Condition (1998)  
Moving Windows  
Total Routes

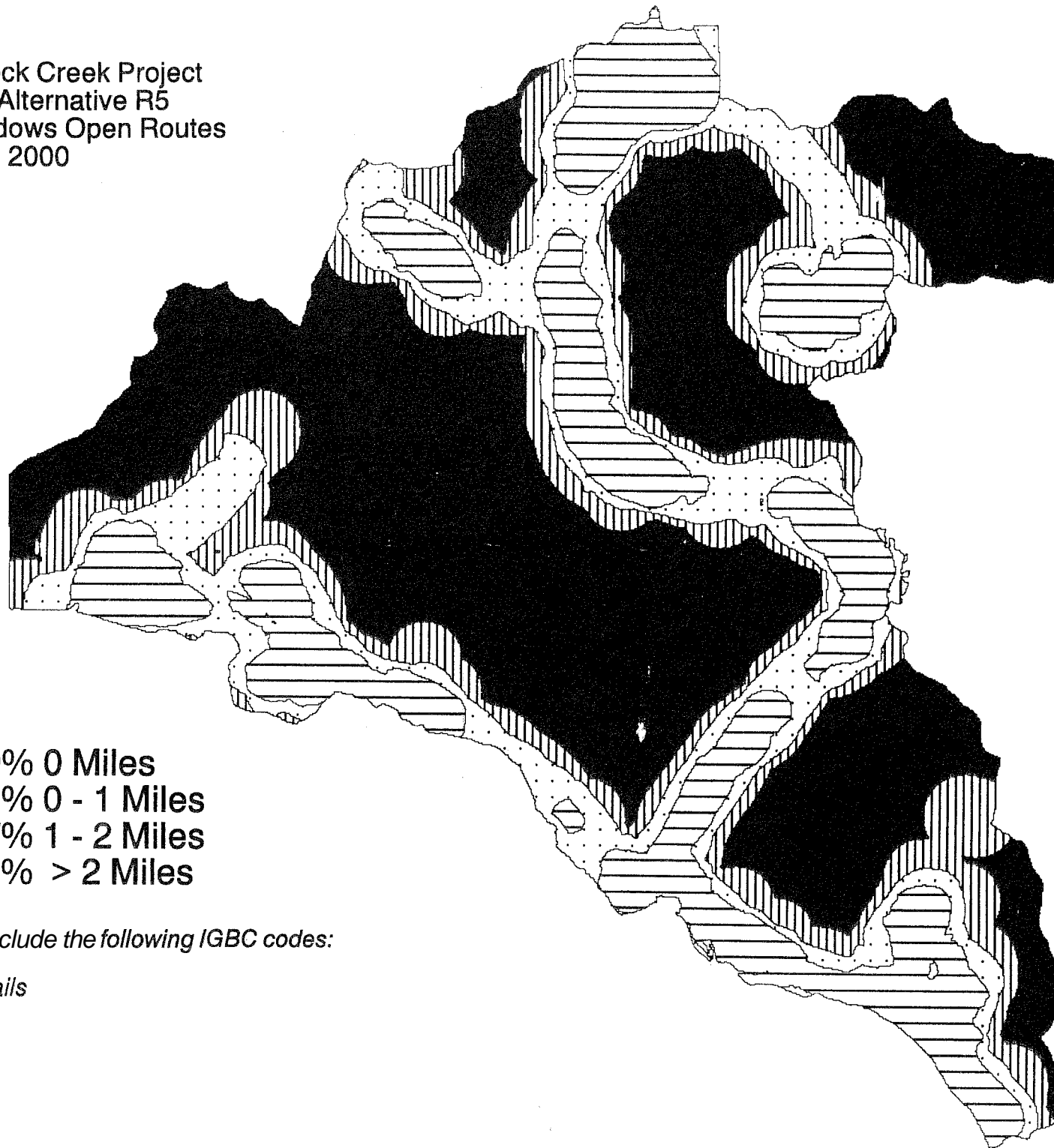


Legend





	43.9 % 0 Miles
	13.7 % 0 - 1 Miles
	14.3% 1 - 2 Miles
	28.1 % > 2 Miles

\* Total Routes include the following **igbc** codes:  
2 - gated/restricted roads  
4 - open roads  
5 - open motorized trails

Asarco Rock Creek Project  
BMU 4 Alternative R5  
Moving Windows Open Routes  
2000

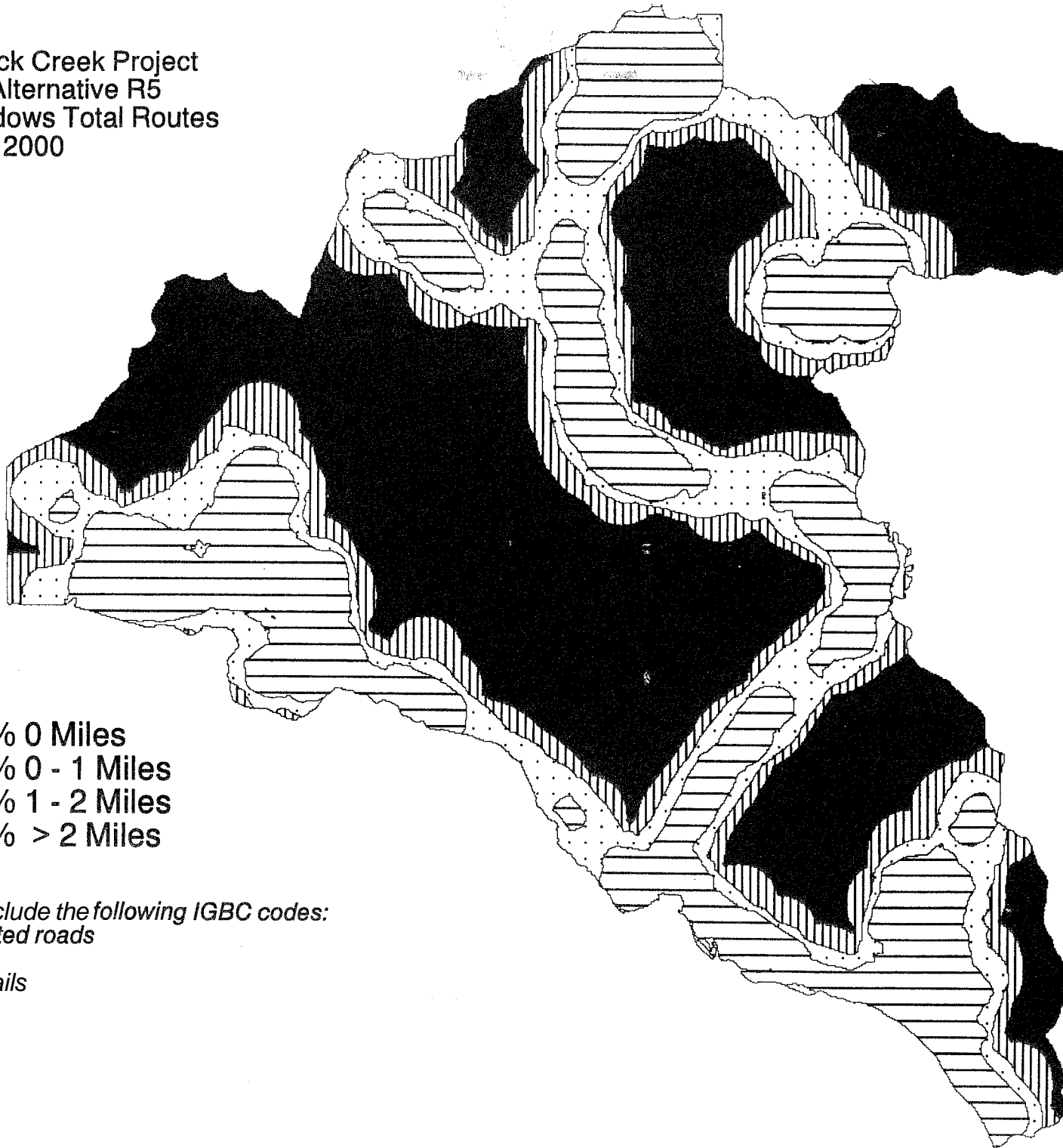


**Legend**





	47.9% 0 Miles
	14.9% 0 - 1 Miles
	15.7% 1 - 2 Miles
	21.5% > 2 Miles

*Open Routes include the following IGBC codes:*  
4 - open roads  
5 - motorized trails

