1997 Project Abstract
For the Period Ending June 30, 1999
This project was supported by the Environment and Natural Resources Trust Fund (MS 1997, Ch. 216, Sec. 15, Subd. 10(c).

TITLE: WOLF MANAGEMENT PLAN
PROJECT MANAGER: Michael W. DonCarlos
ORGANIZATION: Minnesota Department of Natural Resources
ADDRESS: Box 7, DNR Building, 500 Lafayette Rd., St. Paul, MN 55155-4007
LEGAL CITATION: ML 1997, Ch. 216, Sec. 15, Subd. 10(c).
APPROPRIATION AMOUNT: $100,000

Statement of Objectives

The objective of this project was to develop a Minnesota wolf management plan, to be implemented following authorization by the Minnesota Legislature, and delisting of the wolf from the Federal Endangered Species Act of 1973. Because wolf management in Minnesota and elswhere has been historically controversial, and public attitudes sharply divided, the project was designed to provide substantial public involvement in the wolf management planning process.

Overall Project Results

The project resulted in several key products:

1. An accurate, updated wolf population estimate and range distribution in Minnesota
2. A consensus recommendation on wolf management from the citizen's roundtable.
3. A draft wolf management plan for Minnesota.
4. Proposed legislation to implement the wolf management plan.

Project Results Use and Dissemination

The most significant result was the consensus recommendation from the citizen's roundtable, given the diversity of views represented in this group, and the polarization of positions. Although the resulting bill was not adopted by the 1999 Minnesota Legislature, the roundtable consensus recommendations have established a clear baseline for additional discussion and debate.

The results of this project have been widely distributed and scrutinized; information was directly available to the public via the International Wolf Center and MN DNR websites. There was extensive media coverage (and debate) about the project, by all major Minnesota newspapers, and many radio and television stations.

Although the Minnesota Legislature did not finalize authorization for a Minnesota wolf management plan in the 1999 Session, it will likely readdress this issue in the 2000 Session. Regardless of the final outcome, this project provided an orderly and generally accepted framework for debating wolf management issues, and produced outcomes that will continue to guide and influence the final decisionmaking by the Minnesota Legislature and the U.S. Fish and Wildlife Service.

Date of Report: July 1, 1999
LCMR Final Work Program Update Report
Project Completion Date: June 30, 1999

LCMR Work Program 1997

I. PROJECT TITLE: WOLF MANAGEMENT PLAN

Project Manager: Michael W. DonCarlos
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Total Biennial Project Budget:

$LCMR:	$100,000
-$LCMR Amount Spent:	$78,313.29
=$LCMR Balance:	$21,686.71

A. Legal Citation: ML 1997, Ch. 216, Sec. 15, Subd. 10(c).

Appropriation Language: This appropriation is from the future resources fund to the commissioner of natural resources to develop a management plan for Minnesota wolves, to be ready for implementation if the Eastern Timber wolf is removed from the federal endangered species list.

B. Status of Match Requirement: Not applicable.

II. PROJECT SUMMARY AND RESULTS: A biologically sound and socially acceptable management plan for Minnesota wolves was prepared, with extensive public involvement, for implementation when the Minnesota Legislature authorizes wolf management, and MN wolves are removed from the federal Endangered Species list. The project included three primary tasks:

1. Roundtables and other public participation events were designed, scheduled, and conducted, to directly involve the public in establishing wolf management goals for Minnesota.

2. A statewide wolf population survey was conducted, to provide precise current information on the numbers and distribution of wolves in Minnesota.

3. A draft Minnesota Wolf Management plan was developed, with the participation of leading international wolf biologists, affected government agencies (Wisconsin Department of Natural Resources, US Fish & Wildlife Service, US Department of Agriculture Animal Damage Control,

others), stakeholder groups, and the Minnesota public.

III. PROGRESS SUMMARY: Project Result 1 (see IV. OUTLINE OF PROJECT RESULTS, Result 1, below) was completed on August 28, 1998. Twelve public information meetings were conducted around the state in January, 1998. A slide/tape show was created and presented at each meeting, describing the biology, history, and most importantly, the future of the wolf in Minnesota. DNR and other agency staff fielded numerous questions, and heard public comments on wolf management. Written comments were solicited and received at each meeting, and the results tabulated (report attached) and provided to the wolf management roundtable for further consideration. A wolf management roundtable was convened on April 17, 1998. The roundtable included representatives from various agencies and interest groups, representing the full diversity of public attitudes and opinions regarding wolf management (participant list attached). The roundtable met for eight full days, at various times and locations, through August 28, 1998. A detailed record including meeting summaries, handouts, and other information was maintained. On August 28, 1998, the roundtable produced a comprehensive package of consensus recommendations to DNR, for incorporation into Minnesota's wolf management plan (recommendations attached), and thus Project Result 1 was fully completed.

Project Result 2 (see IV. OUTLINE OF PROJECT RESULTS, Result 2, below) was completed in March, 1999. Population survey data was collected in winter 1997-98, and published in the summer, 1999 (see Updated Wolf Population estimate for Minnesota, 1997-1998, Summaries of Wildlife Research Findings 1998, Minnesota Department of Natural Resources, attached).

Project Result 3 (see IV. OUTLINE OF PROJECT RESULTS, Result 3, below) was completed in February, 1999 (see Minnesota Wolf Management Plan, attached). A bill to implement the plan was introduced in the 1999 Minnesota Legislative session.

IV. OUTLINE OF PROJECT RESULTS:

Result 1: Design, schedule, and conduct a sufficient number (6-12) of public roundtables, and public input meetings (8-12) to establish and communicate goals for wolf management planning.

LCMR Budget:	$30,000	**Expended:**	$33,129.67
Completion Date:	September, 1998	**Balance:**	($3,129.67)

Priorities and Goals:

a. Determine contractor needs and design a Roundtable process so that the entire range of public opinion regarding wolf management is represented.
b. Determine locations, numbers, and scheduling of roundtables and public input meetings so that public participation is maximized.
c. Conduct roundtables and public input meetings, summarize results, and communicate results.

Result 2: Conduct a statewide wolf population survey.

LCMR Budget:	$35,000	**Expended:**	$11,200.02
Completion Date:	March, 1999	**Balance:**	$23,799.98

Priorities and Goals:

a. Determine contractor needs and design survey, so that the data is statistically valid, and the results are directly comparable to previous wolf population surveys (survey design will be very similar to Fuller et.al., 1992. This methodology was peer-reviewed, scientifically validated, and widely accepted by various wolf interests).
b. Conduct the survey.
c. Produce a preliminary survey report, and submit a final report manuscript for publication.

Result 3: Draft a wolf management plan for implementation following federal delisting, and recommend MN Statute changes (if necessary).

LCMR Budget:	$35,000	**Expended:**	$33,983.60
Completion Date:	June 30, 1999	**Balance:**	$1,016.40

Priorities and Goals:

a. Determine contract needs, so that sufficient professional expertise is available to plan authors.
b. Review results of roundtables, and draft a management plan that considers both Roundtable results and current wolf biology to the greatest possible extent.
c. Distribute draft management plan for public comment and scientific review.
d. Finalize plan, prepare a report to the Legislature, and submit a legislative initiative for implementation, if necessary.

V. DISSEMINATION: Project results were widely disseminated, in a variety of media forms, including:

-LCMR progress reports
-direct mailings to Roundtable participants
-news releases
-scientific and popular publications
-public presentations
-MN DNR website
-inclusion of materials on the International Wolf Center's website

VI. CONTEXT:

A. Significance: The recovery performance objectives of the US Fish & Wildlife Service's

RECOVERY PLAN FOR THE EASTERN TIMBER WOLF, 1992, were fully accomplished by 1999. Following de-listing, wolf management authority will return to the State of Minnesota. Although current state law provides protection of wolves, it does not provide specific management directions or authorities. Wolves are very likely to continue increasing in numbers and expanding their range in Minnesota (and adjacent states) following federal de-listing, and will require additional specific management to provide for livestock depredation control, and to maintain desired ecosystem goals in certain areas of the state. Wolf management has historically been a very controversial issue in Minnesota and elsewhere. This proposal provided a process to manage and address the controversy by providing stakeholders accurate and current biological information, and provided for public participation in decision making that included all interests.

B. Time: All results were accomplished on or before June 30, 1999. However, implementation of the results will be delayed, pending wolf management authorization by the Minnesota Legislature and federal action on wolf delisting.

C. Budget Context: LCMR has previously provided funding to the International Wolf Center for public information about wolves. Other agencies, including MN DNR, US Fish & Wildlife Service, and others have funded previous wolf population surveys, field research, and management planning. However, this project is not a repetition of previous work. It is a series of diverse activities directed toward the specific goal of developing a management plan for wolves in Minnesota, with extensive public participation.

	July 1995-June 1997	**July 1997-June 1999**	**July 1999-June 2001**
	Prior expenditures on this project	**Proposed expenditures on this project**	**Anticipated future expenditures on this project**
1. LCMR	$0	$100,000	$0
2. Other State	$25,000[a]	$50,000[a]	$50,000[a]
3. Non State Cash	$50,000[b]	$100,000[b]	$100,000[b]
Total	$75,000	$250,000	$150,000

[a] DNR staff time, estimate
[b] Other agency staff time (US Fish & Wildlife Service, WI DNR, MI DNR, International Wolf Center), estimate

BUDGET:	
Personnel	$0
Equipment	$0
Acquisition	$0
Development	$0
Other	$75,000 (contracts) $25,000 (printing, facilities, travel, postage)
Total	$100,000

VII. COOPERATION: The US Fish & Wildlife Service and USDA Forest Service were

significant cooperators, participating in the wolf population survey, and providing critical review of management planning. The International Wolf Center cooperated in assisting the Roundtable process, and by disseminating information about the project.

US Fish & Wildlife Service - staff (% of time, no associated costs)
USDA Forest Service - staff (% of time, no associated costs)
International Wolf Center - staff (% of time, no associated costs)

VIII. LOCATION: The project primarily impacted the 1997-98 wolf range in Minnesota (see attached map). Project activities occurred primarily in the DNR Region II Office, Grand Rapids; International Wolf Center, Ely; out state Roundtable sites; and DNR Central Office, St. Paul.

IX. REPORTING REQUIREMENTS: Periodic work program progress reports were submitted at intervals related to the completion of Results, and the production of Deliverables.

X. RESEARCH PROJECTS: Not applicable.

1998 Wolf Public Information Meetings
Public Comment Summaries

Minnesota Department of Natural Resources
Section of Wildlife
500 Lafayette Road
St. Paul, MN 55155-4007

March 5, 1998

In January, 1998, the Minnesota Department of Natural Resources held 12 public information meetings about future wolf management planning for Minnesota (the purpose, locations, and meeting dates are described in Appendix A). People attending the meetings were provided with two informational handouts (Appendix B), and encouraged to complete a public comment sheet (Appendix C). An estimated 3,275 people attended the meetings; about half (1,572) submitted comment sheets at the meetings. The public comment sheet contained seven questions. Answers to questions 2-6 were databased and tabulated in aggregate for all meetings (I. Wolf Public Information Meeting Comments: Totals for all Meetings), and for individual meetings (II. Wolf Public Information Meeting Comments: Individual Meetings). Answers to questions 1 and 7 were entered into the database, but not tabulated.

All public comment sheets collected at the meetings, the database, and tabulations will be provided to the wolf management roundtable for consideration in developing wolf management recommendations to the Department of Natural Resources.

I. Wolf Public Information Meeting Comments: Totals for all Meetings

Estimated Attendance: **3,275**
Number of Public Comment Sheets Submitted: **1,572**

Results (percentages are of persons submitting comment sheets):

2. Do you believe there are circumstances where it is acceptable for some wolves to be removed (killed) to achieve management plan objectives?

83% ***Yes***
15% ***No***
2% ***Blank***

If yes, would you support regulated wolf removal in some circumstances to achieve the following objectives:

82% ***Reducing wolf damage to domestic animals (livestock, poultry, pets)***
57% ***Reducing wolf predation on big game***
60% ***Managing wolf population densities in some zones of the state***
65% ***Providing for sustainable harvests of wolves by trappers/hunters***

3. If wolf removal is part of the management plan, who should conduct the removal activities?

38% ***DNR employees***
22% ***Federal employees***
35% ***State certified wolf trappers***
40% ***Property owners experiencing damage***
62% ***The public, through regulated trapping or hunting seasons***
7% ***Blank***

4. Should the state set wolf management goals for the entire state or develop different goals for different regions?

19% ***Develop the same wolf management goals for the entire state***
73% ***Develop wolf management zones with different goals***
8% ***Blank***

5. How should wolf management be funded?

51% ***State general fund (tax dollars)***
49% ***Game and Fish fund (hunting license/excise tax dollars)***

6. Should the cost of wolf management be a factor in determining management options? For example, if a management service can provided by the private sector or by individual citizens at the same quality but less cost than by the State, should cost be a determining factor?

44% ***Yes***
47% ***No***
9% ***Blank***

II. Wolf Public Information Meeting Comments: Thief River Falls, January 5, 1998

Estimated Attendance: **200**
Number of Public Comment Sheets Submitted: **49**

Results (percentages are of persons submitting comment sheets):

2. Do you believe there are circumstances where it is acceptable for some wolves to be removed (killed) to achieve management plan objectives?

98% ***Yes***
0% ***No***
2% ***Blank***

If yes, would you support regulated wolf removal in some circumstances to achieve the following objectives:

79% ***Reducing wolf damage to domestic animals (livestock, poultry, pets)***
67% ***Reducing wolf predation on big game***
62% ***Managing wolf population densities in some zones of the state***
73% ***Providing for sustainable harvests of wolves by trappers/hunters***

3. If wolf removal is part of the management plan, who should conduct the removal activities?

22% ***DNR employees***
10% ***Federal employees***
35% ***State certified wolf trappers***
76% ***Property owners experiencing damage***
90% ***The public, through regulated trapping or hunting seasons***
2% ***Blank***

4. Should the state set wolf management goals for the entire state or develop different goals for different regions?

23% ***Develop the same wolf management goals for the entire state***
77% ***Develop wolf management zones with different goals***
2% ***Blank***

5. How should wolf management be funded?

43% ***State general fund (tax dollars)***
57% ***Game and Fish fund (hunting license/excise tax dollars)***

6. Should the cost of wolf management be a factor in determining management options? For example, if a management service can provided by the private sector or by individual citizens at the same quality but less cost than by the State, should cost be a determining factor?

65% ***Yes***
29% ***No***
6% ***Blank***

II. Wolf Public Information Meeting Comments: Warroad, January 5, 1998

Estimated Attendance: **200**
Number of Public Comment Sheets Submitted: **92**

Results (percentages are of persons submitting comment sheets):

2. Do you believe there are circumstances where it is acceptable for some wolves to be removed (killed) to achieve management plan objectives?

96% ***Yes***
4% ***No***
0% ***Blank***

If yes, would you support regulated wolf removal in some circumstances to achieve the following objectives:

92% ***Reducing wolf damage to domestic animals (livestock, poultry, pets)***
77% ***Reducing wolf predation on big game***
72% ***Managing wolf population densities in some zones of the state***
82% ***Providing for sustainable harvests of wolves by trappers/hunters***

3. If wolf removal is part of the management plan, who should conduct the removal activities?

14% ***DNR employees***
15% ***Federal employees***
36% ***State certified wolf trappers***
67% ***Property owners experiencing damage***
86% ***The public, through regulated trapping or hunting seasons***
0% ***Blank***

4. Should the state set wolf management goals for the entire state or develop different goals for different regions?

11% ***Develop the same wolf management goals for the entire state***
89% ***Develop wolf management zones with different goals***
0% ***Blank***

5. How should wolf management be funded?

42% ***State general fund (tax dollars)***
60% ***Game and Fish fund (hunting license/excise tax dollars)***

6. Should the cost of wolf management be a factor in determining management options? For example, if a management service can provided by the private sector or by individual citizens at the same quality but less cost than by the State, should cost be a determining factor?

63% ***Yes***
32% ***No***
5% ***Blank***

II. Wolf Public Information Meeting Comments: International Falls, January 6, 1998

Estimated Attendance: **150**
Number of Public Comment Sheets Submitted: **60**

Results (percentages are of persons submitting comment sheets):

2. Do you believe there are circumstances where it is acceptable for some wolves to be removed (killed) to achieve management plan objectives?

92% ***Yes***
7% ***No***
1% ***Blank***

If yes, would you support regulated wolf removal in some circumstances to achieve the following objectives:

91% ***Reducing wolf damage to domestic animals (livestock, poultry, pets)***
64% ***Reducing wolf predation on big game***
71% ***Managing wolf population densities in some zones of the state***
67% ***Providing for sustainable harvests of wolves by trappers/hunters***

3. If wolf removal is part of the management plan, who should conduct the removal activities?

32% ***DNR employees***
20% ***Federal employees***
52% ***State certified wolf trappers***
43% ***Property owners experiencing damage***
75% ***The public, through regulated trapping or hunting seasons***
3% ***Blank***

4. Should the state set wolf management goals for the entire state or develop different goals for different regions?

17% ***Develop the same wolf management goals for the entire state***
77% ***Develop wolf management zones with different goals***
6% ***Blank***

5. How should wolf management be funded?

58% ***State general fund (tax dollars)***
55% ***Game and Fish fund (hunting license/excise tax dollars)***

6. Should the cost of wolf management be a factor in determining management options? For example, if a management service can provided by the private sector or by individual citizens at the same quality but less cost than by the State, should cost be a determining factor?

47% ***Yes***
38% ***No***
15% ***Blank***

II. Wolf Public Information Meeting Comments: Ely, January 7, 1998

Estimated Attendance: **400**
Number of Public Comment Sheets Submitted: **146**

Results (percentages are of persons submitting comment sheets):

2. Do you believe there are circumstances where it is acceptable for some wolves to be removed (killed) to achieve management plan objectives?

97% ***Yes***
3% ***No***
0% ***Blank***

If yes, would you support regulated wolf removal in some circumstances to achieve the following objectives:

74% ***Reducing wolf damage to domestic animals (livestock, poultry, pets)***
55% ***Reducing wolf predation on big game***
59% ***Managing wolf population densities in some zones of the state***
75% ***Providing for sustainable harvests of wolves by trappers/hunters***

3. If wolf removal is part of the management plan, who should conduct the removal activities?

40% ***DNR employees***
15% ***Federal employees***
45% ***State certified wolf trappers***
47% ***Property owners experiencing damage***
77% ***The public, through regulated trapping or hunting seasons***
1% ***Blank***

4. Should the state set wolf management goals for the entire state or develop different goals for different regions?

21% ***Develop the same wolf management goals for the entire state***
77% ***Develop wolf management zones with different goals***
2% ***Blank***

5. How should wolf management be funded?

45% ***State general fund (tax dollars)***
59% ***Game and Fish fund (hunting license/excise tax dollars)***

6. Should the cost of wolf management be a factor in determining management options? For example, if a management service can provided by the private sector or by individual citizens at the same quality but less cost than by the State, should cost be a determining factor?

54% ***Yes***
43% ***No***
3% ***Blank***

I. Wolf Public Information Meeting Comments: Grand Rapids, January 8, 1998

Estimated Attendance: **450**
Number of Public Comment Sheets Submitted: **194**

Results (percentages are of persons submitting comment sheets):

2. Do you believe there are circumstances where it is acceptable for some wolves to be removed (killed) to achieve management plan objectives?

94% ***Yes***
4% ***No***
2% ***Blank***

If yes, would you support regulated wolf removal in some circumstances to achieve the following objectives:

86% ***Reducing wolf damage to domestic animals (livestock, poultry, pets)***
68% ***Reducing wolf predation on big game***
55% ***Managing wolf population densities in some zones of the state***
81% ***Providing for sustainable harvests of wolves by trappers/hunters***

3. If wolf removal is part of the management plan, who should conduct the removal activities?

23% ***DNR employees***
14% ***Federal employees***
32% ***State certified wolf trappers***
45% ***Property owners experiencing damage***
79% ***The public, through regulated trapping or hunting seasons***
3% ***Blank***

4. Should the state set wolf management goals for the entire state or develop different goals for different regions?

19% ***Develop the same wolf management goals for the entire state***
74% ***Develop wolf management zones with different goals***
7% ***Blank***

5. How should wolf management be funded?

49% ***State general fund (tax dollars)***
42% ***Game and Fish fund (hunting license/excise tax dollars)***

6. Should the cost of wolf management be a factor in determining management options? For example, if a management service can provided by the private sector or by individual citizens at the same quality but less cost than by the State, should cost be a determining factor?

51% ***Yes***
42% ***No***
7% ***Blank***

II. Wolf Public Information Meeting Comments: Park Rapids, January 12, 1998

Estimated Attendance: **225**
Number of Public Comment Sheets Submitted: **126**

Results (percentages are of persons submitting comment sheets):

2. Do you believe there are circumstances where it is acceptable for some wolves to be removed (killed) to achieve management plan objectives?

91% ***Yes***
7% ***No***
2% ***Blank***

If yes, would you support regulated wolf removal in some circumstances to achieve the following objectives:

86% ***Reducing wolf damage to domestic animals (livestock, poultry, pets)***
52% ***Reducing wolf predation on big game***
53% ***Managing wolf population densities in some zones of the state***
59% ***Providing for sustainable harvests of wolves by trappers/hunters***

3. If wolf removal is part of the management plan, who should conduct the removal activities?

35% ***DNR employees***
11% ***Federal employees***
37% ***State certified wolf trappers***
40% ***Property owners experiencing damage***
63% ***The public, through regulated trapping or hunting seasons***
4% ***Blank***

4. Should the state set wolf management goals for the entire state or develop different goals for different regions?

18% ***Develop the same wolf management goals for the entire state***
76% ***Develop wolf management zones with different goals***
6% ***Blank***

5. How should wolf management be funded?

51% ***State general fund (tax dollars)***
43% ***Game and Fish fund (hunting license/excise tax dollars)***

6. Should the cost of wolf management be a factor in determining management options? For example, if a management service can provided by the private sector or by individual citizens at the same quality but less cost than by the State, should cost be a determining factor?

51% ***Yes***
42% ***No***
7% ***Blank***

II. Wolf Public Information Meeting Comments: Duluth, January 13, 1998

Estimated Attendance: **425**
Number of Public Comment Sheets Submitted: **239**

Results (percentages are of persons submitting comment sheets):

2. Do you believe there are circumstances where it is acceptable for some wolves to be removed (killed) to achieve management plan objectives?

81% ***Yes***
16% ***No***
3% ***Blank***

If yes, would you support regulated wolf removal in some circumstances to achieve the following objectives:

84% ***Reducing wolf damage to domestic animals (livestock, poultry, pets)***
55% ***Reducing wolf predation on big game***
64% ***Managing wolf population densities in some zones of the state***
55% ***Providing for sustainable harvests of wolves by trappers/hunters***

3. If wolf removal is part of the management plan, who should conduct the removal activities?

47% ***DNR employees***
28% ***Federal employees***
35% ***State certified wolf trappers***
31% ***Property owners experiencing damage***
47% ***The public, through regulated trapping or hunting seasons***
7% ***Blank***

4. Should the state set wolf management goals for the entire state or develop different goals for different regions?

15% ***Develop the same wolf management goals for the entire state***
79% ***Develop wolf management zones with different goals***
6% ***Blank***

5. How should wolf management be funded?

55% ***State general fund (tax dollars)***
45% ***Game and Fish fund (hunting license/excise tax dollars)***

6. Should the cost of wolf management be a factor in determining management options? For example, if a management service can provided by the private sector or by individual citizens at the same quality but less cost than by the State, should cost be a determining factor?

41% ***Yes***
48% ***No***
11% ***Blank***

II. Wolf Public Information Meeting Comments: Little Falls, January 14, 1998

Estimated Attendance: **300**
Number of Public Comment Sheets Submitted: **147**

Results (percentages are of persons submitting comment sheets):

2. Do you believe there are circumstances where it is acceptable for some wolves to be removed (killed) to achieve management plan objectives?

95% ***Yes***
3% ***No***
2% ***Blank***

If yes, would you support regulated wolf removal in some circumstances to achieve the following objectives:

76% ***Reducing wolf damage to domestic animals (livestock, poultry, pets)***
67% ***Reducing wolf predation on big game***
62% ***Managing wolf population densities in some zones of the state***
73% ***Providing for sustainable harvests of wolves by trappers/hunters***

3. If wolf removal is part of the management plan, who should conduct the removal activities?

21% ***DNR employees***
12% ***Federal employees***
29% ***State certified wolf trappers***
40% ***Property owners experiencing damage***
78% ***The public, through regulated trapping or hunting seasons***
3% ***Blank***

4. Should the state set wolf management goals for the entire state or develop different goals for different regions?

18% ***Develop the same wolf management goals for the entire state***
77% ***Develop wolf management zones with different goals***
5% ***Blank***

5. How should wolf management be funded?

38% ***State general fund (tax dollars)***
61% ***Game and Fish fund (hunting license/excise tax dollars)***

6. Should the cost of wolf management be a factor in determining management options? For example, if a management service can provided by the private sector or by individual citizens at the same quality but less cost than by the State, should cost be a determining factor?

52% ***Yes***
39% ***No***
9% ***Blank***

II. Wolf Public Information Meeting Comments: Twin Cities, January 15, 1998

Estimated Attendance: **525**
Number of Public Comment Sheets Submitted: **379**

Results (percentages are of persons submitting comment sheets):

2. Do you believe there are circumstances where it is acceptable for some wolves to be removed (killed) to achieve management plan objectives?

58% ***Yes***
39% ***No***
3% ***Blank***

If yes, would you support regulated wolf removal in some circumstances to achieve the following objectives:

76% ***Reducing wolf damage to domestic animals (livestock, poultry, pets)***
42% ***Reducing wolf predation on big game***
61% ***Managing wolf population densities in some zones of the state***
46% ***Providing for sustainable harvests of wolves by trappers/hunters***

3. If wolf removal is part of the management plan, who should conduct the removal activities?

47% ***DNR employees***
29% ***Federal employees***
23% ***State certified wolf trappers***
13% ***Property owners experiencing damage***
27% ***The public, through regulated trapping or hunting seasons***
17% ***Blank***

4. Should the state set wolf management goals for the entire state or develop different goals for different regions?

22% ***Develop the same wolf management goals for the entire state***
61% ***Develop wolf management zones with different goals***
17% ***Blank***

5. How should wolf management be funded?

59% ***State general fund (tax dollars)***
45% ***Game and Fish fund (hunting license/excise tax dollars)***

6. Should the cost of wolf management be a factor in determining management options? For example, if a management service can provided by the private sector or by individual citizens at the same quality but less cost than by the State, should cost be a determining factor?

26% ***Yes***
60% ***No***
14% ***Blank***

II. Wolf Public Information Meeting Comments: Montevideo, January 20, 1998

Estimated Attendance: **75**
Number of Public Comment Sheets Submitted: **27**

Results (percentages are of persons submitting comment sheets):

2. Do you believe there are circumstances where it is acceptable for some wolves to be removed (killed) to achieve management plan objectives?

93% ***Yes***
7% ***No***
0% ***Blank***

If yes, would you support regulated wolf removal in some circumstances to achieve the following objectives:

92% ***Reducing wolf damage to domestic animals (livestock, poultry, pets)***
52% ***Reducing wolf predation on big game***
72% ***Managing wolf population densities in some zones of the state***
60% ***Providing for sustainable harvests of wolves by trappers/hunters***

3. If wolf removal is part of the management plan, who should conduct the removal activities?

30% ***DNR employees***
30% ***Federal employees***
37% ***State certified wolf trappers***
48% ***Property owners experiencing damage***
59% ***The public, through regulated trapping or hunting seasons***
0% ***Blank***

4. Should the state set wolf management goals for the entire state or develop different goals for different regions?

11% ***Develop the same wolf management goals for the entire state***
85% ***Develop wolf management zones with different goals***
4% ***Blank***

5. How should wolf management be funded?

59% ***State general fund (tax dollars)***
41% ***Game and Fish fund (hunting license/excise tax dollars)***

6. Should the cost of wolf management be a factor in determining management options? For example, if a management service can provided by the private sector or by individual citizens at the same quality but less cost than by the State, should cost be a determining factor?

52% ***Yes***
48% ***No***
0% ***Blank***

II. Wolf Public Information Meeting Comments: Rochester, January 21, 1998

Estimated Attendance: **100**
Number of Public Comment Sheets Submitted: **51**

Results (percentages are of persons submitting comment sheets):

2. Do you believe there are circumstances where it is acceptable for some wolves to be removed (killed) to achieve management plan objectives?

73% ***Yes***
25% ***No***
2% ***Blank***

If yes, would you support regulated wolf removal in some circumstances to achieve the following objectives:

95% ***Reducing wolf damage to domestic animals (livestock, poultry, pets)***
30% ***Reducing wolf predation on big game***
65% ***Managing wolf population densities in some zones of the state***
41% ***Providing for sustainable harvests of wolves by trappers/hunters***

3. If wolf removal is part of the management plan, who should conduct the removal activities?

43% ***DNR employees***
24% ***Federal employees***
31% ***State certified wolf trappers***
41% ***Property owners experiencing damage***
29% ***The public, through regulated trapping or hunting seasons***
8% ***Blank***

4. Should the state set wolf management goals for the entire state or develop different goals for different regions?

20% ***Develop the same wolf management goals for the entire state***
73% ***Develop wolf management zones with different goals***
7% ***Blank***

5. How should wolf management be funded?

69% ***State general fund (tax dollars)***
43% ***Game and Fish fund (hunting license/excise tax dollars)***

6. Should the cost of wolf management be a factor in determining management options? For example, if a management service can provided by the private sector or by individual citizens at the same quality but less cost than by the State, should cost be a determining factor?

33% ***Yes***
57% ***No***
10% ***Blank***

II. Wolf Public Information Meeting Comments: Northome, January 22, 1998

Estimated Attendance: **225**
Number of Public Comment Sheets Submitted: **54**

Results (percentages are of persons submitting comment sheets):

2. Do you believe there are circumstances where it is acceptable for some wolves to be removed (killed) to achieve management plan objectives?

98% ***Yes***
2% ***No***
0% ***Blank***

If yes, would you support regulated wolf removal in some circumstances to achieve the following objectives:

81% ***Reducing wolf damage to domestic animals (livestock, poultry, pets)***
60% ***Reducing wolf predation on big game***
62% ***Managing wolf population densities in some zones of the state***
77% ***Providing for sustainable harvests of wolves by trappers/hunters***

3. If wolf removal is part of the management plan, who should conduct the removal activities?

22% ***DNR employees***
13% ***Federal employees***
37% ***State certified wolf trappers***
70% ***Property owners experiencing damage***
76% ***The public, through regulated trapping or hunting seasons***
2% ***Blank***

4. Should the state set wolf management goals for the entire state or develop different goals for different regions?

19% ***Develop the same wolf management goals for the entire state***
76% ***Develop wolf management zones with different goals***
5% ***Blank***

5. How should wolf management be funded?

33% ***State general fund (tax dollars)***
65% ***Game and Fish fund (hunting license/excise tax dollars)***

6. Should the cost of wolf management be a factor in determining management options? For example, if a management service can provided by the private sector or by individual citizens at the same quality but less cost than by the State, should cost be a determining factor?

61% ***Yes***
35% ***No***
4% ***Blank***

APPENDIX A

DNR announces public information meetings about future wolf management in Minnesota

News Release, December 12, 1997

FOR IMMEDIATE RELEASE December 12, 1997

For more information, contact Mike DonCarlos, DNR Furbearer Specialist, (612) 297-3208.

DNR announces public information meetings about future wolf management in Minnesota

The future of wolf management in Minnesota will be the subject of a series of 12 public meetings to be held by the Minnesota Department of Natural Resources (DNR) throughout the state in January 1998. The eastern timber wolf is currently classified as threatened under the Federal Endangered Species Act, but it is likely that it will be reclassified in the near future.

To prepare for the reclassification, the Minnesota Department of Natural Resources will present an overview of the wolf management planning process, answer questions, and seek public comments at the January meetings.

"DNR's goal is to ensure the long-term survival of the wolf in Minnesota and the adjacent Great Lake states," said DNR Commissioner Rod Sando. "At the same time, we must address the conflicts that inevitably result when wolves and people live in the same vicinity. We need to understand how people in Minnesota feel about the future of wolf management and also to help strengthen the understanding of the biology of wolves. These public meetings are the first step in a longer process that will give Minnesotan's throughout the state an opportunity to share their ideas and views."

After the initial public meetings, a wolf roundtable will be convened. The members of the roundtable will represent the full spectrum of management ideas.

Wolf numbers have increased dramatically in Minnesota in recent years and the wolf range in Minnesota has expanded. "The wolves really fooled us," said Bill Berg, DNR Research Biologist and wolf expert. "They responded to increased white-tailed deer populations and protection from humans and they established themselves in areas of the state that we predicted would never have wolf populations."

Under the Endangered Species Act, the Federal recovery plan for the eastern timber wolf set a minimum population goal for Minnesota of 1,251 wolves. "We likely achieved that goal in the late 1970's or early 1980's," said Berg. "The wolf population census conducted in 1989 showed that Minnesota had about 1,700 wolves, and they have continued to expand their range. We estimate the wolf population in Minnesota now to be more than 2,000. This winter, we will conduct another wolf population census, to accurately determine current wolf numbers and distribution in Minnesota."

The Federal recovery plan also requires a second, secure wolf population outside Minnesota. That population has been established in Wisconsin and Michigan, started by wolves naturally moving from Minnesota.

"To satisfy the Federal recovery plan goals, the second population in Wisconsin and Michigan needs to exceed 100 wolves for five consecutive years," said Mike DonCarlos, DNR Furbearer Specialist. "Wolves exceeded the 100 threshold in 1994, and have dramatically increased their numbers since then. There were more than 250 in 1997. It is almost certain that wolf numbers will continue to increase in Wisconsin and Michigan, as well as in Minnesota. By early 1999, all recovery goals will be met and the U.S. Fish and Wildlife Service can consider removing the wolf from the Federal Endangered Species list."

In the event that the wolf is removed from the Federal listing, the DNR will assume primary responsibility for wolf management in Minnesota. But even after removal from the list, the U.S. Fish and Wildlife Service will probably require minimum numbers of wolves in each of the three states to ensure that recovered wolf populations do not relapse.

Most of the management goals and methods, however, will be the states' responsibility. The Minnesota DNR wants to develop a management plan before federal government action on delisting so that the state is prepared to assume this important responsibility.

The biological concerns and options in Minnesota's wolf management plan may prove to be the simplest issues to address. "The wolf is the most 'studied' animal in Minnesota," said Berg. "We have the tools to responsibly manage this species."

DonCarlos agrees, adding, "The wolf has become symbolic to many people. Addressing the social issues resulting from strongly divergent views of the wolf will be the greatest challenge in developing a state management plan."

The first step in the planning process is the public information meetings in January 1998. Following these meetings, the DNR will organize a roundtable process bringing together representatives of diverse viewpoints on wolf management. Members of the roundtable will include government agencies, environmental groups, agricultural groups, sports organizations, and wolf advocate groups to ensure that all views on wolves are heard. The Minnesota Bureau of Mediation Services will facilitate the roundtable meetings. The DNR intends to have a draft wolf management plan completed by the end of 1998.