Asarco Rock Creek Project  
BMU 4 Alternative R5  
Moving Windows Total Routes  
2000

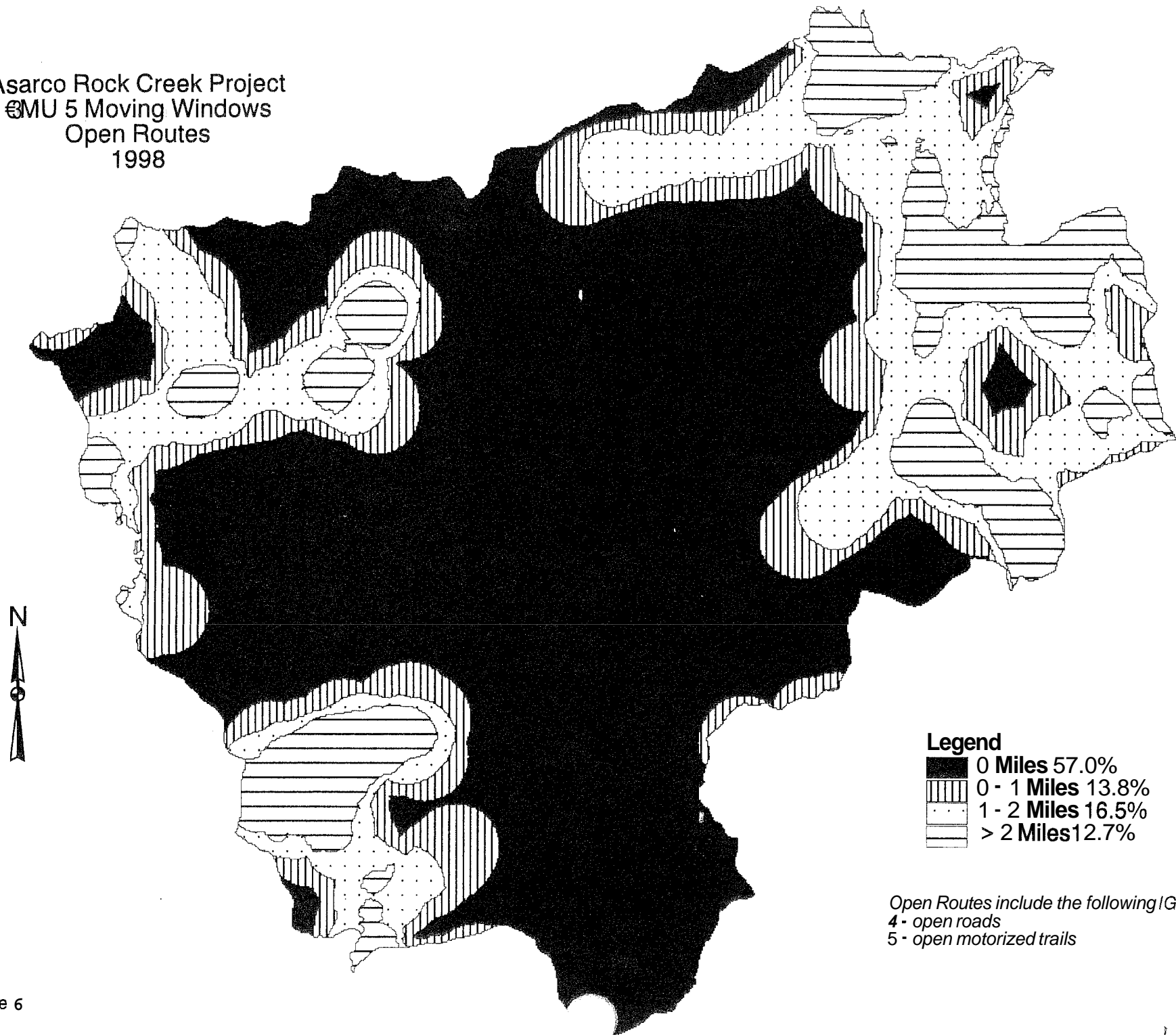


**Legend**

-  44.3% 0 Miles
-  14.2% 0 - 1 Miles
-  15.8% 1 - 2 Miles
-  25.7% > 2 Miles

Total Routes include the following IGBC codes:  
2 - gated/restricted roads  
4 - open roads  
5 - motorized trails

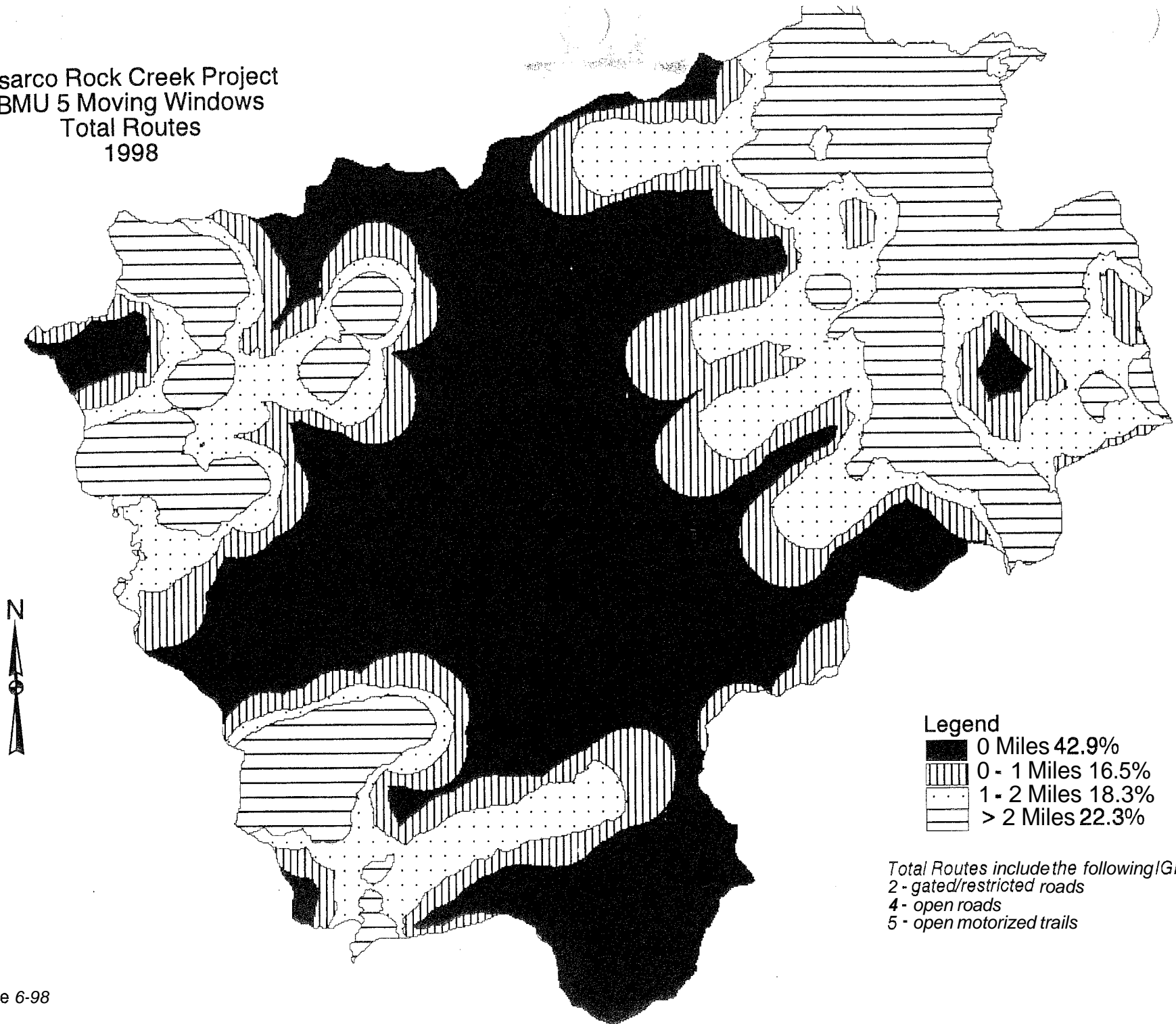
Asarco Rock Creek Project  
MU 5 Moving Windows  
Open Routes  
1998