Schedule of Wolf Public Information Meetings

Thief River Falls

Location: Northland Community Technical College Auditorium
1101 Highway 1 East
Thief River Falls
Date: Monday, January 5, 1998
Time: 1-3 pm

Warroad

Location: Warroad High School Mini Theater
510 Cedar Ave. NW
Warroad
Date: Monday, January 5, 1998
Time: 7-9 pm

International Falls

Location: Rainy River Community College
West Highway 11
International Falls
Date: Tuesday, January 6, 1998
Time: 7-9 pm

Ely

Location: Ely Community Center
30 South First Ave. East
Ely
Date: Wednesday, January 7, 1998
Time: 7-9 pm

Grand Rapids

Location: Itasca Community College, Davies Hall
Highway 169 East
Grand Rapids
Date: Thursday, January 8, 1998
Time: 7-9 pm

Park Rapids

Location: Park Rapids Area High School Auditorium
Huntsinger Ave. and Pearle St.
Park Rapids
Date: Monday, January 12, 1998
Time: 7-9 pm

Duluth

Location: Woodland Middle School Auditorium
201 Clover St.
Duluth
Date: Tuesday, January 13, 1998
Time: 7-9 pm

Little Falls

Location: Little Falls Middle School Commons
West US Highway 10
Little Falls
Date: Wednesday, January 14, 1998
Time: 7-9 pm

Twin Cities

Location: Normandale Community College Auditorium F 1265
9700 France Ave. So.
Bloomington
Date: Thursday, January 15, 1998
Time: 7-9 pm

Montevideo

Location: National Guard Armory TACC Building
711 S. 17th St.
Montevideo
Date: Tuesday, January 20, 1998
Time: 7-9 pm

Rochester

Location: Rochester Community Technical College Memorial Lecture Hall
851 30th Ave. SE
Rochester
Date: Wednesday, January 21, 1998
Time: 7-9 pm

Northome

Location: Northome School
East Highway 1
Northome
Date: Thursday, January 22, 1998
Time: 7-9 pm

APPENDIX B

DNR Fact Sheet: Wolves in Minnesota, Legal and Management Status

DNR fact sheet: Wolves in Minnesota, State Management Plan

Wolves in Minnesota

Minnesota DNR position statement: *"The Minnesota DNR is committed to ensuring the long-term survival of the wolf in Minnesota, and also to resolving conflicts between wolves and humans."*

Legal and Management Status

In 1974, wolves in the entire lower 48 United States were listed as endangered under the Federal Endangered Species Act of 1973. This listing afforded complete protection to wolves in Minnesota, and prevented the state from managing wolves in any way that caused harm or death.

In 1978, Minnesota's wolves were reclassified from endangered to threatened (a less protected status), because of the state's high population of wolves compared to other states, and the need to control wolves causing damage to livestock. The law still prohibited killing of wolves except in cases where agricultural damage occurred.

The US Fish and Wildlife Service, the agency that administers the Endangered Species Act of 1973, adopted a recovery plan for the Eastern Timber Wolf in 1978, and revised the plan in 1992. The purpose of the recovery plan was to increase wolf numbers and range to assure survival of the wolf in the eastern half of the US.

The recovery plan set a population goal for Minnesota of 1,251 to 1,400 wolves by the year 2000. The goal was likely achieved sometime in the early 1980's, and was confirmed by a wolf population survey in 1989 that estimated the statewide population at between 1,550 and 1,750.

The recovery plan also set a combined population goal for Wisconsin and Michigan. The combined Wisconsin/Michigan population goal of 100 was first achieved and confirmed in 1994, and that population must stay above 100 for at least five years (until 1999). Barring a catastrophic decline of wolf numbers in Minnesota, Wisconsin, or Michigan, all recovery goals will be accomplished by 1999.

Once recovery objectives are accomplished, a species can be delisted (removed) from the protection of the Endangered Species Act of 1973. The US Fish & Wildlife Service will decide when and how the wolf should be reclassified. If the US Fish & Wildlife Service delists the wolf, individual states and tribes become primarily responsible for management. However, the US Fish & Wildlife Service will continue to monitor wolf populations for at least another five years after delisting.

Because of the five-year waiting period (1994-1999) for the Wisconsin/Michigan population, the earliest that all wolf recovery plan goals will be met is 1999. Delisting after that could take a year or more, depending on federal procedures and legal actions.

It is important for Minnesota to develop a wolf management plan now, so that our state is prepared to assume responsibility for the wolf when delisting occurs, and so that we can demonstrate how Minnesota will assure the long-term survival of the wolf as required by the federal recovery plan.

Wolves in Minnesota

Minnesota DNR position statement: *"The Minnesota DNR is committed to ensuring the long-term survival of the wolf in Minnesota, and also to resolving conflicts between wolves and humans."*

State Management Plan

When the wolf is delisted (removed) from listing under the Federal Endangered Species Act of 1973, Minnesota and other states with wolf populations will be responsible for wolf management. The biology and management of wolves have had extensive research and are well understood and relatively straightforward. However, developing a wolf management plan that assures the long-term survival of the wolf in Minnesota while addressing the effects of wolves on agriculture and other human interests is likely to be a more complex task.

Reasons for the controversy include:

- Lack of knowledge about wolf biology, numbers, distribution, and effects on human interests
- Confusion of historical wolf persecution with modern wildlife management
- General opposition to wolf control
- General opposition to wolf protection
- Diverse personal values and attitudes with respect to wolves

The Minnesota Department of Natural Resources (DNR) wants public input in wolf management planning earl the process. DNR is holding public information meetings around the state to listen to ideas from the public and to provide information about the planning process and answer questions.

After the public meetings, DNR will assemble a wolf management roundtable which will guide DNR in addressing and resolving controversial aspects of wolf management. The roundtable will include representatives of agencies, environmental groups, agricultural groups, conservation organizations, and wolf advocacy groups to ensure that all viewpoints are represented and heard.

DNR staff will be part of the roundtable process, as well as providing technical assistance on wolf biology, conservation, and management. The roundtable will meet regularly until September 1998. The Minnesota Bureau of Mediation Services, Office of Dispute Resolution will facilitate the meetings.

During and following the roundtable process, DNR will develop a draft wolf management plan, incorporating the recommendations of the roundtable. Once the draft plan is completed, DNR will hold additional public information meetings to present the plan to Minnesotans.

A final draft of Minnesota's wolf management plan will be finished in early 1999. However, the state plan will not be effective until the US Fish and Wildlife Service delists the wolf from the Federal Endangered Species Act. Some aspects of the plan may also require the approval of the Legislature and the Governor.

APPENDIX C

Wolves in Minnesota Public Comment Sheet

Wolves in Minnesota

Minnesota DNR position statement: *"The Minnesota DNR is committed to ensuring the long-term survival of the wolf in Minnesota, and also to resolving conflicts between wolves and humans."*

Public Comment Sheet

Your ideas, concerns, and opinions are important. Please fill out this comment sheet. We've asked about what we think will be the key questions and issues, but please feel free to give us your additional comments and ideas on how to develop a wolf management plan for Minnesota. All comments with names and addresses will be provided to roundtable members for consideration in developing wolf management recommendations to the Minnesota Department of Natural Resources.

Meeting location:

Name:

Address:

Please check by the appropriate responses. You may check more than one answer for most questions.

1. What management issues should the wolf management roundtable address?

( ) A. Wolf numbers and distribution
- ( ) 1. Population protection
- ( ) 2. Population control
- ( ) 3. Population monitoring
- ( ) 4. Population Restoration

( ) B. Wolf predation
- ( ) 1. Predation on livestock and poultry
- ( ) 2. Predation on pets
- ( ) 3. Predation on big game (deer and moose)

( ) C. Enforcement of wolf management regulations
( ) D. Habitat/prey availability
( ) E. Research on wolf management
( ) F. Sustainable harvest of wolves
( ) G. Public information and education about wolves
( ) Other_____

(Over)

2. Do you believe there are circumstances where it is acceptable for some wolves to be removed (killed) to achieve management plan objectives?

( ) Yes
( ) No

If yes, would you support regulated wolf removal in some circumstances to achieve the following objectives:

( ) Reducing wolf damage to domestic animals (livestock, poultry, pets)
( ) Reducing wolf predation on big game
( ) Managing wolf population densities in some zones of the state
( ) Providing for sustainable harvests of wolves by trappers/hunters

3. If wolf removal is part of the management plan, who should conduct the removal activities?

( ) DNR employees
( ) Federal employees
( ) State certified wolf trappers
( ) Property owners experiencing damage
( ) The public, through regulated trapping or hunting seasons

4. Should the state set wolf management goals for the entire state or develop different goals for different regions?

( ) Develop the same wolf management goals for the entire state
( ) Develop wolf management zones with different goals

5. How should wolf management be funded?

( ) State general fund (tax dollars)
( ) Game and Fish fund (hunting license/excise tax dollars)
( ) Other_____

6. Should the cost of wolf management be a factor in determining management options? For example, if a management service can provided by the private sector or by individual citizens at the same quality but less cost than by the State, should cost be a determining factor?

( ) Yes
( ) No

7. Which groups, organizations, or individuals would you recommend to participate in the wolf management planning roundtable?

MINNESOTA WOLF MANAGEMENT ROUNDTABLE 6/1/98

Facilitation: Minnesota Bureau of Mediation Services

Roger Williams, Director

Roundtable Delegates: Organizations

Minnesota Department of Natural Resources

Delegate: Michael W. DonCarlos, Furbearer Specialist

Minnesota Department of Agriculture

Delegate: Blane White, Agricultural Certification Division

Minnesota Indian Affairs Council

Delegate: Joe Day, Executive Director

Fond du Lac Reservation

Delegate: Esther Nahgahnub

Bois Forte Band of Chippewa

Delegate: Ray Villebrun

Grand Portage Chippewas

Delegate: Millard J. (Sonny) Myers
Alternate: John Johnson, Band Biologist

Leech Lake Reservation

Delegate: Steve Mortenson, Biologist
Alternate: John Ringle

Red Lake Band of Chippewa Indians

Delegate: Dr. Jay T. Huseby
Alternate: Chuck Myers

White Earth Reservation

Delegate: Douglas McArthur
Alternate: Everett Goodwin

Mille Lacs Band of Ojibwe

Delegate: Ralph LaPlant, Conservation Officer
Alternate: Donn Weddl

Voigt Intertribal Task Force

Delegate: Matt O'Claire

MN Deer Hunters Association

Delegate: Joe Wood, Executive Director
Alternate: Wayne Enger

MN Trappers Association

Delegate: Gary Meis, President
Alternate: Joe Vaida, Vice President

MN Chapter, Safari Club International

Delegate: Dan Treb, President
Alternate: Dr. Donald McMillan

MN Farmers Union

Delegate: Dave Frederickson, President
Alternate: Andy Steensma, Director of Legislative Affairs

MN Farm Bureau

Delegate: Reginald "Reg" Emmert
Alternate: Bernie Uran

MN Cattlemen's Association

Delegate: Dick LeCocq, President Elect
Alternate: Dale Lueck

MN Turkey Grower's Association

Delegate: Roger Hanson
Alternate: Stan Gustin

MN Lamb and Wool Producer's Association

Delegate: Janet McNally
Alternate: Jan Takala

MN Chapter, The Wildlife Society

Delegate: Marty Skoglund
Alternate: Jim Gallagher

MN Conservation Federation

Delegate: Thomas P. Meyers, Regional Director
Alternate: Dave Moran, President

Izaak Walton League

Delegate: Mike Furtman, McCabe Chapter President
Alternate: Mike LaFleur, Dave Zentner

Sierra Club

Delegate: Ginny Yingling, Chapter Director
Alternate: Ms. Betsy Schmiesing

Friends of Animals and Their Environment

Delegate: Howard Goldman, Director
Alternate: Linda Hatfield

Audubon

Delegate: Tim Dawson
Alternate: Sandy Roggenkamp

HOWL (Help Our Wolves Live)

Delegate: Karlyn Berg
Alternate: Harriet Lykken

Animal Rights Coalition

Delegate: Durk A. Gescheidle, Board of Directors
Alternate: Walter Schmidt

Roundtable Delegates: Individuals

Shawn Perich, Outdoor Writer

Leland Coe, Beltrami County Commissioner
Alternate: Wes Frenzel

Clair Nelson, Lake County Commissioner

Lisa M. McGinn, Police Commander

Dr. Mark Neuzil, Professor

Andrea Lee Lambrecht, Freelance Writer

Roundtable Observers/Advisors

MN DNR professional staff

Bill Berg, Research Biologist
Dr. Todd K. Fuller
Additional professional staff, as needed

North Central Experimental Station (Dr. L. David Mech)

Dr. L. David Mech

United States Fish and Wildlife Service

Paul Burke, Twin Cities Ecological Services Field Office
Alternate: Lynn Lewis

USDA/APHIS/WS: Federal Animal Damage Control

William J. Paul, District Supervisor
Alternate: John Hart

USDA/Forest Service

Ed Lindquist
Alternate: Al Williamson

Wisconsin Department of Natural Resources

Adrian Wydeven
Alternate: Randy Jurewicz

Michigan Department of Natural Resources

Tom Wiese

International Wolf Center

Bill Route, Wildlife Biologist
Alternate: Walter Medwid

Voyageurs National Park

Barbara J. West, Superintendent
Alternate: Roger Andrascik

Great Lakes Indian Fish and Wildlife Commission

Miles Falk
Alternate: Peter David

1854 Authority

Andrew Edwards, Biological Services Director
Alternate: Darren Vogt

Wildlife Science Center

Margaret Callahan, Director
Alternate: Tom Ryan

Indigenous Environmental Network

Bob Shimek

MN Wolf Alliance

Jean Braveheart, Director
Alternate: Pat Eyrich

On August 28, 1998, the Minnesota wolf management roundtable reached consensus on the following package of wolf management recommendations:

Wolf Population Management

Wolves in Minnesota will be allowed to expand statewide. Population management measures, including public taking or other options, will be considered in the future but not sooner than the 5-year post-delisting monitoring period of the US Fish and Wildlife Service. If public taking is authorized by the legislature, the Department of Natural Resources will prepare and publish a rule, with opportunity for full public comment. Decisions on public taking will be based on sound data, including but not limited to the "5-year census" and the results of non-lethal control research.

To assure continued survival of the wolf in Minnesota, the roundtable recommends a minimum statewide population of 1,600 animals. This number is not a maximum population goal. If the population falls under the recommended minimum, appropriate management actions will be taken to address the cause of the reduction and assure recovery to the minimum level in the shortest possible time.

Wolf Population Monitoring

The roundtable accepts the current methodologies that the Minnesota DNR is using to indicate wolf population abundance and distribution, with the understanding that any results are estimates which may be higher or lower than the actual population. The roundtable recommends that for future wolf management decisions, the methodologies should move as close as possible toward an actual census. The roundtable understands that this movement toward a census for now will include:

a. standardized training of the data collectors and objective verification of their data
b. more continuous tracking and verification of information from more radio-collared control groups.

Wolf Depredation Management

Issue 1: Animals/damages Covered by the Depredation Program

The roundtable supports the continuation of a compensation program for wolf depredation to livestock.

The roundtable recommends a compensation program for wolf depredation to dogs under the supervised control of the owner, and livestock guard animals including llamas, donkeys and, dogs.

The roundtable recommends that veterinary costs incurred as a result of wolf depredation be included as a compensated loss.

Issue 2: Eligibility and Verification for Compensation and Lethal Control

The roundtable endorses the language in MN Rule 1515.3500 for determining eligibility for compensation, with the following additional recommendations:

a. In addition to Conservation Officers and county extension agents, other agents (State, Federal, Tribal) certified by the State should be included.

b. A handbook for wolf depredation investigations should be produced and all certified agents trained.

c. A uniform evidence-reporting form should be developed including photographs of the kill site for the file.

d. A central public contact (1-800 number) should be established.

e. A database of all reported losses, not just verified losses, should be developed. the database should include information on all predator losses.

f. The statutory requirement for a carcass to be present should be eliminated.

g. MN Rule 1515.3500 should be amended to be specific to wolves, and not endangered species.

If there are physical remains of a wolf-killed animal, lethal control may be carried out by a government agency.

Note: Consensus was not reached on the level of verification required to initiate government agency control actions if physical remains are not present.

Issue 3: Best Management Practices

The roundtable supports current legislative efforts to encourage the use of Best Management Practices (BMP's). The roundtable believes that the use of BMP's is critical to the long-term survival of the wolf in Minnesota, and urges the Minnesota Legislature to appropriate $500,000 on a matching basis with any non-public funding source for ongoing research, development, and dissemination of BMP's and non-lethal means of wolf control to abate wolf depredation to livestock. The roundtable suggests that farms experiencing livestock depredation be used as research sites.

Issue 4: Preventative Depredation Measures

Owners of livestock, livestock guard animals and dogs and/or their permitted agents may take action to destroy wolves that pose an "immediate threat" to human life, livestock, guard animals, or dogs. This action is permitted only on the livestock

owner's property. In the case of dogs, this action is permitted only for dogs under the controlled supervision of the owner. "Immediate threat" is defined as follows: the wolf is observed in the act of pursuing or attacking. The mere presence of a wolf or a wolf feeding on an already dead animal does not constitute an immediate threat.

At any time, a farmer or dog owner may first "harass" any wolf within 500 yards of people, buildings, dogs, livestock or other domestic animals in a non-injurious, opportunistic manner. Wolves may not be purposely attracted, tracked, searched-out or chased and then harassed. Wolves showing abnormal behavior will be reported to an authorized agent for action.

The following conditions apply when taking action to destroy a wolf:

a. A farmer or dog owner will report the action to an authorized agent within 24 hours and protect all evidence.

b. The agent will investigate all reported taking of wolves and will:

    1. keep written and photographic documentation of the kill site and any instances of poor husbandry that contributed to the attack occurring;

    2. with farmers but not dog owners, evaluate what, if any, best management practices and non-lethal controls are needed to prevent future attacks and develop a reasonable written and signed plan with the farmer for implementation;

    3. confiscate the wolf carcass(es).

c. State agents will report any evidence of abuse of this rule.

d. Failure to comply with the elements of this program, including failure to implement in a reasonable length of time the best management practices and non-lethal control plan developed with the authorized agent, or abuse of the program will result in loss of a farmer or dog owner's eligibility for future wolf damage compensation for a period of one year or until they implement the best management practices/non-lethal control plan.

e. Pelts will remain in the control of the state or tribal authorities and may be disposed of only by donation or sale for educational purposes.

f. This program will be reviewed at the annual gathering of roundtable participants who will make recommendations regarding the continuation, modification or termination of this program.

g. Monthly reports of this program will be made available to the public.

Issue 5: Removal of Verified Depredating Wolves

The roundtable recommends that the Department of Natural Resources assume administrative responsibility for an integrated wolf depredation program funded from the general fund. The roundtable recommends that DNR contract for assistance with the USDA/Wildlife Services program. Investigation of a kill-site and verification of a wolf kill will be conducted by a state agent (as defined in Issue 2, a). Trapping may be accomplished by state certified contract trappers. Wolf pelts will be retained by the state and disposition will be only for educational purposes.

Issue 6: Amount of Compensation

The roundtable recommends that the legislature consider compensation closer to fair market value than the $750 cap currently in law for verified wolf kills of livestock.

The roundtable recommends that compensation for the loss of guard animals (animals specifically bred, trained and used to protect livestock from wolf depredation) be the same as for livestock.

The roundtable recommends that compensation for dogs not qualifying as guard animals, under the supervised control of the owner, be at fair market value not to exceed $500.

Habitat Management

DNR will identify currently occupied and potential wolf habitat areas with the objective of managing habitat to benefit wolves and their prey on public land and in cooperation with private, corporate and tribal landowners. Elements of wolf habitat that need to be considered include but are not limited to:

a. human access
b. disturbance at den and rendezvous sites
c. corridors and linkages

Enforcement

Enforcement and penalties for the illegal taking (killing, injuring, beating, harassing, stalking, baiting/poisoning and other activities having the likelihood of injury or attempt to do the same) of wolves should be consistent with present statutes on the illegal taking of game. Fine levels should reflect the unique nature of the wolf. The roundtable further recommends that the restitution value of the wolf be established at $2,000. Injury to wolves caused by guard dogs used in the traditional manner is not considered illegal taking.

Due to the increased workload of conservation officers, the roundtable recognizes the need to substantially increase the number of conservation officers as well as the resources available to them. The roundtable urges the legislature to provide the general fund resources necessary for proper enforcement. The roundtable urges cross-deputization of additional tribal conservation officers and continued cooperation with federal law enforcement officials.

Education

The management plan should include an education component, providing information about:

a. the history of the wolf in Minnesota
b. wolf management in Minnesota
c. wolf behavior and biology
d. the wolf as part of the ecosystem
e. wolf status
f. human/wolf coexistence
g. contacts for additional information about the wolf
h. strategies for dealing with wolves

Eco-tourism

The roundtable recommends that DNR address eco-tourism in the management plan.

Wolf-dog Hybrids/Captive Wolves

a. The release of wolf hybrids and captive wolves into the wild should be banned.
b. The legislature should consider appropriate regulatory measures, based on public safety concerns.

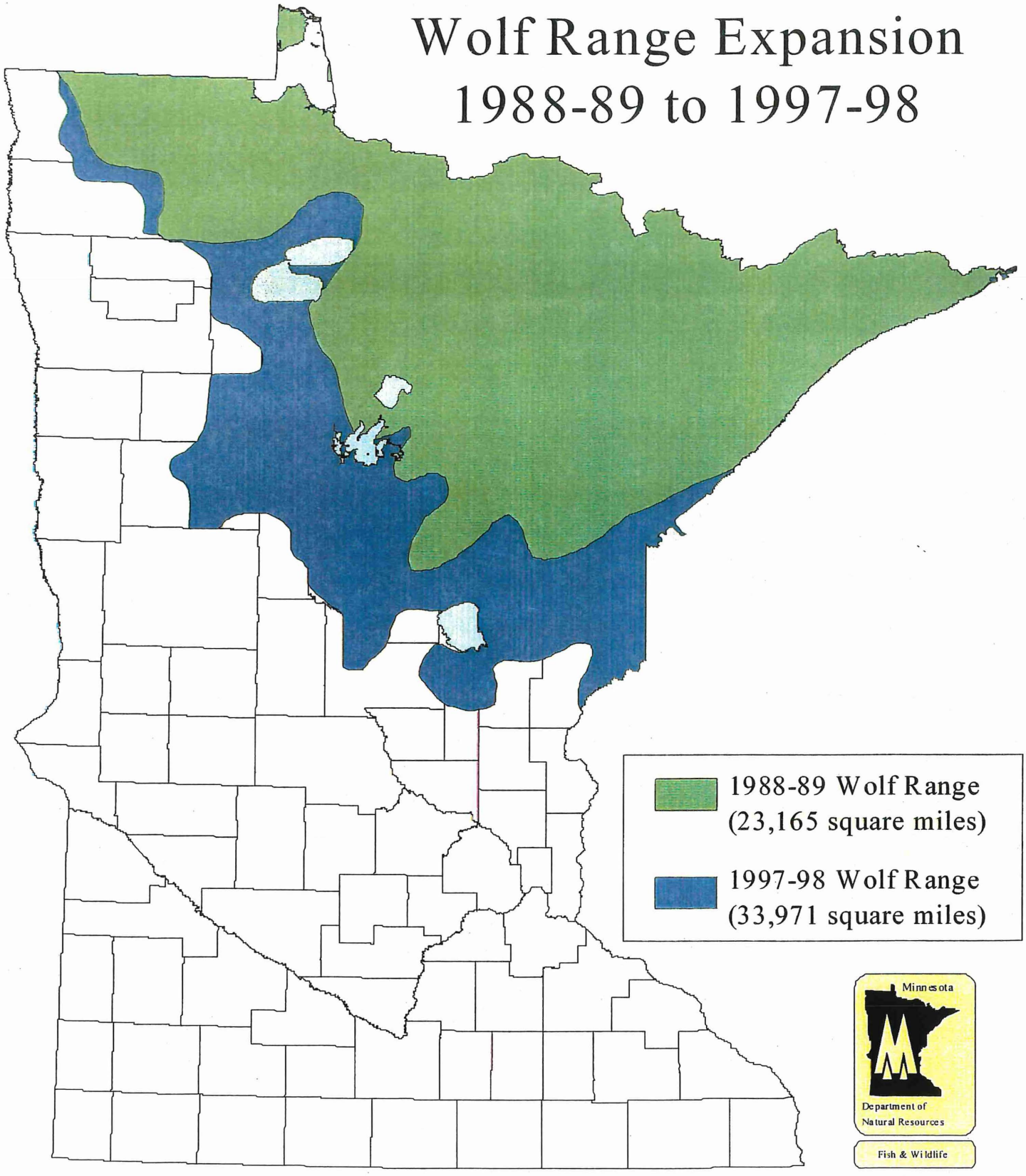
Management Plan Monitoring

The Dept. of Natural Resources will convene a group, including all groups participating in the existing roundtable, on an annual basis to review and comment on management plan implementation.

Funding for Plan Implementation

State funding for implementing the management plan should come from sources other than the game and fish fund.

Wolf Range Expansion
1988-89 to 1997-98



UPDATED WOLF POPULATION ESTIMATE FOR MINNESOTA, 1997-1998

William Berg and Steve Benson

During this century, there have been several estimates by natural resources scientists of wolf *(Canis lupus)* numbers and distribution in Minnesota that have been both range-wide and study area-specific in scope. The early estimates, especially those derived from bounty records and heresay, were of necessity subjective and crude. As wolf studies commenced in Minnesota during the mid-1930's (Olson 1938) and late 1940's (Stenlund 1955), data reliability improved, and since the advent of radio telemetry, there has been a minimum of 11 wolf studies in the state, each of which has provided area-specific data on wolf density.

Estimates of wolf density and distribution over larger areas such as a state or province require considerable coordination and effort. Since state or province-wide total counts (i.e., census) are impossible (even if all packs are radio-collared), techniques involving sampling, extrapolations, large observer base, telemetry studies, and track surveys must be utilized (Fuller 1995).

Fuller et al. (1992) extrapolated range-wide wolf population and distribution estimates from various studies dating back to Olson (1938), and reported on the comprehensive Minnesota Department of Natural Resources (MN DNR) wolf surveys in 1978-79 (Berg and Kuehn 1982) and 1988-89. The latter survey combined observations of wolves and wolf sign by field personnel with telemetry, U.S. Department of Agriculture (USDA) depredations trapping, and other databases to derive a wolf population estimate of 1,500 - 1,750 within a 60,178 km^2 contiguous range, the greatest area since wolf studies began in Minnesota.

With the fulfillment of wolf population goals in Minnesota and the establishment of a second population in Wisconsin and Michigan as required in the 1992 Eastern Timber Wolf Recovery Plan (U.S. Fish and Wildlife Service 1992), delisting from the Endangered Species Act could have occurred as early as 1999. As a part of the delisting process and as a critical component of the MN DNR Wolf Management Plan, a comprehensive wolf population and distribution survey similar to those in 1978-79 and 1988-89 was conducted in 1997-98. This report summarizes the results of that survey.

METHODS

The methodologies for conducting and analyzing the 1997-98 wolf population and distribution survey (Berg 1997) followed as closely as possible those used in 1988-89 (Fuller et al. 1992) and to a lesser extent, those used in 1978-79 (Berg and Kuehn 1982) (Table 1).

Instructions, forms, and maps were mailed in late October, 1997 to the field stations of several natural resources agencies statewide. Included were 1) all MN DNR disciplines, 2) U.S. Forest Service, 3) U.S. Fish and Wildlife Service, 4) USDA, 5) U.S. Geological Survey, 6) Wisconsin Department of Natural Resources, 7) Camp Ripley, 8) Voyageurs National Park, and 9) all county land departments, wood products industries, Indian Reservations, and Treaty Authorities located in the northern two-thirds of Minnesota.

Like the previous efforts (Table 1), the 1997-98 survey mailing consisted of two parts; 1) mapping of all location and group size observations of wolves and wolf tracks, and locations of scats, and 2) subjective ratings of wolf abundance and population trends in the last 5 years. The mapping effort was by far the most important and objective aspect of the survey, and other databases used to supplement the map locations were 1) 1997 scent station survey, 2) 1997 winter fisher *(Martes pennanti)* and marten *(M. americana)* track survey, 3) 5 wolf telemetry studies ongoing in 1997-98, and 4) USDA depredations trapping data for 1997-98. This combined database is abbreviated "WISUR '98" in the following text.

As maps and survey forms were received during spring 1998, data were digitally entered using ArcView GIS software and other data entry systems. Data entry continued until late summer, allowing some preliminary analyses to begin in August.

As in the 1988-89 survey, the township ($\sim$93 km^2) was used as the basis for analyzing wolf pack ($\geq$ 2 wolves) and single wolf occurrences, primarily because the most current GIS databases on human densities, roads, cover type, and land use were also categorized by township. The method for defining wolf range was to 1) digitally transfer points from all databases to maps, 2) code all townships to road and human density criteria used in Fuller et al. 1992 (roads <0.70 km/km^2 and humans <4/km^2 or roads <0.50 km/km^2 and humans <8/km^2; hereafter termed the 1988-89 road-human density model), and 3) include all townships fitting the 1988-89 road-human density model, plus all other townships with wolf packs, as wolf range. Townships with road and human densities higher than the 1988-89 road-human density model that had observations of single wolves were excluded from wolf range calculations, even though many townships in this class had several observations of lone wolves. Total wolf range was delineated on the west and south boundaries of these townships, and occupied wolf range was calculated by subtracting the areas of the excluded townships and large lakes from the total wolf range. Townships south and west of the total wolf range boundary, even though they had either observations of wolf packs or they conformed to the 1988-89 road-human density model, were not included in the wolf population or range calculations.

The WISUR '98 database was analyzed similarly to the wolf observation analyses in 1988-89 (Fuller et al. 1992) (Table 1). This consisted of 1) calculating the mean pack area (n=36) from the 1997-98 telemetry studies, 2) increasing the mean pack area by 37% to compensate for interstices between pack territories (Fuller et al. 1992:51), 3) dividing the occupied wolf range area by the increased mean pack area to obtain the number of wolf packs, 4) calculating the mean pack size (n=36) from the 1997-98 telemetry studies, and multiplying by the number of packs to obtain the number of

wolves living in packs, and 5) dividing the number of pack wolves by 0.85 (to compensate for 15% single wolves in the population; Fuller et al. 1992:46) to calculate the total number of wolves in the population. There were 90% statistical confidence intervals (90% CI's) on the final wolf population estimate.

RESULTS

WISUR '98 data were received from 179 field stations (compared to 154 in 1998-99, a 16% increase) representing the input of a minimum of 464 persons (compared to a minimum of 362 persons in 1998-99, a 28% increase) (Table 2). The total number of WISUR '98 observations of wolves or wolf sign was 3,451, nearly three times higher than in 1988-89 (1,244). WISUR '98 observations consisted of 73% tracks, 12% visuals, 6% scats, and 9% other (Table 2); in 1988-89 these respective proportions were 72%, 17%, 4%, and 7%. Observations of single wolves and wolf packs ($\geq$ 2 wolves) (packs derived from WISUR '98 visual and track observations only) comprised 41% and 59%, respectively, of total observations, compared to 44% and 56% in 1988-89. Wolves in packs (total of 6,377) derived from all observations of $\geq$ 2 wolves comprised 82% of all wolves tallied in both 1988-89 and 1997-98.

The telemetry database consisted of 36 radioed packs during 1997-98 in five studies: Superior National Forest (n=21 packs), MN DNR (n=7), Agassiz Refuge (n=2), Camp Ripley (n=2), and Wisconsin Border (n=4). These packs, containing 195 total wolves and having a combined area approximating 8% of the total wolf range, were distributed over a wide array of habitats, prey densities, land use and ownership patterns, and road and human densities (Fig. 1). The proportions of land use and covertype such as forest, brush, and pasture as determined from both the WISUR '98 and telemetry databases were nearly identical, indicating that the five telemetry study areas were representative of the entire wolf range (Fig. 1). For the 22 packs that also had pack observations from the 1997-98 winter survey, 67% of 1997-98 survey pack sizes ($\bar{x}$ = 5.0 wolves) were less than telemetry pack sizes ($\bar{x}$ = 5.4), suggesting that the WISUR '98 observations underestimated pack size. The USDA database derived from depredations trapping consisted of 94 records in a minimum of 88 townships during 1997 - 1998.

Distribution

The area occupied by wolves as indicated by the number of townships with wolf packs increased dramatically from 1988-89 to 1997-98, both statewide and within the 60,178 km^2 contiguous pack range identified in 1988-89 (Fuller et al. 1992:48) (Fig. 1). Statewide, 693 townships ($\sim$64,450 km^2) were known to contain wolf packs in 1997-98, compared to 314 townships ($\sim$29,400 km^2) in 1988-89, a 121% increase (Fig. 2).

The 1988-89 contiguous pack range (Fuller et al. 1992:48) had 293 townships (27,250 km^2) with known wolf packs in 1988-89, whereas in 1997-98 this same area had 418 townships ($\sim$38,870 km^2) with pack observations. South and west of the 1988-89 contiguous pack range, 21 townships

(~1,950 km^2) had pack observations in 1988-89, compared to 175 townships (~16,270 km^2) with packs, and another 69 townships with single wolves only, in 1997-98 (Fig. 2). Part of the wolf range expansion since 1988-89 can be attributed to wolves residing in townships with road and human densities higher than those in the 1988-89 road-human density model (see Methods). In 1997-98, 17% of the townships known to contain packs did not conform to the 1988-89 road-human density model, (i.e., they had higher road and human densities) (Table 2), compared to 11% in 1988-89 (Fuller et al. 1992:48). This enabled large areas identified in the 1988-89 survey (Fuller et al. 1992:49) as having no potential to be occupied by wolves to be occupied by packs in 1997-98 (Fig. 2).

A new total wolf range was delineated from the WISUR '98 database that included 99% of all townships known to contain wolf packs in 1997-98 and excluded large (>200 km^2) lakes; this total wolf range encompassed 88,325 km^2 (Fig. 2). Within the total wolf range, the 1997-98 occupied range of 73,920 km^2 consisted of 1) 666 townships (61,943 km^2) known to contain packs, and 2) 107 townships (11,977 km^2) (14% of the total wolf range) that were presumed to contain packs because of low road and human densities.

Wolf numbers

The 1997-98 population estimate using the WISUR '98 database and the 73,920 km^2 of occupied range is 385 packs and 2,450 wolves (90% CI=1,995-2,905), and was calculated according to Fuller et al. 1992:46 (73,920 km^2 ÷ 192 km^2 per pack x 5.4 wolves per pack ÷ 0.85 pack wolves = 2,450) (Fig. 3).

Questionnaire Survey

The questionnaire part of the survey made no attempt to estimate the population, but rather, served as a subjective way to look at wolf distribution and population trends. By far the minor part of the survey, the 1997-98 questionnaire survey was identical to that in 1978-79 and 1988-89, and asked for a subjective rating of wolf density (high, medium, low) and population trend (increasing, stable, decreasing). There were responses from 150 work stations in 1997-98; most in the northern part of the wolf range reported a stable population in their work area, and those in the west and south portions generally reported increasing numbers (Fig. 4). There is strong agreement between the wolf ranges as estimated from the questionnaire and WISUR '98 databases (Figs. 2 and 4). It is noteworthy that none of the 129 respondents with wolves present in their work areas in 1997-98 reported declining numbers, and that 71% reported increasing numbers over the last 5 years.