**Legend**  
0 Miles 57.0%  
0 - 1 Miles 13.8%  
1 - 2 Miles 16.5%  
> 2 Miles 12.7%

Open Routes include the following IGBC codes:  
4 - open roads  
5 - open motorized trails

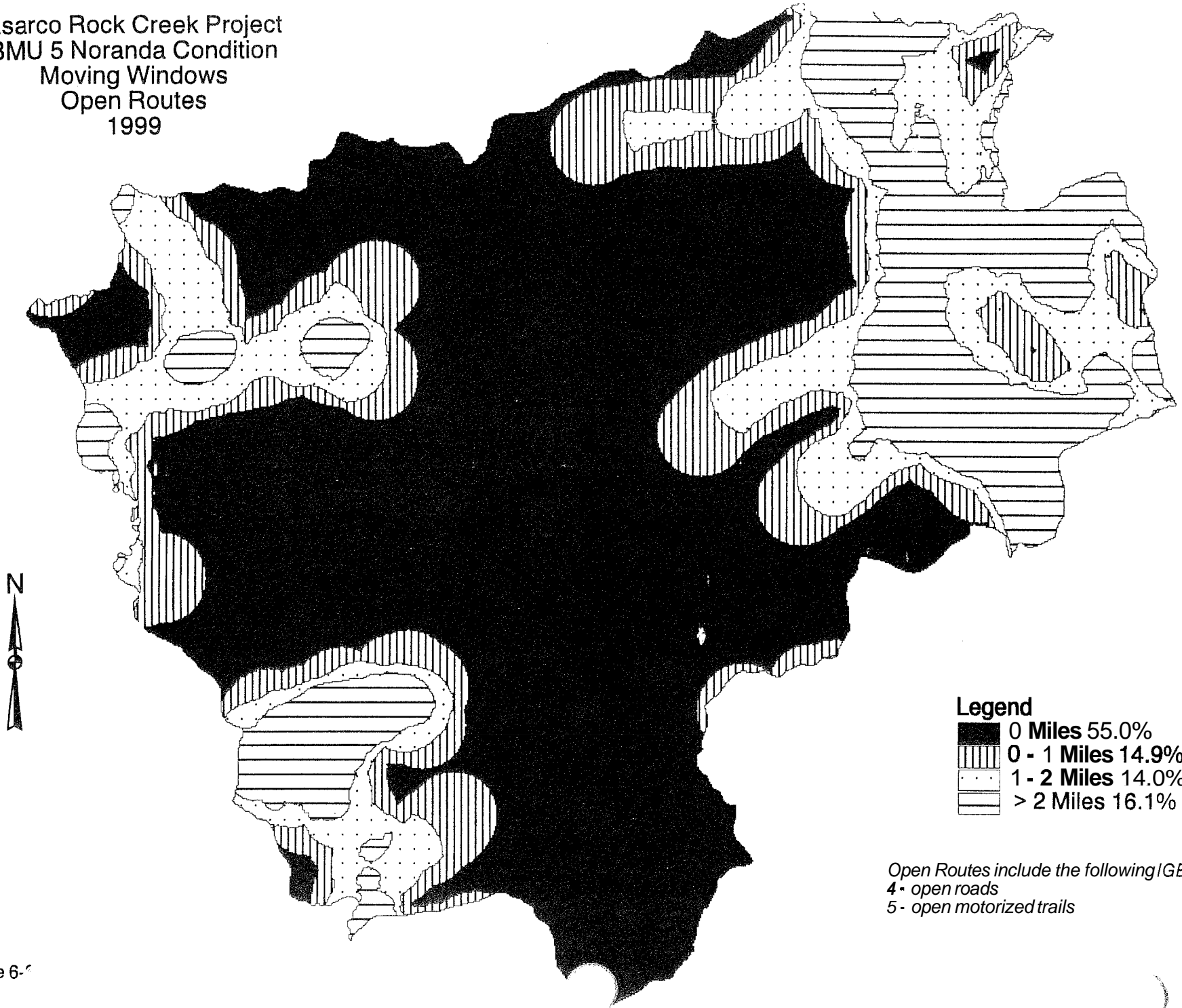
Asarco Rock Creek Project  
BMU 5 Moving Windows  
Total Routes  
1998



**Legend**  
0 Miles 42.9%  
0 - 1 Miles 16.5%  
1 - 2 Miles 18.3%  
> 2 Miles 22.3%

Total Routes include the following IGBC codes:  
2 - gated/restricted roads  
4 - open roads  
5 - open motorized trails

Asarco Rock Creek Project  
BMU 5 Noranda Condition  
Moving Windows  
Open Routes  
1999