DISCUSSION

The distribution and population estimates derived from the 1997-98 survey were derived from extremely conservative criteria, for several reasons. The vast majority of survey cooperators worked for public land management agencies, and consequently, data were obtained from relatively few privately owned tracts. Outlying townships south and west of the total wolf range that had observations of packs were not included in the 1997-98 wolf population estimate, as they were inthe1988-89 estimate. Townships with one to several observations of single wolves and that may have been adjacent to townships with packs, but that had high road and human densities (roads >0.5 km/km^2 and humans >8/km^2 or roads >0.7 km/km^2 and humans >4/km^2), were excluded from all range and population calculations. The pack size for the population estimate calculation ($\bar{x}$=5.4) was much less than the mean of 5.8 for 388 previously studied packs in Minnesota, and the territory area for the population estimate (192 km^2) was much greater than the mean of 154 km^2 for 131 previously studied packs for which territory area data were available (W. Berg, unpub. data).

The area within the 1997-98 total range that conformed to the 1988-89 road-human density model but in which no packs were observed (and thus was included in the range area estimate) was much less in 1997-98 than in 1988-89. In 1988-89, 23,700 km (39% of the contiguous range) fell into this category, whereas it totaled 11,977 km^2 (14% of the total wolf range) in 1997-98.

Despite these conservative analyses, the wolf population increased 50% from1988-89 to 2,450 (90% CI=1,995-2,905) (Fig. 3). The calculated annual finite rate of population increase since 1988-89 was 1.045, nearly identical to the 1.04 calculated by Fuller et al. (1992:51) for the period 1970-1989.

The contiguous pack range in 1988-89 of 60,178 km^2 increased 48% by 1997-98 to 88,325 km^2, and the occupied area within those ranges increased 45% from 50,950 km^2 in 1988-89 to 73,920 km^2 in 1997-98.

In 1988-89, the lower wolf population estimate of 1,500 was derived from winter survey data similar to that in 1978-79 and 1997-98, and the upper estimate of 1,750 was derived from the relationship between wolf density and ungulate biomass (Fuller 1989:21). Only the winter survey data were used to derive the population estimate in 1997-98 in an effort to maintain relatively uniform survey methodologies for the three surveys since 1978-79, and because of recent questions concerning the reliability of using ungulate biomass to estimate wolf numbers in any one year (Mech et al. 1998, Mech pers. commun.).

As more wolf distribution surveys have been conducted, areas occupied by packs have continued to expand both within existing range and south and west into previously unoccupied areas. A study in 1983 by Mech et al. (1988:86) identified 59,900 km^2 of occupied primary, peripheral, and disjunct range, and 40,676 km^2 of unoccupied range, some of which contained only single wolves. In 1988-89, Fuller et al. (1992) found wolf packs in the peripheral, disjunct, and unoccupied ranges identified just 5 years earlier, and identified 60,178 km^2 of contiguous pack range and 11,500 km^2 of potential

range south and west of the contiguous range. Additional areas previously devoid of wolves contained packs in 1997-98. Approximately 128 townships (60 northeast and 68 southwest of the 1988 contiguous pack boundary) that the road and human density model identified in 1988-89 as having no potential to have wolves were known to contain packs in 1997-98, and 56 of these had human densities >8/km^2.

The road and human density analyses from the 1997-98 survey, combined with GIS land ownership, land use, and cover type databases, identified some possible areas of future wolf range expansion. Most occur just inside or south and west of the 1997-98 total pack range boundary, and include Clay, Benton, Sherburne, and central Marshall Counties (all of which contain single or pack wolves now) (Fig. 2), and blocks of 200-800 km^2 in southeastern Minnesota where single wolves have been reported. It is unknown how many additional wolves these areas will support, but the total will likely be small compared to the wolf population present in the late 1990's.

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Minnesota Wolf Management Plan

Prepared by the

Minnesota Department of Natural Resources

Section of Wildlife

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Approved:

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Executive Summary

The goal of this management plan is to ensure the long-term survival of wolves in Minnesota while addressing wolf-human conflicts that inevitably result when wolves and people live in the same vicinity. This plan was developed by holding 12 public information meetings throughout the state in January 1998, convening a wolf management roundtable (Roundtable) that held 8 days of meetings to develop consensus recommendations, and utilizing the wealth of biological, sociological, cultural, and economic data, reports, and experience available to the Minnesota Department of Natural Resources (DNR).

The ecology of wolves and their relationships to humans have been more studied in Minnesota than anywhere else in the world. We know much about their distribution, numbers, prey relationships, social organization, reproduction, and survival. In general, wolf numbers are highest where prey is abundant and human-caused mortality is low. We also know that humans hold a wide range of values related to wolves. During the past 30 years, legal protection of wolves and management for a healthy prey base have contributed to a threefold increase in wolf numbers in Minnesota. Wolves have been protected under Federal endangered species laws since 1974, and primary management authority since that time has resided with the United States Fish and Wildlife Service (USFWS). With wolf numbers quickly increasing in Wisconsin and Michigan in recent years, the wolf in the western Great Lakes region now meets established criteria for removal from the federal listing of threatened and endangered species.

When management authority reverts to the states, DNR, in cooperation with the Minnesota Department of Agriculture (MNDA) and the United States Department of Agriculture (USDA) Wildlife Services, proposes to keep in place some current wolf management activities, and to enhance or add others.

DNR will conduct, facilitate, or recommend to the Minnesota Legislature the following management activities:

<u>Population Monitoring</u>

- employ and enhance the currently used methodologies to assess wolf population numbers, distribution and demography
- encourage and conduct telemetry monitoring of wolves in selected areas
- monitor aspects of wolf health and diseases

<u>Population Management</u>

- wolf populations in Minnesota will be allowed to continue to expand, with a minimum population goal of 1,600
- no general public taking of wolves will be proposed for the first 5 years of implementation of this plan
- killing of depredating wolves will be limited to areas where conflicts with humans, livestock, or dogs occur

Public Safety

- harassment of wolves to discourage contact with humans will be allowed
- killing of wolves in defense of human life will continue to be allowed

Wolf Damage Management

An integrated wildlife damage management program that combines animal husbandry considerations, nonlethal deterrents, lethal wolf removal, and compensation payments to owners of livestock and dogs will be proposed, including the following activities:

- the current USDA Wildlife Services wolf damage control program will be continued, under a new cooperative agreement
- a handbook for wolf depredation investigations will be produced, and all certified investigating agents will be trained
- a central public telephone contact for wolf depredation assistance will be created
- a database of all reported depredation losses will be created
- the use of Best Management Practices (BMPs) by livestock owners will be encouraged (see page 21)
- the harassment of wolves will be allowed under certain conditions, to discourage interaction between wolves and humans, livestock, or pets
- lethal control of wolves by state contract trappers may be conducted under certain conditions
- any person may kill wolves in defense of human life
- owners of livestock, livestock guard animals, and dogs may kill wolves that pose an immediate threat to their animals, under certain conditions
- compensation for livestock losses will be increased
- compensation will be proposed for losses of dogs and livestock guard animals
- compensation will be proposed for veterinary costs resulting from wolf depredation
- a legislative appropriation to match non-public funding sources for projects of ongoing research, development, and dissemination of BMPs and nonlethal means of wolf control will be proposed

Habitat management

- Wolf habitat components, including wolf prey (deer and moose) and the vegetation and other environmental variables they depend upon; human-caused wolf mortality; and connectivity of wolf populations will be monitored and managed

Enforcement

- gross misdemeanor penalties for illegal wolf taking will be created
- a restitution value for illegally taken wolves will be established at $2,000
- the release of captive wolves and wolf-dog hybrids will be prohibited
- activities necessary to enforce wolf laws and regulations will be initiated and increased

Information and education

- timely and accurate information about wolves and wolf management will be available to the public in written, visual, and electronic formats
- wolf education programs and activities conducted by private organizations will be supported and facilitated
- timely news releases about wolves and wolf management will be prepared
- responsible wolf ecotourism will be encouraged as an important form of public education
- periodic knowledge and attitude surveys (5 years) of Minnesota citizens living both inside and outside wolf range will be conducted, because public attitudes directly impact wolf management

Research

- wolf research will be encouraged, coordinated, supported, and initiated when necessary
- primary research topics will include wolf population assessment, wolf-livestock interactions, and wolf-prey interactions

Public involvement

- all groups participating in the 1998 Roundtable (and others) will be invited to meet and review wolf management plan implementation and progress each year for the five years following Federal delisting of the wolf

Staffing

- a wolf specialist position will be created, to provide overall coordination of wolf management activities
- a wolf research biologist position will be created, to coordinate and conduct wolf research and population monitoring
- three conservation officer positions will be created, to ensure that wolf laws and regulations are enforced, and depredation responsibilities are handled in a timely manner

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INTRODUCTION

Since the eastern subspecies of the timber wolf, *Canis lupus*, (now referred to as the gray wolf, and in this plan, simply "wolf") was given full protection in 1974 by the Endangered Species Act of 1973 (ESA), the federal government and states in the western Great Lakes region have managed wolves with the primary objectives of enhancing populations in Minnesota and re-establishing viable populations in Wisconsin and Michigan. The ultimate goal of such management was to exceed the population guidelines set forth in the 1992 federal Recovery Plan for the Eastern Timber Wolf, and have the subspecies removed from the federal list of endangered and threatened species.

Plan goal

In 1998, the Minnesota Department of Natural Resources (DNR) adopted the following position statement on wolf management goals in Minnesota:

> ***The Minnesota Department of Natural Resources is committed to ensuring the long-term survival of the wolf in Minnesota, and also to resolving conflicts between wolves and humans.***

For delisting (the removal of wolves from the federal list) to occur, each state not only needs to demonstrate that the biological requirements of wolf recovery have been met, but also must prepare detailed management plans for wolves that assure their continuing survival. After delisting, most legal responsibility for management will reside with the states.

Plan development

The development of this plan consisted of three main activities.

Public information meetings -- DNR held 12 public information meetings throughout the state in January 1998 to present an overview of the wolf management planning process, to answer questions about wolves and wolf management, and to seek public comments on management issues. Attendees were provided with two informational handouts and encouraged to complete a public comment sheet. An estimated 3,275 people attended the meetings, and about half (1,572) submitted comment sheets at the meetings. Comments were tabulated by meeting place and in aggregate for future use.

Wolf Management Roundtable -- DNR convened a Minnesota wolf management roundtable (Roundtable) composed of representatives of environmental, agricultural,

hunting, trapping, and wolf advocate organizations; government agencies; and private citizens who had specific interest in wolf management issues in Minnesota. The purpose of the Roundtable was to provide guidance to DNR in developing a wolf management plan for Minnesota by deriving consensus recommendations on wolf management plan options, with particular emphasis on the controversial aspects of wolf management. At the first meeting of the Roundtable in April 1998, Commissioner Rod Sando committed DNR to endorsing all Roundtable consensus recommendations, as long as the survival of the wolf in Minnesota would be assured and the recommendations were biologically sound. Seven meetings were held, and the consensus-based decision-making process was facilitated by Roger Williams, Director of the Office of Dispute Resolution of the Minnesota Bureau of Mediation Services. On 28 August 1998, the Roundtable completed deliberations and came to consensus on a wide range of wolf management issues (Appendix I).

Wolf Management Plan -- DNR Section of Wildlife staff drafted this plan, incorporating all Roundtable consensus recommendations. In addition, DNR staff and advisors referred to biological, sociological, and economic data, reports, and experience; and after discussion and consideration, completed the plan that follows.

BIOLOGY AND HISTORY OF WOLVES IN MINNESOTA

General knowledge and research

Worldwide, wolves have been scientifically studied more than any other carnivore species, resulting in a comprehensive understanding of their ecology and relationship to humans. Minnesota's wolves have been the subject of more scientific investigations than any other regional group of wolves, worldwide. The first scientific study of wolves carried out in Minnesota was reported on 60 years ago by Sigurd Olson, and researchers still actively study wolves in a variety of areas of the state today. The result of these efforts has been a voluminous literature that comprises much that we know about wolves and their relationships with the environment and with humans. There are many papers and books that could be individually cited in a review of wolf biology and history in Minnesota, but for clarity and brevity, the following summary has been excerpted from compilations in a few pertinent publications, including a review and estimate of wolf distribution and numbers in Minnesota by Dr. Todd K. Fuller et. al. in 1992, the federal Eastern Timber

Wolf Recovery Plan published in 1978 and revised in 1992, and a set of guidelines for wolf management in the Great Lakes region by Dr. Todd K. Fuller in 1997.

Biology

Distribution and relations with other wolves and carnivores -- Before settlement by Europeans, wolves inhabited all of Minnesota, from the southern prairies to the northern forests. The subspecies formerly known as the eastern timber wolf (*C. l. lycaon*) ranged contiguously throughout southeastern Canada and northern Minnesota, and likely inter-graded with wolves formerly known as buffalo wolves (*C. l. nubilus*) along the prairie-forest border to the south and west. To the human inhabitants of the region, all wolves looked and behaved rather similarly, and at present all wolves in Minnesota are considered a single subspecies by scientists. There is genetic evidence that a few wolves bred with coyotes (*Canis latrans*) during the past century when wolf numbers were low and coyotes expanded their range into and through Minnesota, but the biological consequences of such interbreeding cannot be detected. In general, wolves displace coyotes, but are tolerant of red fox.

Prey relationships -- Historically, wolves preyed on large hoofed mammals (ungulates) in Minnesota, such as white-tailed deer (*Odocoileus virginianus*), elk (*Cervus elaphus*), woodland caribou (*Rangifer tarandus*), moose (*Alces alces*), and bison (*Bison bison*) wherever they occurred. Wolves are not habitat specialists; they can live anywhere prey is sufficiently abundant because they can kill the largest of ungulates and supplement their diet with a variety of smaller animals, such as snowshoe hares (*Lepus americanus*) and beavers (*Castor canadensis*). Wolves most often kill very young ungulates and very old ungulates because they are the most inexperienced and debilitated, respectively, in the population, and thus the easiest to capture. Still, wolves commonly kill healthy adult ungulates whenever conditions permit. Under unusual circumstances, such as extremely deep snow late in the winter, wolves may kill many more ungulates than they can eat, but usually wolves must constantly hunt to sustain themselves.

Social organization -- As in other areas of the northern hemisphere where they occur, most wolves in Minnesota live in family groups called packs. These packs are composed of a breeding pair and their offspring of one or more years, and sometimes one or more nonrelated wolves. A pair of wolves can be considered a pack, and some packs

number 15 or more. Throughout their lifetimes, wolves may also live on their own for some time, especially when they disperse from their natal pack and look for their own area in which to settle. At any one time, the proportion of the wolf population that is "alone" averages 10-15 percent, varying with the time of year and other factors.

Territoriality -- Wolf packs in Minnesota and elsewhere live in territories that are home ranges defended constantly against intrusion by other packs. On a rangewide basis, territories comprise a mosaic of wolf packs with few uninhabited areas in between. Territories may be as small as 25 square miles or as large as 200 square miles, depending on pack size and the density of ungulates (i.e., amount of food available). Boundaries of territories sometimes are obvious topographical features such as lakes or rivers, but most often they are indiscernible to humans. Boundaries usually are quite stable from year to year, except when pack composition changes substantially.

Dispersal and reproduction -- Wolves usually leave their packs when they are yearlings to seek a mate and establish their own territory and pack. This dispersal often occurs during autumn and, if successful in pairing, results in breeding in February and pups born in April. In most packs, only one female gives birth and litter sizes usually range from 4 to 7 pups. All pack members contribute to raising pups during the summer, whether the pups are at dens or at resting areas called "rendezvous sites." By autumn, pups have grown to nearly adult size and begin traveling with other pack members.

Survival -- Unless food is very abundant, up to one-half of wolf pups die before they reach 6 months of age. Starvation is thought to be the major cause of death of pups, but diseases that particularly affect pups also are important. Mortality of adults also is relatively high. In a wolf population that remains at the same level from one year to the next, about 35 percent of adult wolves die each year. The most common natural causes of mortality to both pups and adults are starvation and intraspecific strife (i.e., wolves killing other wolves). This happens when food is scarce and when wolves must "trespass" into adjacent wolves' territories to hunt. Resident wolves defend their territory and food supply, and often the result is the death of one or more members of both packs. Infrequently, disease may also be an important adult wolf mortality factor. Wolf survival in Minnesota is not affected by competition with black bears (*Ursus americanus*) or coyotes. Infrequently, motor vehicles or trains accidentally hit and kill wolves. Wolves are

also deliberately (illegally) killed by humans, but the frequency of these illegal actions is unknown. In addition, about 150 wolves are killed each year by depredation control activities.

Density -- A review of many wolf studies in North America indicates that wolf abundance is directly related to prey abundance. When prey is relatively abundant, litter sizes are larger and pup survival is greater. Under the best circumstances, wolf populations can increase 30-40 percent per year. Conversely, when prey is scarce, litters are smaller and pup survival is lower. The result is a sort of balance between wolves and their food supply. However, the density of wolves is also influenced by mortality. High mortality rates, such as from disease or harvest by humans, might reduce wolf numbers even though prey is relatively abundant. Also, wolf numbers might be relatively low in areas of high prey abundance that wolves are just beginning to colonize, or relatively high in areas where ungulate density is declining due to some other factor, such as severe winter weather. These differences in actual versus expected density are the result of "time lags," or the time needed for wolf populations to adjust to the food supply. In any one year, the ratio of wolves to ungulates may vary, but over a period of years with relatively stable ungulate populations there is the strong likelihood of a predictable balance between wolf and prey abundance.