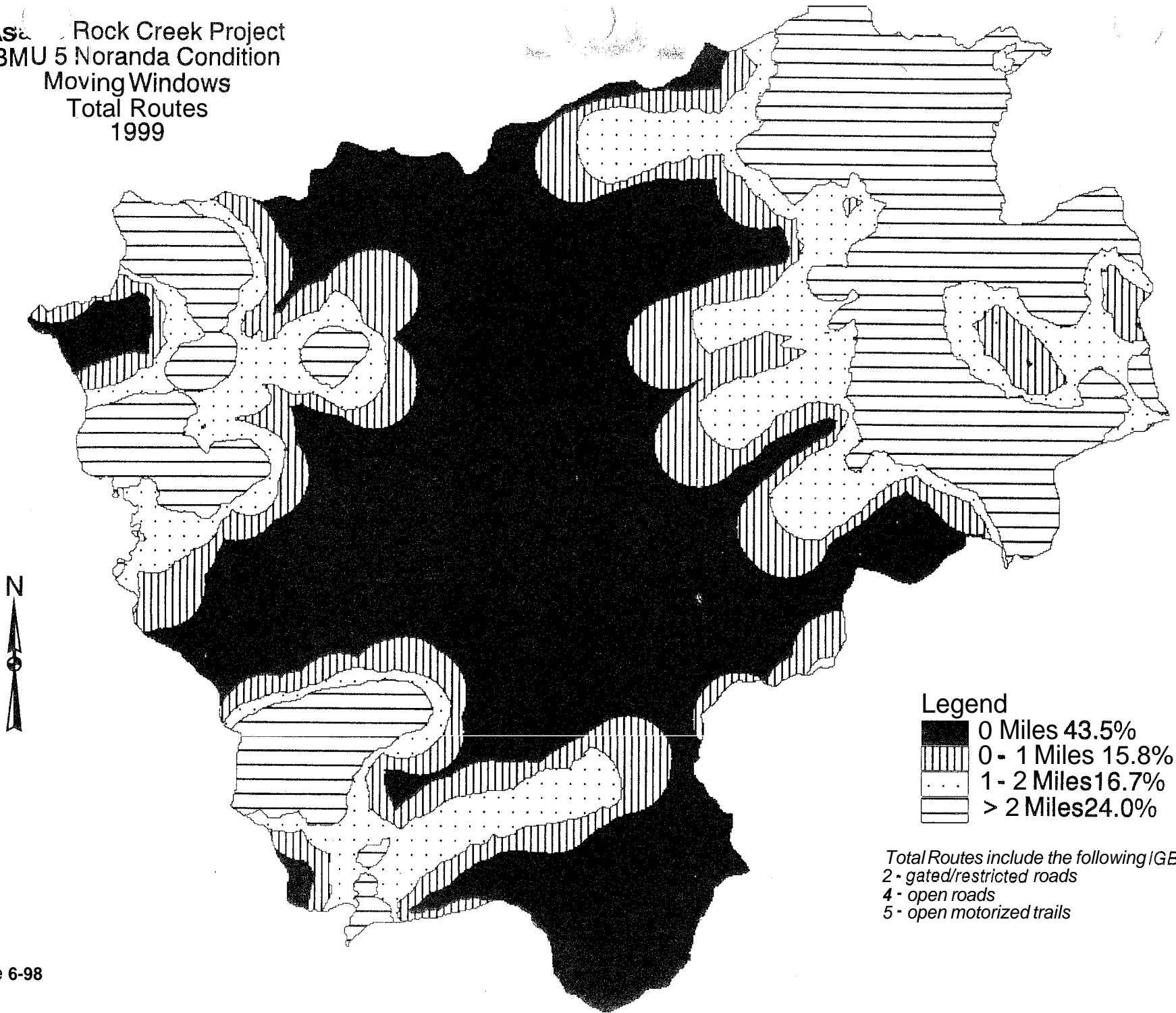
**Legend**

0 Miles	55.0%
0 - 1 Miles	14.9%
1 - 2 Miles	14.0%
> 2 Miles	16.1%

Open Routes include the following IGBC codes:  
4- open roads  
5- open motorized trails



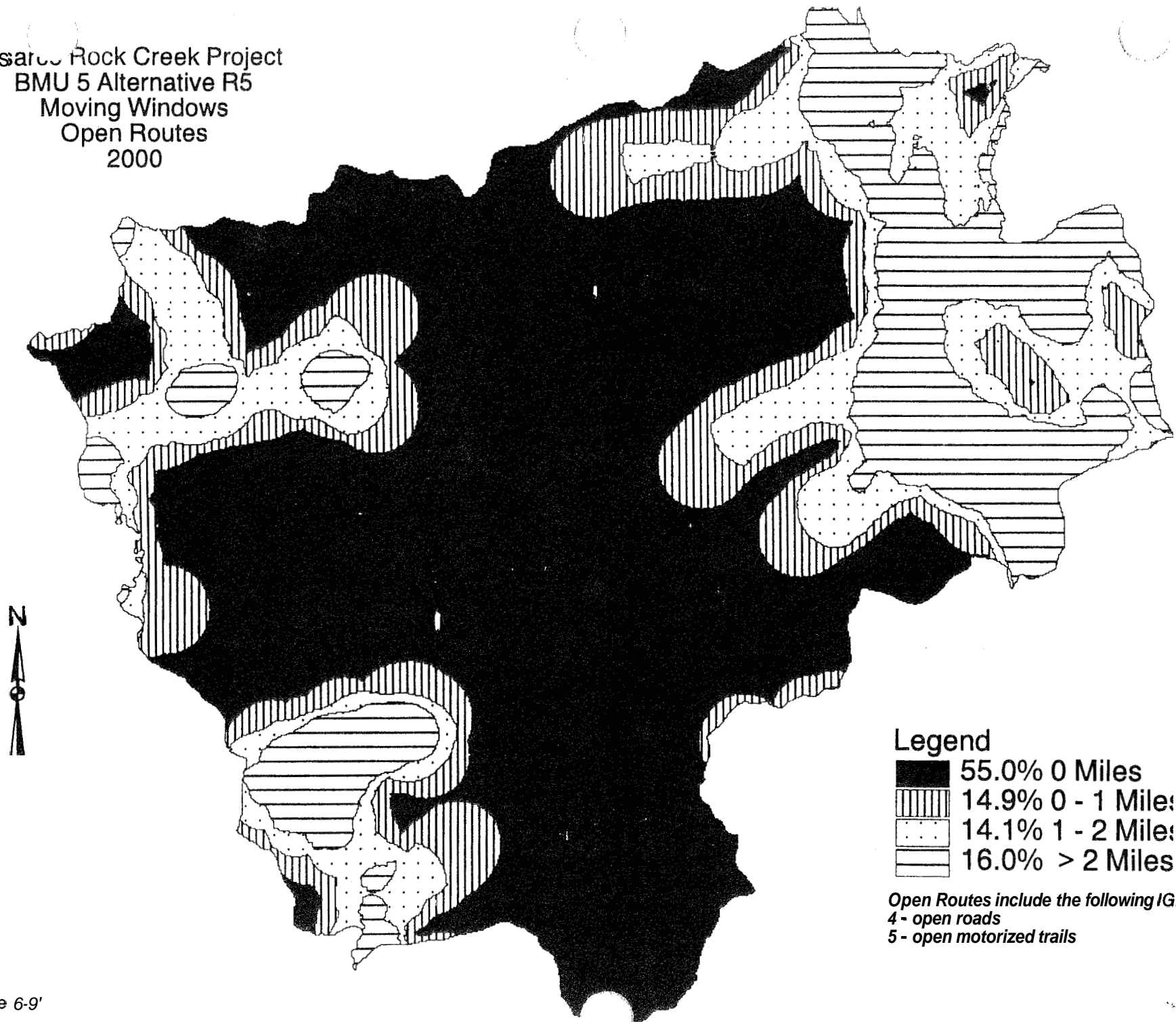
ASa Rock Creek Project  
BMU 5 Noranda Condition  
Moving Windows  
Total Routes  
1999



**Legend**  
0 Miles 43.5%  
0 - 1 Miles 15.8%  
1 - 2 Miles 16.7%  
> 2 Miles 24.0%

Total Routes include the following IGBC codes:  
2 - gated/restricted roads  
4 - open roads  
5 - open motorized trails

Asarco Rock Creek Project  
BMU 5 Alternative R5  
Moving Windows  
Open Routes  
2000