Interactions with humans

Values -- Wolves have always played a prominent role in Native American culture and spirituality. In general, wolves were revered by American Indians, who made no efforts to control wolf populations or eliminate them from the landscape. However, American Indians did kill some wolves, usually for fur and cultural reasons. Similarly, early European fur traders seemed indifferent to wolves because they neither posed a threat to their livelihood nor were considered valuable furbearers. Conversely, European immigrants definitely did not value wolves and already had a long history of persecuting them in their homelands. In Minnesota, the bounty system for wolves started in 1849 and continued through 1965. Settlers not only had a mostly unfounded fear of wolves, but knew that wolves killed livestock and competed with humans for wild ungulates. Culturally, wolves had little or no value to Europeans and were viewed as a species to be

eliminated. Over time, some economic value of wolf pelts accrued, but there were no widely accepted reasons to protect or conserve wolves in Minnesota prior to the 1960s.

Attitudes -- Public attitudes began to change significantly with the "environmental revolution" in the 1960s, and by 1966 the first federal ESA was passed. Subsequently, wolf research and protection efforts increased substantially, as did educational efforts on behalf of the wolf. Wolves remained a species to be eliminated in the eyes of some, but gradually more people became concerned about wolves and their long-term survival in Minnesota.

Legal and conservation status

State -- Wolves were unprotected in Minnesota prior to the federal ESA and could be taken by public hunting and trapping. In addition to the state bounty, Minnesota had for a number of years an ongoing government wolf control program, including aerial shooting, which ended in 1956. The last bounties on wolves were paid in 1965. From 1965 through 1973, some wolves were killed for fur, while depredating wolves were killed from 1969 through1973 under a state directed predator control program. In 1974 all wolves were protected from any harm or death by being listed as a federally endangered species. Wolves were listed by Minnesota as a threatened species in 1984, and removed from the state list in 1996. In 1978, Minnesota created a compensation program administered by the Minnesota Department of Agriculture (MNDA) to pay livestock owners for wolf caused losses.

Federal -- The federal Endangered Species Preservation Act of 1966 provided wolves limited protection, but only on federal lands. In 1970 the Superior National Forest was closed by supervisory decree to the taking of wolves. In 1974 the federal ESA of 1973 legally protected all wolves in the lower 48 states as an endangered species. Beginning in 1975, wolves depredating on livestock were captured and relocated elsewhere in extreme northern Minnesota by USFWS trappers. In 1978 an Eastern Timber Wolf Recovery Plan was published that called for wolf management zones, the re-establishment of wolves elsewhere, and reclassification of wolves in Minnesota. Wolves in Minnesota were federally reclassified as threatened in 1978, thus allowing government trappers to kill depredating wolves under a set of strict guidelines. In 1986 authority for federal wolf

control efforts passed from USFWS to USDA Animal Damage Control (now Wildlife Services). Under federal law, disposal of gray wolf parts and hides is by federal permit.

Tribal -- American Indian tribes in Minnesota are sovereign governments that by various treaties retain certain rights to regulate natural resources used by their members on tribal and public lands on reservations, and in some cases, on public lands in ceded territories. Tribal governments also have the authority to dispose of gray wolf parts and hides as they see fit, including use for religious and ceremonial purposes.

Recovery criteria -- In 1992 a revised federal recovery plan (1992 Recovery Plan) identified specific criteria for delisting wolves in Minnesota and adjacent states. These included a Minnesota wolf population goal of 1,251-1,400 by the year 2000, a combined Wisconsin-Michigan population of greater than 100 for 5 consecutive years, and management programs in each state that would ensure the continued survival of wolves in the future.

Density and Distribution

Through the 1970s -- Wolf distribution and abundance has changed significantly in Minnesota over the past 150 years, as a consequence of changes in the human population composition, public attitudes, and legal status afforded wolves. Wolves once occurred throughout the state, but by 1900 wolves were rare in southern and western Minnesota. Wolf range continued to decrease, and by the 1940s the highest densities remained in remote areas of the northern third of the state, adjacent to and contiguous with the much larger wolf population in Canada. During the early 1950s, wolves still occurred almost exclusively in 12,000 square miles of the northern and northeastern part of the state and numbered 450-700. By the mid-1960s wolves might have numbered 350-700, and by 1970 numbers were estimated at 750 and their range probably covered almost 15,000 square miles. As a result of federal and state protection and increasing deer numbers, wolves numbered 1,000-1,250 by the late 1970s, and had increased at an average annual rate of about 5 percent per year.

1988-89 -- During the winter of 1988-89, the state conducted a comprehensive assessment of wolf distribution and abundance. Federal, state, and county natural resources professionals, all familiar with wolves and wolf sign, were asked to record winter wolf observations. This information (1,244 observations) was combined with other distribution

data, such as location of wolf depredation activities and radioed research packs, to estimate total occupied wolf range in the state (20,500 square miles), which indicated a range expanding south and west. The resulting population estimate of 1,500-1,750 wolves was well above the federal recovery plan goal. Overall, wolf numbers had continued to increase at a rate of about 3 percent per year, and wolf range had also increased.

1990s -- During the 1990s, sightings, reports, DNR annual scent station surveys, and federal depredation trapping activities all indicated that wolves were continuing to expand their distribution and thus their abundance. Given these observations and assuming that the continuing rate of wolf population increase was similar to that observed during the 1970s and 1980s, DNR estimated that there could have been 2,000-2,200 wolves in Minnesota in 1994. During winter 1997-98, an effort similar to but expanded from the 1988-89 survey was made to document wolf distribution and estimate total numbers. From more than 3,300 observations, DNR estimated that in winter 1997-98, 2,445 wolves ranged over approximately 33,970 square miles in Minnesota.

Wisconsin and Michigan -- In Wisconsin and the Upper Peninsula of Michigan the wolf population has also expanded, but at an even faster rate because of abundant prey and few wolves. In the early 1970s, there were no more than six wolves in Michigan, and one pack in Wisconsin. By 1994 wolves numbered 57 in each state, and by 1997 Wisconsin had 148 wolves (37% increase/year) and the Upper Peninsula of Michigan had 112 (25% increase/year). By 1998, both states had prepared draft wolf management plans.

Management activities

Monitoring -- Comprehensive monitoring of wolf numbers and distribution in Minnesota has been carried out by DNR at approximately 10-year intervals, and other population surveys and depredation trapping have provided annual population trends. In addition, state and federally funded research projects that estimate wolf population trends and dynamics on specific study areas have been conducted for 2-30 year periods for the past 30 years. These studies, all of which include monitoring of numerous radio collared individuals, have occurred in all portions of wolf range in Minnesota, and continue today. DNR also carries out annual evaluations of deer and moose populations. Ungulates are managed on a regional basis to ensure sustainable harvests for hunters, sufficient numbers

for aesthetic and nonconsumptive use, and minimal damage to natural communities and conflicts with humans such as depredation of agricultural crops.

Depredation control -- Since 1986, control of depredating wolves has been the responsibility of the USDA Wildlife Services wolf depredation program headquartered in Grand Rapids. During 1993-1997, that program was responsible for investigating 159-209 complaints annually, and killing an average of 158 wolves each year, many of which were utilized for scientific and educational purposes. The annual budget for the federal depredation program is approximately $250,000 per year.

Compensation payments -- Assessment of livestock losses and eligibility for payment of compensation is a cooperative effort between USDA Wildlife Services, DNR Division of Enforcement, MNDA, and county extension agents. Compensation payments made by the MNDA ranged from $31,000 to $46,000 each year during 1993-1997.

Enforcement -- Because wolves are protected under federal, state, and tribal law, enforcement of statutes prohibiting the illegal killing or harassment of wolves is the responsibility of the enforcement staff of USFWS, DNR, and tribal natural resource departments.

FUTURE WOLF MANAGEMENT IN MINNESOTA

The goal of this management plan is to ensure the long-term survival of wolves in Minnesota while also adequately addressing the wolf-human conflicts that inevitably result when wolves and people live in the same vicinity. To achieve this goal DNR, in cooperation with MNDA and USDA Wildlife Services, proposes to keep in place some current wolf management activities, and to enhance or add others. In particular, the plan addresses wolf conservation concerns in the areas of population monitoring and management, depredation management, habitat management, law enforcement, public information and education, research, and program administration.

Authority

Many aspects of this plan are superseded by federal laws, until the wolf is delisted from the ESA. When delisting occurs, all federally superseded state laws existing at that time will be immediately effective, and all federal wolf regulations eliminated. However, after delisting USFWS will continue to monitor the status of wolves in Minnesota for a

period of 5 years to ensure that recovery goals are maintained. Should Minnesota or any state manage wolves in a manner that results in population declines below the 1992 Recovery Plan goals, USFWS has authority to immediately re-list the species. The 1992 Recovery Plan also requires USFWS to determine that the survival of the wolf in Minnesota is assured, before making a delisting decision. For these reasons, it is desirable for Minnesota to have a legislatively authorized wolf management plan prior to federal delisting.

DNR authority to manage wolves is governed by the Minnesota Legislature through statutes. For some aspects of wolf management, existing statutes provide authority for DNR management actions and activities. However, additional authorities are needed now, and in the future, to fully implement the Roundtable recommendations and this wolf management plan. A policy bill for the 1999 Minnesota Legislature (Appendix II) will clarify existing wolf management authorities, provide new authorities, and authorize this management plan. This bill is needed to facilitate the USFWS federal delisting process, and also to ensure that essential management authorities are in place for immediate implementation when federal delisting occurs. A proposed future bill (Appendix III) includes additional policy provisions (with fiscal impacts), to be considered by the Minnesota Legislature when federal delisting is imminent. The fiscal impacts of this bill would require new appropriations (see Appendix IV), to fund the implementation of Minnesota's wolf management program.

Population monitoring

Assessment of wolf numbers and distribution -- DNR will continue and enhance current methodologies to periodically assess wolf population abundance and distribution. As with any survey of wild animals in their natural environment, the results of these assessments are estimates, which may be somewhat higher or lower than the actual population. DNR used the current methodology to conduct comprehensive statewide assessments of wolf distribution and numbers in winters 1978-79, 1988-89 and 1997-98. For future wolf population and distribution assessments, these methodologies will move as close as possible toward an actual census; that is, a total enumeration or count of wolves in Minnesota. Methodology enhancements will include: 1) standardized training of the data collectors and objective verification of their data, and 2) more continuous tracking and

verification of information from more radiocollared control groups. In the past, these statewide population assessments have been conducted approximately every 10 years. The next comprehensive statewide estimate of wolf distribution and numbers will be scheduled 5 years after federal delisting, and implementation of this plan.

Annual indices -- Annual changes in wolf distribution and abundance will be monitored by means of currently used indicators such as wolf depredation complaints, autumn scent station surveys, winter furbearer track surveys, and other observations of field personnel from all natural resources agencies. Such trend indicators likely will not identify small population changes or changes in specific areas, but an accumulation of evidence from multiple sources and/or multiple years might provide indications of overall wolf population trends.

Radio-telemetry -- Continuing area-specific telemetry monitoring of wolves will be encouraged. Emphasis will be placed on areas of wolf population concern, such as newly colonized regions and areas where conflicts with humans are likely. Such monitoring might be carried out directly by DNR, but also by other agencies or university scientists. The use of technological advancements such as satellite telemetry will be encouraged. Permits to conduct such research are authorized by DNR and as such have specific reporting criteria to ensure that the monitoring is helping to fulfill wolf management and conservation objectives.

Health -- Monitoring the health of wolves necessarily includes consideration of the effects of infectious diseases and parasites. Examples of health monitoring include collection and analysis of biological samples from live-captured wolves, analysis of wolf scats, and necropsies of dead wolves. Regular collection of pertinent tissues of live-captured or dead wolves will be initiated, and periodic assessments of wolf health will be carried out under authorization of DNR, especially when circumstances indicate that diseases or parasites may be adversely affecting portions of the wolf population.

Population management

Population goal -- Wolves in Minnesota will continue to be allowed to naturally expand their range in the state. To assure the continued survival of the wolf in Minnesota, the minimum statewide winter population goal is 1,600 wolves. There is no maximum goal. If the population falls under this recommended minimum, DNR will take appropriate

management actions to address the cause of the reduction and assure recovery to the minimum level in the shortest possible time.

Distribution -- Though the 1992 Recovery Plan identified specific wolf management zones with differing population goals within Minnesota, no such zones are identified here. No general public taking of wolves is recommended by this plan within the next 5 years (see **Population management activities** below), and killing of depredating wolves is recommended to continue to be allowed only at the site of depredations (see **Depredation management** below). Thus, wolves will continue to be protected on all public lands, but can be removed from private land (and in some cases, small areas of immediately adjacent public land). Because of the way in which public and private lands are distributed in Minnesota, a natural system of "zones" will continue to develop, as it has in the past. Where wolves are not in conflict with humans, they will be left alone; where they are in conflict with humans, problem wolves will be removed.

Population management activities -- Population management measures, including regular public taking or other options, will be considered by DNR in the future but not sooner than the 5-year post-delisting monitoring period by USFWS. If, in the future, public taking is authorized by the legislature, there will be opportunity for full public comment. Decisions on public taking will be based on sound biological data, including comprehensive population surveys and the results of depredation prevention and nonlethal control research.

Public Safety

No documented cases of wolves attacking and injuring people have occurred in Minnesota. Nevertheless, many people are sincerely concerned about the threat of wolves to human safety, citing recent documented attacks of wolves on people in Ontario, Canada, and in India, and observations in Minnesota of bolder behavior of wolves around human habitations since full protection was provided by ESA. In consideration of these safety concerns, DNR is recommending Statute changes to allow a person, at any time, to take a gray wolf in defense of the person's own life or the lives of others (Appendix II.). A person who takes a gray wolf in defense of human life must protect all evidence, and report the taking to a DNR Conservation Officer within 24 hours.

Depredation management

Administration -- DNR will assume administrative responsibility for an integrated wolf depredation management program. Subject to availability of state and federal funding, in addition to DNR Conservation Officers and County Extension Agents, DNR and/or MNDA may certify other agents (e.g., state, federal, and tribal employees) to carry out depredation management activities. DNR will contract for needed assistance with the USDA Wildlife Services program.

Approach -- DNR will use an integrated wildlife damage management approach to reduce animal losses to wolves, similar to that currently used by the USDA Wildlife Services wolf depredation program. This approach combines animal husbandry considerations, repellants and frightening devices, guard animals, killing problem wolves, and compensation payments to farmers. At farms where damage has been verified, depredating wolves will be killed by certified agents. The definition of depredation includes the killing of livestock by wolves, the killing of dogs that are under the supervised control of the owner, and the killing of livestock guard animals (including llamas, donkeys, and dogs).

New activities -- To increase the efficiency of the depredation management program, additional activities will be proposed. First, a handbook for wolf depredation investigations should be produced and all certified agents trained in its use. Second, a uniform evidence-reporting system should be developed, including photo-documentation of the depredation site. Third, a central public telephone contact (a toll-free number) should

be established to simplify loss reporting. Finally, a database of all reported losses of eligible animals to wolves, not just verified losses, should be developed; the database should also include information about losses to predator species other than wolves.

Best Management Practices -- BMPs are livestock husbandry and management practices that can result in the reduction and prevention of livestock depredation by wolves and other predators. A handbook of recommended BMPs should be developed and distributed to livestock owners. The use of these BMPs by livestock owners should be encouraged.

Nonlethal control by animal owners -- To help prevent depredation by wolves, DNR proposes legislation that allows a livestock or dog owner to, at any time, harass any wolf within 500 yards of people, buildings, dogs, livestock, or other domestic animals in a noninjurious, opportunistic manner. However, wolves may not be purposely attracted, tracked, searched-out, and then harassed. Wolves showing abnormal behavior should be reported to a DNR Conservation Officer.

Lethal control by animal owners -- DNR proposes legislation that allows owners (or their agents) of livestock, livestock guard animals, and dogs to take action to destroy wolves that pose an "immediate threat" to livestock, guard animals, or dogs. An immediate threat is when a wolf is observed in the act of pursuing or attacking. The mere presence of a wolf, or a wolf feeding on an already dead animal does not constitute an immediate threat. For livestock and guard animals, this action would be permitted only on property owned, leased, or occupied by the owner. In the case of dogs, this action would be permitted only for dogs under controlled supervision of the owner. When animal owners take action to kill a wolf, the following conditions would apply:

1. A livestock, livestock guard animal, or dog owner will report the action to a DNR Conservation Officer with 24 hours and protect all evidence associated with the action.
2. DNR will investigate all reported killing of wolves and will:
    a. keep written and photographic documentation of the kill site including any instances of poor husbandry that may have contributed to the attack occurring.

b. with livestock owners evaluate what, if any, BMP and nonlethal controls are needed to prevent future attacks, and develop with the owner a reasonable written and signed plan for implementation.

c. confiscate the wolf remains.

3. Agents will report any evidence of abuse of these conditions.
4. Legislation to be proposed at the time of federal delisting will further provide that failure to comply with the elements of this program, including failure to implement in a reasonable length of time the BMP/nonlethal control plan developed with the authorized agent, will result in loss of a livestock or dog owner's eligibility for future wolf damage compensation for a period of 1 year.
5. Salvageable wolf remains will remain in the control of the state or tribal authorities and may be disposed of only by donation or sale for educational purposes.
6. The application of this provision to allow animal owners to kill wolves will be reviewed annually (see **Plan monitoring and review** page 32) regarding the continuation, modification, or termination of this provision.
7. Monthly reports of activities under this provision will be made available to the public.