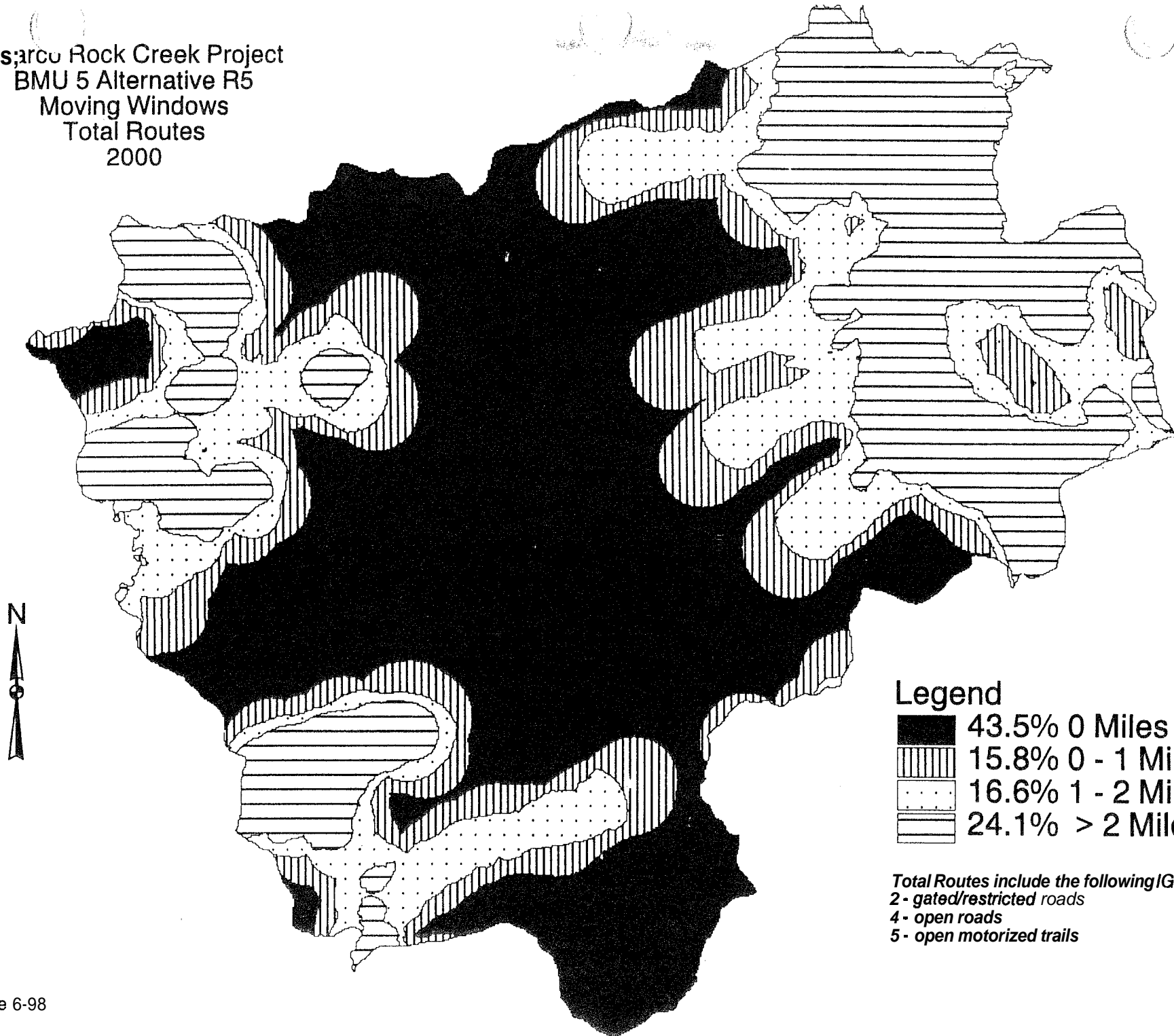


**Legend**

- 55.0% 0 Miles
- 14.9% 0 - 1 Miles
- 14.1% 1 - 2 Miles
- 16.0% > 2 Miles

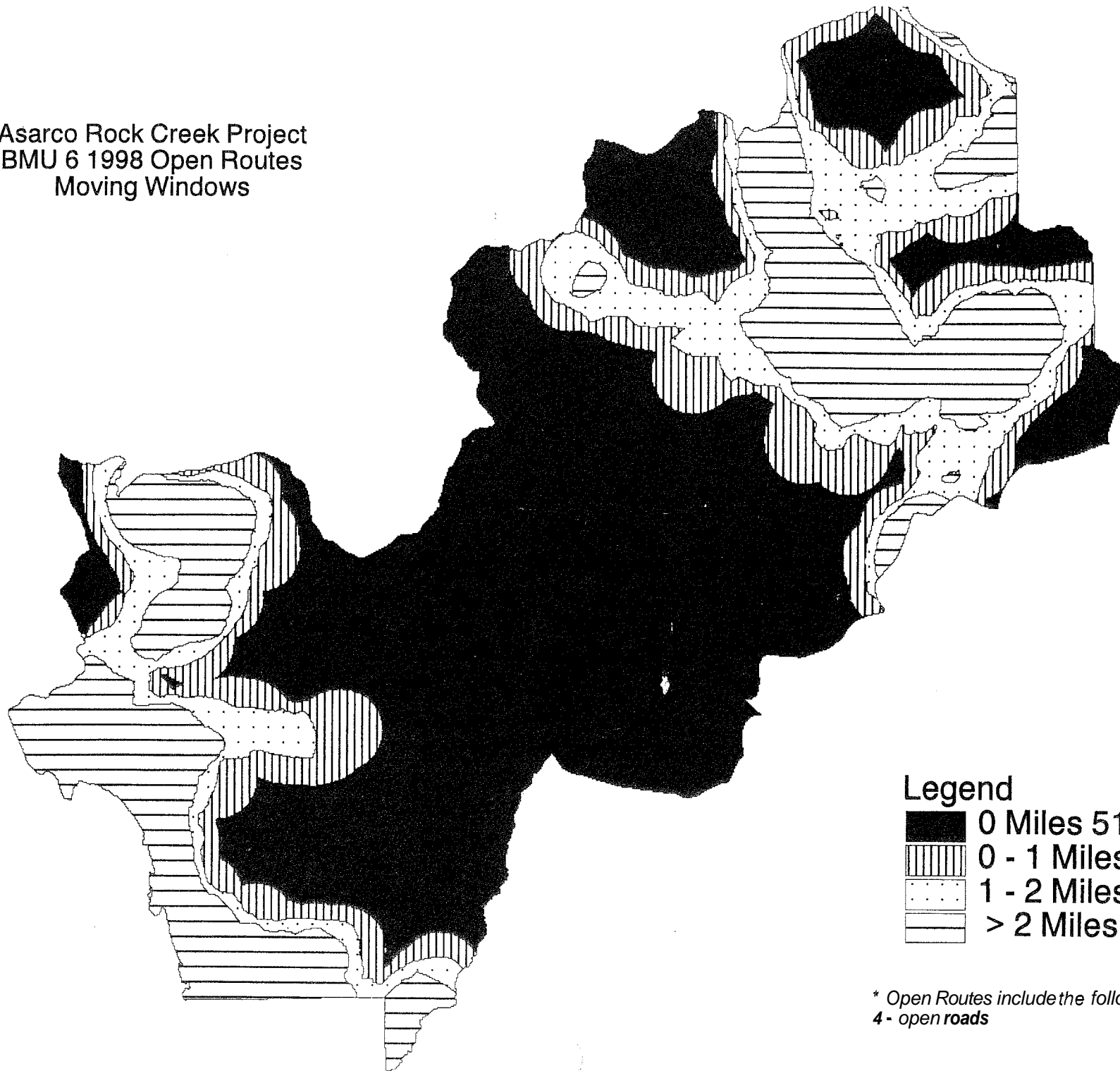
*Open Routes include the following IGBC codes:*  
4 - open roads  
5 - open motorized trails

Asarco Rock Creek Project  
BMU 5 Alternative R5  
Moving Windows  
Total Routes  
2000



Asarco Rock Creek Project  
BMU 6 1998 Open Routes  
Moving Windows

N  
s.ague 7-98

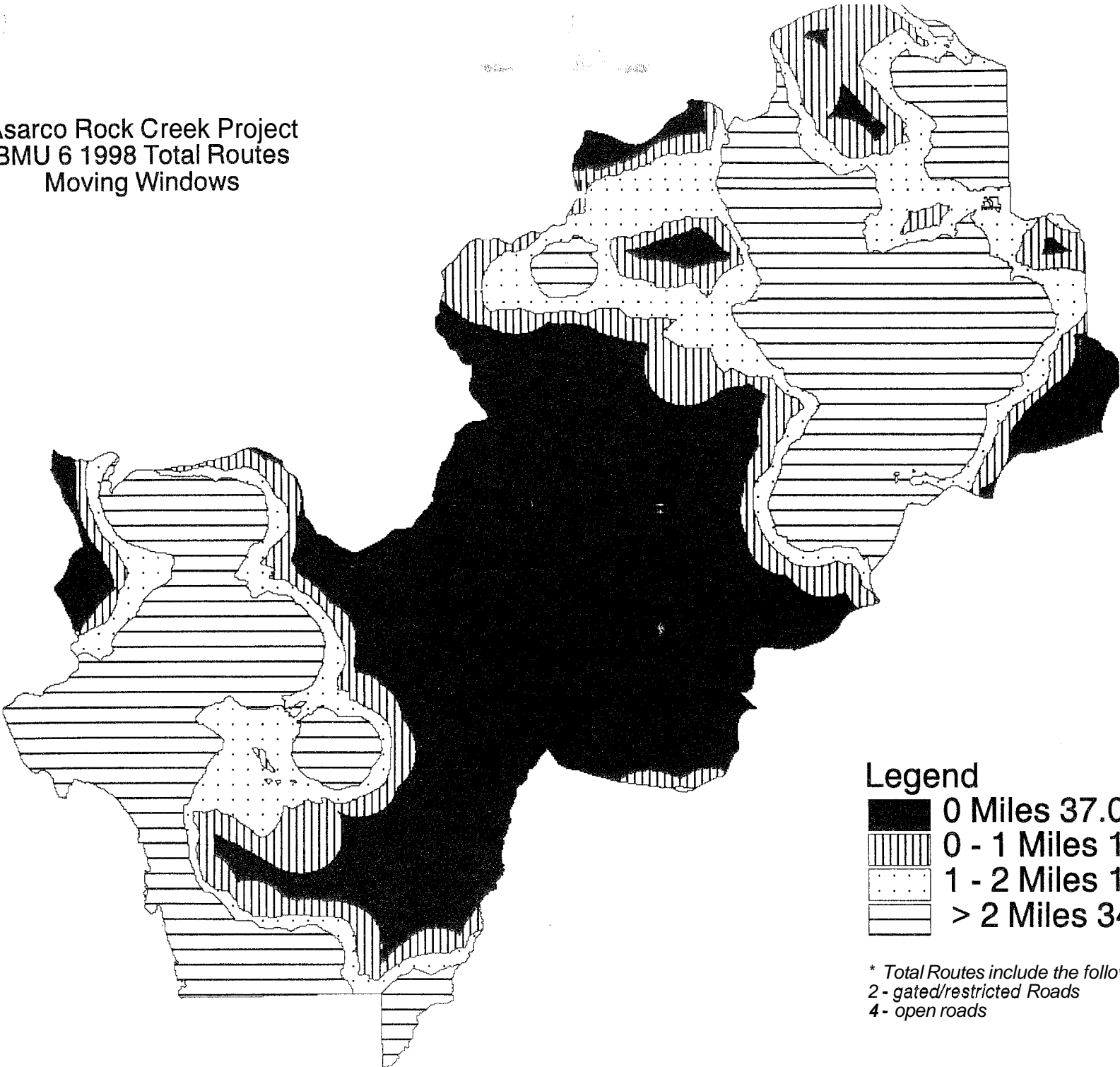


**Legend**

- 0 Miles 51.4%
- 0 - 1 Miles 14.3%
- 1 - 2 Miles 13.4%
- > 2 Miles 20.9%

\* Open Routes include the following igbc codes:  
4 - open roads

Asarco Rock Creek Project  
BMU 6 1998 Total Routes  
Moving Windows



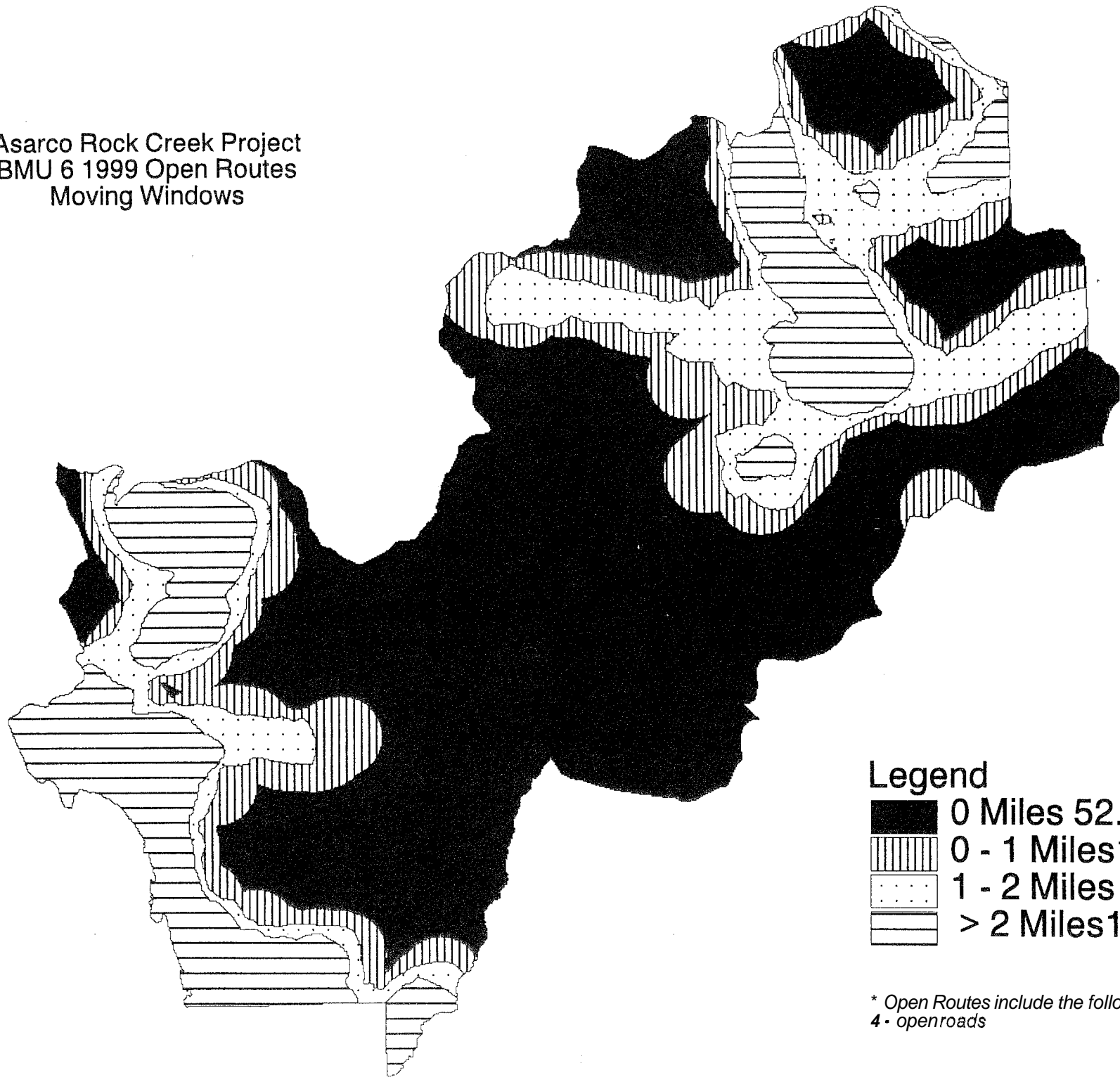