Depredation verification -- Verification of wolf depredation claims will continue to require an inspection of the depredation site by a certified agent. A finding that depredation by wolves has occurred shall be based upon physical and circumstantial evidence, including the presence and condition of remains of the carcass of an eligible animal; wolf tracks; the number and location of bites on the carcass and the method of killing; where the loss occurred; sightings of wolves in the area; and any other circumstances determined to be pertinent by the investigating agent. The certified agent will use the depredation handbook for wolf depredation investigations, complete the uniform evidence-reporting form, take photographs of the kill site, and record all reported losses of eligible animals (not just verified losses to wolves) in the database.

Lethal control by state agents -- If there are physical remains of wolf-killed livestock, livestock guard animals, or dogs, lethal control of wolves will be carried out by state certified contract trappers. If no physical remains are present but there is a compelling preponderance of evidence, or an accumulation of compelling evidence of killing by

wolves over time, then lethal control will also be carried out. Trapping or snaring will be authorized up to one mile from the site of the depredation on private and public land. Control activities will not exceed 30 days, unless additional verified wolf depredation occurs. Salvageable wolf remains obtained during depredation trapping will be retained by the state and disposition will be only for education purposes.

Compensation criteria -- When wolf depredation is verified by an investigating agent, compensation will be authorized. The current compensation program for wolf depredation on livestock will be continued, and DNR will propose compensation for the loss of livestock guard animals and dogs under the supervised control of the owner. Veterinary costs incurred as a result of wolf depredation will also be proposed to be a compensated loss.

When livestock, livestock guard animal, or dog owners experience losses and apply for compensation, the following conditions apply:

1. A livestock, livestock guard animal, or dog owner will report the depredation claim to an authorized agent, and protect all associated evidence.
2. For claims involving livestock or livestock guard animals, the investigating agent will record any deficiencies in the owner's adoption of BMPs developed by MNDA.
3. The MNDA Commissioner shall evaluate the record for conformance with BMPs, and provide the owner with a list of any BMP deficiencies.

Amount of compensation -- The amount of compensation paid to owners of livestock currently is capped by Minnesota Statutes at $750, but compensation closer to fair market value should be considered by the Minnesota Legislature. Compensation for the loss of guard animals (animals specifically bred, trained, and used to protect livestock from wolf depredation) should be the same as for livestock. Compensation for dogs not qualifying as guard animals, but under the supervised control of the owner, should be fair market value not to exceed $500.

Depredation research -- The Minnesota Legislature should appropriate $500,000 to be granted on a 1:1 matching basis to nonstate funding sources for ongoing research, development, and dissemination of BMPs and nonlethal means of wolf control to abate wolf depredation to livestock, livestock guard animals, and dogs. Farms actually

experiencing depredation by wolves should receive priority as research sites. The BMP research grant program should be developed and administered by MNDA, in consultation with DNR. To allow longer-term projects and to maximize the availability of funds over time, the $500,000 should be achieved by annual appropriations of $100,000 for 5 years.

Habitat management

Good wolf habitat includes areas where ungulate prey is abundant, where human-related sources of mortality are low, and that are sufficiently large and connected to maintain existing populations and ensure the continued exchange of dispersing unrelated wolves. Vegetation cover is significant only as it relates to these other factors because wolves are habitat generalists. DNR will continue to identify and manage currently occupied and potential wolf habitat areas to benefit wolves and their prey on public and private land, in cooperation with landowners and other management agencies.

Prey -- In Minnesota, white-tailed deer are the primary prey for most wolves, though in some areas with few deer (e.g., the far northeastern part of the state), moose are the main prey. Population and habitat management of deer and moose is primarily the responsibility of the DNR Section of Wildlife. DNR will continue to maintain healthy populations of these species by regulating deer and moose harvest by hunters, estimating population numbers and reproductive success, monitoring and improving deer and moose habitat, and enforcing laws. Deer and moose populations will continue to be managed in hunting management units that are based on habitat and environmental factors, land ownership and use, and human attitudes. Deer and moose population goals are designed to balance a variety of factors, including compatibility with habitats and ecosystems, sustainable harvests for hunters, deer observation and watching opportunities (aesthetics), and conflicts with humans such as vehicle accidents and crop depredation. Populations that provide sustainable harvests for hunters must be large enough to withstand natural mortality sources and still provide a harvestable surplus. Because wolf predation is one of several forms of natural mortality, any population capable of sustaining a hunting harvest will, by definition, also provide a healthy prey base for wolves. Area-specific ungulate populations are assessed through models that incorporate all known factors influencing population dynamics. Ungulate populations are managed by regulating hunting harvests and managing habitats.

Potential disturbance at den and rendezvous sites -- Both the Wisconsin and Michigan wolf management plans recommend seasonally protecting, from timber harvesting and road or trail construction, a zone within 110-880 yards for wolf dens and rendezvous sites, depending on the regularity of use of the den and the wolf management zone in which it occurs. The Superior and Chippewa national forests in Minnesota have similar recommendations. In Wisconsin and Michigan, such protection is deemed warranted because of the small size (compared to Minnesota) and recovering nature of the wolf populations in those two states, and because of the unknown but potential effects of human disturbance on pup survival. However, Minnesota's much larger wolf population is not vulnerable to the minor losses these disturbances might cause. In addition, wolves with pups in Minnesota and Wisconsin have been tolerant of nearby logging operations, moss harvesting work, military maneuvers, and road construction work.

Subpopulation connectivity -- Areas need to be of sufficient size to support a minimum of one to several wolf packs if they are to be identified as viable wolf habitat. However, for wolves to persist in these small areas for any length of time, they must be able to periodically "exchange" wolves with other subpopulations. In Minnesota, most of the occupied wolf range is contiguous; that is, most packs occur adjacent to or very near other packs. In addition, all wolves in Minnesota are connected with the much larger population inhabiting southern Canada. However, wolf habitat in Wisconsin is more fragmented, and somewhat isolated from the contiguous source population in Minnesota. The original source of Wisconsin's wolves was undoubtedly Minnesota, and continued exchange of wolves between the two states is desirable. Currently, no barriers to wolf dispersal exist between Minnesota and Wisconsin, but development of areas along the common border (such as urban sprawl) may impede future wolf movements. In cooperation with the Wisconsin Department of Natural Resources, DNR assessments of the effects of future development will be incorporated into long-term viability analyses of wolf populations in the interstate area.

Human-caused mortality

Wolf mortality due to human causes can be a major factor in either reducing wolf numbers or limiting population growth. Some of this mortality is accidental, such as

collisions with vehicles or trains. Other human-caused mortality is purposeful, either legal (wolf depredation trapping) or illegal (intentional shooting or trapping).

Accidental mortality -- Accidental mortality is not expected to significantly affect wolf population dynamics in Minnesota. Other than continued monitoring, efforts to reduce accidental mortality are unnecessary.

Illegal mortality -- Illegal wolf mortality results from a combination of opportunity and intent to violate the law. As evidenced by substantial wolf range expansion and population increases, illegal human-caused mortality has not constrained Minnesota wolves at the population level. However, illegal wolf mortality has the potential to impact local wolf numbers, especially where wolves are living in areas of high road density and human populations, where there is more human contact with wolves. A combination of education efforts, regulations, and enforcement will be used to reduce illegal wolf mortality. First, reducing animosity toward wolves might be helped by continuing to educate citizens about the effects of wolves on livestock, ungulates, and human activities. Education programs and information distribution will be encouraged and supported by DNR. Second, the opportunity to kill wolves may be reduced by restricting road and trail access to state forests and other lands. Motorized access into wolf habitat, and the level of human use of such access, has been shown to be a key factor in establishing and maintaining wolf populations. In the recent past, wolf packs rarely lived in territories where road densities were greater than about one mile of road per square mile of land. At such densities, it appeared that illegal killing of wolves exceeded a level at which wolf populations could sustain themselves. During winter 1988-89, it appeared that most wolf packs in Minnesota were located in areas with road densities less than1.1 miles of roads per square mile of land, and human population densities less than 10 people per square mile; and in areas with road densities less than 0.8 miles of road per square mile of land, and human population densities less than 21 people per square mile of land. The most recent analysis (the 1997-98 state wolf distribution survey) indicates that most wolves still live in such areas, but also that many more wolves are living in areas with much higher road and human densities. As more tolerant attitudes toward wolves increase and depredations by wolves are controlled, wolves can be expected to continue to expand their range into areas with more roads and human access. Given the current status of wolves, reducing current levels of road access is

not necessary to increase either wolf density or distribution. However, in areas of sufficient size to sustain one or more wolf packs, land managers should be cautious about adding new road access that could exceed a density of one mile of road per square mile of land, without carefully evaluating the potential effect on wolves. Finally, increases in DNR enforcement time and activities related to wolves will enhance the enforcement of regulations protecting wolves and decrease illegal human-caused wolf mortality.

Legal mortality -- USDA Wildlife Services has killed about 150 wolves annually, in recent years, in verified depredation situations. The number of wolves killed annually by depredation control is likely to increase, as wolves continue to expand their range into transitional forest-agriculture landscapes. However, the number of wolves legally killed in depredation situations has not prevented wolf range expansion and population increases, because this mortality has been less than 10 percent of the wolf population. Wolves have tremendous reproductive potential, and can withstand human caused mortality rates of 28-53 percent annually, and still maintain growing populations. The removal of depredating wolves will not be limited by population management objectives, unless the total number of wolves killed annually rises to a level that causes a statewide population decline.

Law enforcement

Administration and funding -- Legal protection has been a key to increasing wolf numbers and distribution in Minnesota. Due to a continuing increase in the workload of DNR Conservation Officers, and their assumption of primary responsibility for wolf regulations enforcement after delisting, increases in staff and resources will be needed. The Minnesota Legislature will be asked to provide the budget resources necessary for proper enforcement of wolf laws, regulations, and programs. Additional tribal conservation officers should be cross-deputized to increase law enforcement capabilities concerning wolves. Cooperation with federal law enforcement officials will continue.

Penalties, permits, and prohibitions -- Proposed enforcement and penalties for the illegal taking (pursuing, shooting, killing, capturing, trapping, snaring, including attempting to take, and assisting another person in taking) of wolves will be consistent with present statutes on the illegal taking of other game and nongame species. Restitution value will be established at $2,000.

Captive wolves and wolf-dog hybrids -- Wolves may be kept in captivity, provided they are legally obtained from licensed game farms or other authorized sources. In other situations where DNR permits are required, no permits will be issued for the purpose of keeping wolves as pets. The Minnesota Legislature should consider appropriate additional regulations regarding captive wolves, and wolf-dog hybrids, based on public safety concerns. The Legislature will be asked to prohibit the release of captive wolves and wolf-dog hybrids.

Public education and attitudes

The dissemination of factual information about wolves, their interactions with their environment, and their interactions with humans is a key component of successful wolf conservation. Such education efforts have been undertaken in Minnesota by a variety of private organizations and individuals, as well as state and federal agencies. The degree to which this information is useful and worthwhile depends on its presentation, accuracy, and relevancy.

Program and material development -- The major goal of DNR wolf education efforts will be to assure that timely and accurate information about wolves and wolf management is available to the public. Current information on the history of the wolf and its management in Minnesota, wolf behavior and biology, the wolf as part of the ecosystem, wolf status, human-wolf coexistence, and strategies for dealing with problem wolves will be available to all Minnesotans, in multiple formats.

Collaboration with other organizations -- Many private, nonprofit organizations currently provide educational programs and materials about wolves. Foremost is the International Wolf Center, at Ely, MN (IWC), which is focused exclusively on wolf education. Rather than "reinventing the wheel," DNR will collaborate and cooperate with IWC and other organizations to achieve its wolf education goals. Collaboration will include providing data, reports, news releases, and other information for distribution by other organizations, and/or incorporation into their educational programming. Collaboration may also include financial and other resource sharing and partnerships.

Public and media relations -- DNR staff will provide access to and information about wolf management by meeting with the public, compiling reports, collecting data, issuing news releases, and preparing information packages for the public and the media.

Ecotourism -- Ecotourism is a recent and expanding additional use of natural resources in Minnesota. Its intent is to derive (for the private sector) financial benefits as the public enjoys and learns about large, healthy natural ecosystems with diverse wildlife populations. Wolves in Minnesota are a keystone ecotourism species, drawing tourists from around the world who come to view wolf tracks, scats, and kill sites, and to hear wild wolves howl. There is no information or research data that increasing human-wolf interactions associated with ecotourism is detrimental to wolves. Consequently, responsible wolf ecotourism will be encouraged.

Assessment of public attitudes -- Statewide surveys of public knowledge of and attitudes toward wolves and wolf recovery are extremely useful to wolf recovery and conservation. Understanding changes in public attitudes toward wolves is important for continued wolf existence, and periodic surveys (every 5 years) to assess shifts in public attitude and knowledge will be encouraged. Accurate information on public attitudes will help to ensure that wolf management adequately addresses citizens' needs, in addition to wolf conservation needs.

Research

Wolf research is expensive, and DNR-funded wolf research efforts should be focused on the topics most pertinent to achieving the goals of this management plan. Despite the abundance of wolf research in Minnesota and elsewhere, there are still several important areas of research that should be addressed.

Population assessment -- Because population assessment is the foundation for monitoring the status of wolves and the effectiveness of management programs, it is one of the most important aspects of a wolf management and conservation program. Population assessment methods must continue to be based on the very best science and data available. The comprehensive statewide assessment of wolf distribution and density in Minnesota conducted in 1997-98 was state of the art, but in future assessments additional investigations will be conducted to verify the accuracy of reports of observers and to increase the actual counts of pack sizes. Repeat surveys by independent observers, including those collecting radio-telemetry data on wolves in various areas, will also be conducted. In addition to the comprehensive surveys, annual wolf population assessments based on annual population trend surveys will be conducted to ensure against any

catastrophic changes in wolf distribution and numbers that could occur in the intervals between comprehensive surveys. Additional annual indices will be investigated, to improve the accuracy of annual wolf population trend assessments.

Livestock interactions -- Continued research is needed for developing BMPs that will result in reduced wolf depredation to livestock, livestock guard animals, and dogs. Foremost is research on nonlethal means of wolf behavioral control to abate wolf depredation, including identification of the behaviors of depredating wolves and improvements in our ability to predict depredation losses. Farms experiencing depredation by wolves should be used as sites for such research. Significant progress can be made with proposed collaborative financing provided on a matching basis from the Minnesota Legislature and any nonpublic funding source.

Prey interactions -- More information is needed on the effects of wolf predation and severe weather on deer numbers. Although there has been significant research on this topic in Minnesota, predicting the long-term effects of winter weather and wolf predation on deer populations is difficult. Long-term monitoring of deer and wolf populations in various portions of Minnesota will be a DNR research priority, especially as it relates to the role that wolves may play in regulating deer at relatively low population densities.

Disease monitoring -- Standardized and comprehensive disease testing has not been part of Minnesota wolf management activities, although significant disease research has occurred in Minnesota and incidental records are maintained by DNR. Wolves in Minnesota have greatly increased their distribution and numbers in Minnesota during the past 20 years, despite numerous documentations of various diseases. Nevertheless, disease is a potentially important mortality factor affecting wolf populations. DNR does not intend to initiate wolf disease studies, but will collaborate with other investigators and continue monitoring disease incidence.

Program administration

Personnel -- The wolf management program in Minnesota should be under the immediate direction of a Wolf Specialist. DNR will propose this new position at the level of senior Natural Resource Specialist in the DNR Division of Fish and Wildlife, with duties focused exclusively on wolf management. This person will be responsible for administering wolf management, including coordinating management and monitoring

efforts within DNR; serving as liaison with USFWS, USDA Wildlife Services, MNDA, County Extension, and tribal authorities; coordinating data collection and information dissemination; and recommending research efforts that pertain to wolf conservation in Minnesota. In addition, DNR proposes that once federal delisting is accomplished and full implementation of this plan occurs, a Wolf Research Biologist position should be created. This position will directly conduct wolf population assessments, propose and conduct wolf research, and provide DNR with the necessary professional expertise to implement the wolf management plan. Finally, DNR proposes the addition of three Conservation Officers, to ensure that enforcement of various provisions of the wolf plan is adequate.

Funding -- State funding for implementing the management plan should come from sources other than the DNR Game and Fish Fund. Wolves are a public resource valued for many different reasons by Minnesota citizens, and thus the fiscal support for their management should come from the general public. The costs for wolf research and management have been substantial in the past, and will continue to be substantial in the future. DNR estimates the total annual cost to the state of Minnesota for full implementation of this plan, including depredation activities but not including MNDA staff costs, to be about $845,000 (Appendix IV.).

Interagency cooperation -- Cooperation between governmental agencies is of the utmost importance for ensuring the continued survival and competent management of wolves in Minnesota. Various state, federal, county, and tribal landowners and authorities have been participating in wolf management activities, and this must continue in the future through partnerships. Legal obligations commit agencies and organizations to participate in wolf management, and cooperation will continue to be invited by DNR, including but not limited to annual review of wolf management plan implementation (see **Plan monitoring and review** below).

Volunteers -- In order to enhance management efforts, participation of volunteers and volunteer organizations will be sought to help produce and present general wolf education programs and provide matching funds for research and development of wolf conservation strategies. Private individuals, schools and colleges, conservation organizations, and other partners will help achieve wolf management goals in Minnesota.

Plan monitoring and review

In addition to regularly reported assessments of wolf management progress, DNR will convene a group, including all groups participating in the 1998 Roundtable, to review and comment on management plan implementation and progress. This review will occur annually for five years, following federal delisting of wolves and the initiation of state management. The group will be asked to assess the degree to which each part of the plan has been successfully implemented, the effects of implementation on changes in wolf population levels and distribution, and changes in wolf interactions with humans. A written summary of conclusions of the group's assessments and any recommendations will be submitted to the Commissioner of DNR after each annual meeting.