N  
s.ague 7-98

**Legend**

■	0 Miles 37.0%
▨	0 - 1 Miles 13.2%
▩	1 - 2 Miles 15.7%
▧	> 2 Miles 34.1%



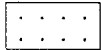

\* Total Routes include the following igbc codes:  
2- gated/restricted Roads  
4- open roads

Asarco Rock Creek Project  
BMU 6 1999 Open Routes  
Moving Windows



s.ague 7-98

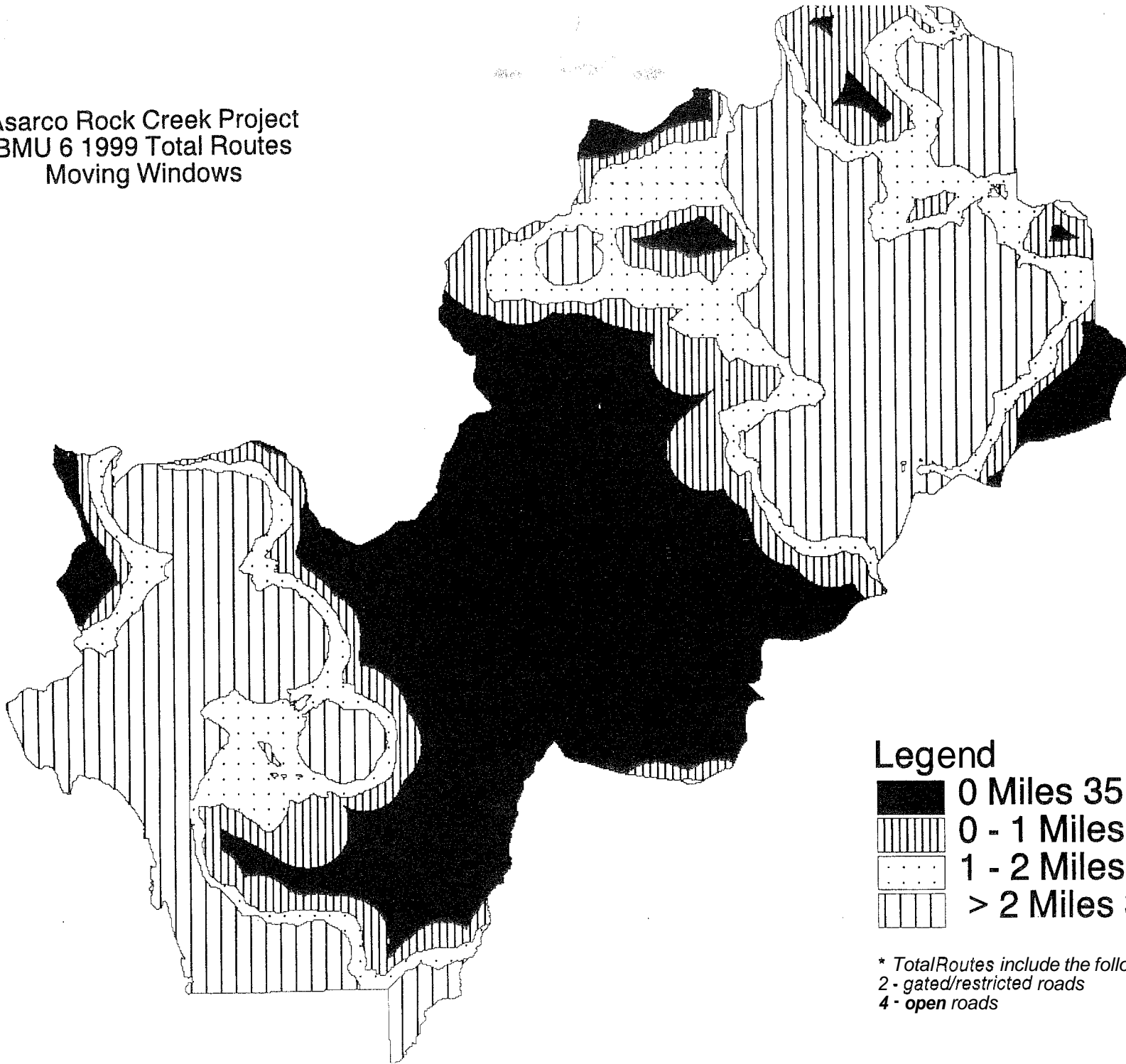
**Legend**

	<b>0 Miles 52.6%</b>
	<b>0 - 1 Miles 15.6%</b>
	<b>1 - 2 Miles 14.3%</b>
	<b>&gt; 2 Miles 17.5%</b>





\* Open Routes include the following igbc codes:  
4 • open roads

Asarco Rock Creek Project  
BMU 6 1999 Total Routes  
Moving Windows

N  
s.ague 7-98



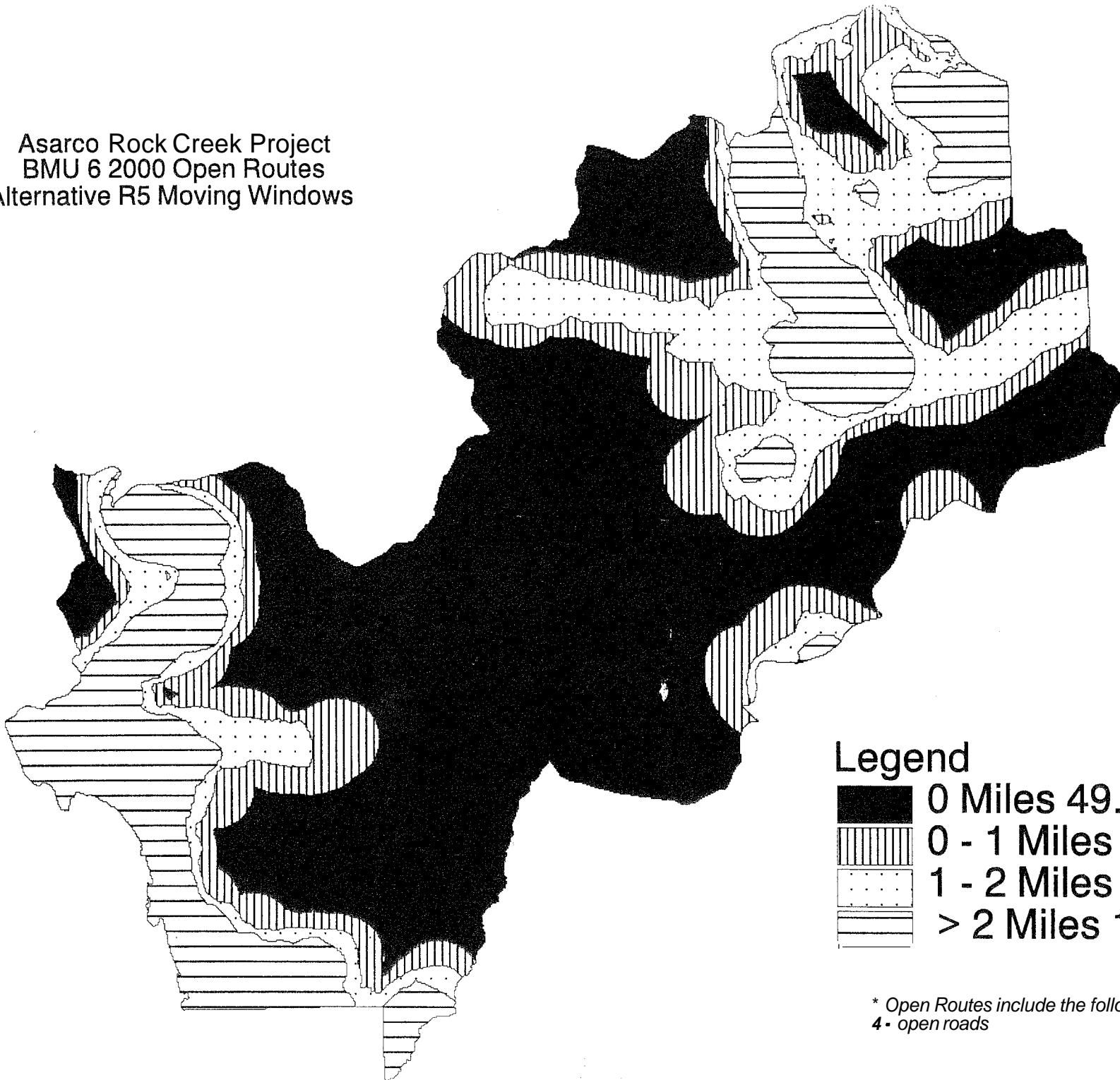
Legend

	0 Miles 35.5%
	0 - 1 Miles 13.9%
	1 - 2 Miles 15.8%
	> 2 Miles 34.8%

\* TotalRoutes include the followingigbc codes:  
2 - gated/restricted roads  
4 - open roads

Asarco Rock Creek Project  
BMU 6 2000 Open Routes  
Alternative R5 Moving Windows

N  
s.ague 7-98



**Legend**

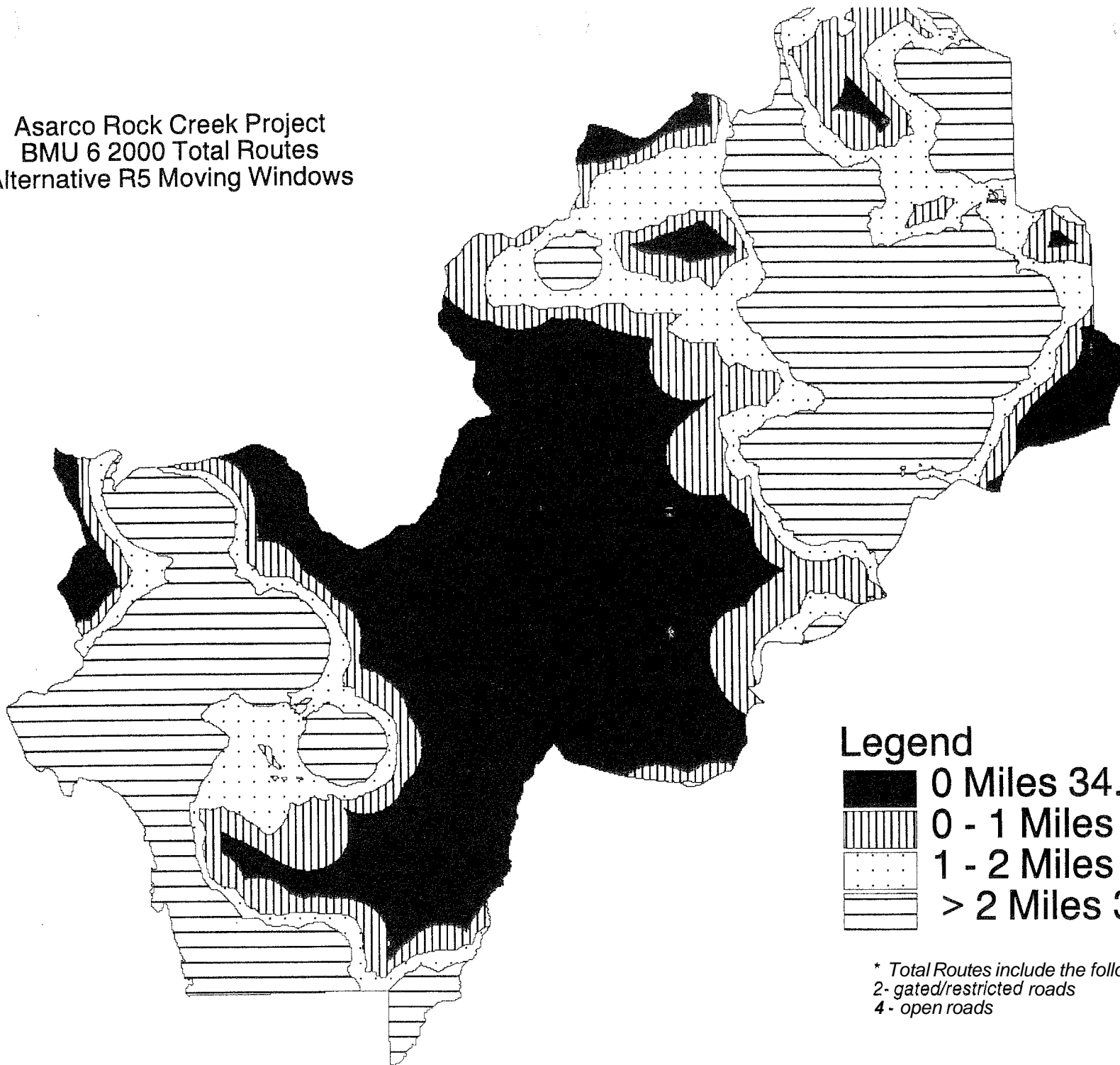
- 0 Miles 49.7%
- 0 - 1 Miles 16.6%
- 1 - 2 Miles 14.9%
- > 2 Miles 18.8%

\* Open Routes include the following igbc codes:  
4• open roads



Asarco Rock Creek Project  
BMU 6 2000 Total Routes  
Alternative R5 Moving Windows

N  
s.ague 7-98



Legend

0 Miles	34.4%
0 - 1 Miles	14.7%
1 - 2 Miles	16.3%
> 2 Miles	34.6%

\* Total Routes include the following igbc codes:  
2- gated/restricted roads  
4- open roads