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APPENDIX I

WOLF MANAGEMENT ROUNDTABLE
CONSENSUS RECOMMENDATIONS

Wolf Management Roundtable Consensus Recommendations

On August 28, 1998, the Minnesota wolf management roundtable reached consensus on the following package of wolf management recommendations:

Wolf Population Management

Wolves in Minnesota will be allowed to expand statewide. Population management measures, including public taking or other options, will be considered in the future but not sooner than the 5-year post-delisting monitoring period of the U.S. Fish and Wildlife Service. If public taking is authorized by the legislature, the Department of Natural Resources will prepare and publish a rule, with opportunity for full public comment. Decisions on public taking will be based on sound data, including but not limited to the "5-year census" and the results of nonlethal control research.

To assure continued survival of the wolf in Minnesota, the roundtable recommends a minimum statewide population of 1,600 animals. This number is not a maximum population goal. If the population falls under the recommended minimum, appropriate management actions will be taken to address the cause of the reduction and assure recovery to the minimum level in the shortest possible time.

Implementation:DNR, by the Wolf Management Plan
Legislature, by the 1999 Bill

Wolf Population Monitoring

The roundtable accepts the current methodologies that the Minnesota DNR is using to indicate wolf population abundance and distribution, with the understanding that any results are estimates which may be higher or lower than the actual population. The roundtable recommends that for future wolf management decisions, the methodologies should move as close as possible toward an actual census. The roundtable understands that this movement toward a census for now will include:

a. standardized training of the data collectors and objective verification of their data
b. more continuous tracking and verification of information from more radio-collared control groups.

Implementation:DNR, by the Wolf Management Plan

Wolf Depredation Management

Issue 1: Animals/Damages Covered by the Depredation Program

The roundtable supports the continuation of a compensation program for wolf depredation to livestock.

The roundtable recommends a compensation program for wolf depredation to dogs under the supervised control of the owner, and livestock guard animals including llamas, donkeys and, dogs.

The roundtable recommends that veterinary costs incurred as a result of wolf depredation be included as a compensated loss.

Implementation:Legislature, by a future bill
DNR, by the Wolf Management Plan

Issue 2: Eligibility and Verification for Compensation and Lethal Control

The roundtable endorses the language in MN Rule 1515.3500 for determining eligibility for compensation, with the following additional recommendations:

a. In addition to Conservation Officers and county extension agents, other agents (State, Federal, Tribal) certified by the State should be included.

b. A handbook for wolf depredation investigations should be produced and all certified agents trained.

c. A uniform evidence-reporting form should be developed including photographs of the kill site for the file.

d. A central public contact (1-800 number) should be established.

e. A database of all reported losses, not just verified losses, should be developed. the database should include information on all predator losses.

f. The statutory requirement for a carcass to be present should be eliminated.

g. MN Rule 1515.3500 should be amended to be specific to wolves, and not endangered species.

If there are physical remains of a wolf-killed animal, lethal control may be carried out by a government agency.

Note: Consensus was not reached on the level of verification required to initiate government agency control actions if physical remains are not present.

Implementation:Legislature, by a future Bill
DNR, by the Wolf Management Plan

Issue 3: Best Management Practices

The roundtable supports current legislative efforts to encourage the use of Best Management Practices (BMPs). The roundtable believes that the use of BMPs is critical to the long-term survival of the wolf in Minnesota, and urges the Minnesota Legislature to appropriate $500,000 on a matching basis with any non-public funding source for ongoing research, development, and dissemination of BMPs and nonlethal means of wolf control to abate wolf depredation to livestock. The roundtable suggests that farms experiencing livestock depredation be used as research sites.

Implementation:Legislature, by a future Bill
DNR, by the Wolf Management Plan

Issue 4: Preventative Depredation Measures

Owners of livestock, livestock guard animals, and dogs and/or their permitted agents may take action to destroy wolves that pose an "immediate threat" to human life, livestock, guard animals, or dogs. This action is permitted only on the livestock owner's property. In the case of dogs, this action is permitted only for dogs under the controlled supervision of the owner. "Immediate threat" is defined as follows: the wolf is observed in the act of pursuing or attacking. The mere presence of a wolf or a wolf feeding on an already dead animal does not constitute an immediate threat.

At any time, a farmer or dog owner may first "harass" any wolf within 500 yards of people, buildings, dogs, livestock, or other domestic animals in a noninjurious, opportunistic manner. Wolves may <u>not</u> be purposely attracted, tracked, searched- out or chased and then harassed. Wolves showing abnormal behavior will be reported to an authorized agent for action.

The following conditions apply when taking action to destroy a wolf:

a. A farmer or dog owner will report the action to an authorized agent within 24 hours and protect all evidence

b. The agent will investigate all reported taking of wolves and will:

1. keep written and photographic documentation of the kill site and any instances of poor husbandry that contributed to the attack occurring

2. with farmers but not dog owners, evaluate what, if any, best management practices and nonlethal controls are needed to prevent future attacks and develop a reasonable written and signed plan with the farmer for implementation

3. confiscate the wolf carcass(es)

c. State agents will report any evidence of abuse of this rule

d. Failure to comply with the elements of this program, including failure to implement in a reasonable length of time the BMPs and nonlethal control plan developed with the authorized agent, or abuse of the program will result in loss of a farmer or dog owner's eligibility for future wolf damage compensation for a period of one year or until they implement the best management practices/nonlethal control plan

e. Pelts will remain in the control of the state or tribal authorities and may be disposed of only by donation or sale for educational purposes

f. This program will be reviewed at the annual gathering of roundtable participants who will make recommendations regarding the continuation, modification, or termination of this program

g. Monthly reports of this program will be made available to the public.

Implementation: *Legislature, by the 1999 Bill*
DNR, by the Wolf Management Plan
Legislature, by a future Bill

Issue 5: Removal of Verified Depredating Wolves

The roundtable recommends that the Department of Natural Resources assume administrative responsibility for an integrated wolf depredation program funded from the general fund. The roundtable recommends that DNR contract for assistance with the USDA/Wildlife Services program. Investigation of a kill site and verification of a wolf kill will be conducted by a state agent (as defined in Issue 2, a). Trapping may be accomplished by state certified contract trappers. Wolf pelts will be retained by the state and disposition will be only for educational purposes.

Implementation: *DNR, by the Wolf Management Plan*

Issue 6: Amount of Compensation

The roundtable recommends that the legislature consider compensation closer to fair market value than the $750 cap currently in law for verified wolf kills of livestock.

The roundtable recommends that compensation for the loss of guard animals (animals specifically bred, trained, and used to protect livestock from wolf depredation) be the same as for livestock.

The roundtable recommends that compensation for dogs not qualifying as guard animals, but under the supervised control of the owner, be at fair market value not to exceed $500.

Implementation: *Legislature, by a future Bill*
DNR, by the Wolf Management Plan

Habitat Management

DNR will identify currently occupied and potential wolf habitat areas with the objective of managing habitat to benefit wolves and their prey on public land and in cooperation with private, corporate, and tribal landowners. Elements of wolf habitat that need to be considered include but are not limited to:

a. human access
b. disturbance at den and rendezvous sites
c. corridors and linkages.

Implementation: *DNR, by the Wolf Management Plan*

Enforcement

Enforcement and penalties for the illegal taking (killing, injuring, beating, harassing, stalking, baiting/poisoning and other activities having the likelihood of injury or attempt to do the same) of wolves should be consistent with present statutes on the illegal taking of game. Fine levels should reflect the unique nature of the wolf. The roundtable further recommends that the restitution value of the wolf be established at $2,000. Injury to wolves caused by guard dogs used in the traditional manner is not considered illegal taking.

Due to the increased workload of conservation officers, the roundtable recognizes the need to substantially increase the number of conservation officers as well as the resources available to them. The roundtable urges the legislature to provide the general fund resources necessary for proper enforcement. The roundtable urges cross-deputization of additional tribal

conservation officers and continued cooperation with federal law enforcement officials.

Implementation: *Legislature, by the 1999 Bill*
DNR, by the Wolf Management Plan
Legislature, by a future Bill

Education

The management plan should include an education component, providing information about:

a. the history of the wolf in Minnesota
b. wolf management in Minnesota
c. wolf behavior and biology
d. the wolf as part of the ecosystem
e. wolf status
f. human-wolf coexistence
g. contacts for additional information about the wolf
h. strategies for dealing with wolves.

Implementation: *DNR, by the Wolf Management Plan*

Ecotourism

The roundtable recommends that DNR address ecotourism in the management plan.

Implementation: *DNR, by the Wolf Management Plan*

Wolf-dog Hybrids and Captive Wolves

a. The release of wolf hybrids and captive wolves into the wild should be banned.
b. The legislature should consider appropriate regulatory measures, based on public safety concerns.

Implementation: *Legislature, by the 1999 Bill*
DNR, by the Wolf Management Plan
Legislature, by a future Bill

Management Plan Monitoring

The Department of Natural Resources will convene a group, including all groups participating in the existing roundtable, on an annual basis to review and comment on management plan implementation.

Implementation: *DNR, by the Wolf Management Plan*

Funding for Plan Implementation

State funding for implementing the management plan should come from sources other than the game and fish fund.

Implementation: *Legislature, by a future Bill*
DNR, by the Wolf Management Plan

APPENDIX II

WOLF MANAGEMENT BILL
1999 MINNESOTA LEGISLATURE

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF MINNESOTA:

Section 1. Minnesota Statutes 1998, section 97A.331, is amended by adding a subdivision to read:

Subd. 7. [GRAY WOLF.] (a) A person who takes, harasses, destroys, buys, sells, possesses, transports, or ships a gray wolf in violation of the game and fish laws is guilty of a gross misdemeanor.

(b) The restitution value for a gray wolf under section 97A.345 is $2,000. This amount may be amended by rule.

Sec. 2. Minnesota Statutes 1998, section 97B.645, is amended to read:

97B.645 [GRAY WOLVES.]

Subdivision 1. [USE OF DOGS AND HORSES PROHIBITED; USE OF GUARD ANIMALS.] A person may not use a dog or horse to take a ~~timber~~ gray wolf. A person may use a guard animal to harass, repel, or destroy wolves only as allowed under subdivisions 3, 4, 5, and 6.

Subd. 2. [PERMIT REQUIRED TO SNARE.] A person may not use a snare to take a wolf except under a permit from the commissioner.

Subd. 3. [DESTROYING GRAY WOLVES IN DEFENSE OF HUMAN LIFE.] A person may, at any time and without a permit, take a gray wolf in defense of the person's own life or the life of another. A person who destroys a gray wolf under this subdivision must protect all evidence and report the taking to a conservation officer within 24 hours after the gray wolf is killed.

Subd. 4. [HARASSMENT OF GRAY WOLVES.] To discourage gray wolves from contact or association with people and domestic animals, a person may, at any time and without a permit, harass a gray wolf that is within 500 yards of people, buildings, dogs, livestock, or other domestic animals. A gray wolf may not be purposely attracted, tracked, or searched out for the purpose of harassment. Harassment methods that cause physical injury to a gray wolf are prohibited.

Subd. 5. [DESTROYING GRAY WOLVES THREATENING LIVESTOCK OR GUARD ANIMALS.] An owner of livestock and guard animals, and the owner's agents, may, at any time and without a permit, shoot a gray wolf when the gray wolf is posing an immediate threat to livestock or a guard animal on property owned, leased, or occupied by the owner. A person who destroys a gray wolf under this subdivision must protect all evidence and report the taking to a conservation officer within 24 hours after the gray wolf is killed.

Subd. 6. [DESTROYING GRAY WOLVES THREATENING DOGS.] An owner of a dog may, at any time and without a permit, shoot a gray wolf when the gray wolf is posing an immediate threat to a dog under the controlled supervision of the owner. A person who destroys a gray wolf under this subdivision must protect all evidence and report the taking to a conservation officer within 24 hours after the gray wolf is killed.

Subd. 7. [INVESTIGATION OF REPORTED GRAY WOLF TAKINGS.] (a) In response to a reported gray wolf taking under subdivision 3, 5, or 6, the commissioner shall:

(1) investigate the reported taking;

(2) collect written and photographic documentation of the

circumstances and site of the taking, including but not limited to documentation of animal husbandry practices;

(3) confiscate the remains of the gray wolf killed; and

(4) dispose of any salvageable gray wolf pelt confiscated under this subdivision by sale or donation for educational purposes.

(b) The commissioner shall produce monthly reports of activities under this subdivision.

(c) In response to a reported gray wolf taking under subdivision 5, the commissioner shall recommend what, if any, livestock best management practices and nonlethal wolf depredation controls are needed to prevent future wolf depredation and shall work with the owner to develop a written and signed plan with a reasonable time frame for its implementation. Any best management practices recommended by the commissioner must be consistent with the best management practices developed by the commissioner of agriculture under section 3.737, subdivision 5.

Subd. 8. [NO OPEN SEASON.] There is no open season for gray wolves.

Subd. 9. [RELEASE OF WOLF-DOG HYBRIDS AND CAPTIVE GRAY WOLVES.] A person may not release wolf-dog hybrids or captive gray wolves without a permit from the commissioner.

Subd. 10. [FEDERAL LAW.] Notwithstanding the provisions of this section, a person may not take, harass, buy, sell, possess, transport, or ship gray wolves in violation of federal law.

Subd. 11. [RULES.] The commissioner may adopt rules that may be necessary to implement and enforce this section.

Subd. 12. [DEFINITIONS.] (a) For purposes of this section, the terms used have the meanings given.

(b) "Guard animal" means a donkey, llama, dog, or other domestic animal specifically bred, trained, and used to protect livestock from gray wolf depredation.

(c) "Immediate threat" means observing a gray wolf in the act of pursuing or attacking livestock, a guard animal, or a dog under the supervised control of the owner. The mere presence of

a gray wolf or a gray wolf feeding on an already dead animal is not an immediate threat.

Sec. 3. [97B.646] [GRAY WOLF MANAGEMENT PLAN.]

The commissioner shall adopt a gray wolf management plan that includes goals to ensure the long-term survival of the gray wolf in Minnesota and to reduce conflicts between gray wolves and humans.

Sec. 4. [REPORT TO THE LEGISLATURE.]

The commissioner of natural resources must submit a report to the chairs of the senate and house environment and natural resources policy and funding committees by May 15, 1999. The report must provide recommendations on appropriations needed to accomplish the gray wolf management plan.

Sec. 5. [REVISORS INSTRUCTION.]

The revisor of statutes shall change the phrase "timber wolf" wherever it appears in Minnesota Statutes and Minnesota Rules to "gray wolf."

APPENDIX III

FUTURE WOLF MANAGEMENT BILL

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF MINNESOTA:

Section 1. Minnesota Statutes 1998, section 3.737, subdivision 1, is amended to read:

Subdivision 1. [COMPENSATION REQUIRED.] (a) Notwithstanding section 3.736, subdivision 3, paragraph (e), or any other law, ~~a livestock owner~~ an owner of livestock, guard animals as defined under section 97B.645, subdivision 12, or dogs under supervised control of the owner shall be compensated by the commissioner of agriculture for ~~livestock~~ such animals that ~~is~~ are injured or destroyed by a ~~timber~~ gray wolf or ~~is~~ so crippled by a ~~timber~~ gray wolf that ~~it~~ they must be destroyed. The owner is entitled to the fair market value of the destroyed ~~livestock~~, animals or the actual veterinary costs incurred for treatment of injured animals, not to exceed ~~$750~~ $..... per livestock or guard animal injured or destroyed, as and not to exceed $500 per dog injured or destroyed. Fair market value shall be determined by the commissioner, upon recommendation of a university extension agent and, a conservation officer, or other agent certified by

the commissioner.

(b) ~~Either~~ The university extension agent ~~or the~~, conservation officer, or other certified agent must make a personal inspection of the site. ~~The agent or the conservation officer must take into account factors in addition to a visual identification of a carcass when making a recommendation to the commissioner.~~ The commissioner, upon recommendation of the university extension agent and, conservation officer, or other certified agent shall determine whether the livestock, guard animal, or dog under supervised control of the owner was injured or destroyed by a ~~timber~~ gray wolf and any deficiencies in the owner's adoption of the best management practices developed in subdivision 5. The commissioner may authorize payment of claims only if the university extension agent and the, conservation officer have, or other certified agent has recommended payment. The owner shall file a claim on forms provided by the commissioner and available at the university extension agent's office.

Sec. 2. Minnesota Statutes 1998, section 3.737, subdivision 4, is amended to read:

Subd. 4. [PAYMENT, DENIAL OF COMPENSATION.] (a) If the commissioner finds that the livestock owner has shown that the loss of the livestock, guard animal, or dog under supervised control of the owner was likely caused by a ~~timber~~ gray wolf, the commissioner shall pay compensation as provided in this section and in the rules of the department.

(b) When a livestock or guard animal owner is not in compliance with a plan for livestock best management practices or nonlethal wolf depredation controls specifically recommended by the commissioner of natural resources under section 97B.645, subdivision 7, paragraph (c), the owner is not eligible for compensation for livestock or guard animal losses as provided in this section for a period of 12 months following the implementation date in the recommended plan.

(c) For a ~~timber~~ gray wolf depredation claim submitted by a livestock or guard animal owner after September 1, 1999, the

commissioner shall, based on the report from the university extension agent and, conservation officer, or other certified agent, evaluate the claim for conformance with the best management practices developed by the commissioner in subdivision 5. The commissioner must provide to the livestock or guard animal owner an itemized list of any deficiencies in the ~~livestock~~ owner's adoption of best management practices that were noted in the university extension agent's or, conservation officer's, or other certified agent's report.

~~(c)~~ (d) If the commissioner denies compensation claimed by an owner under this section, the commissioner shall issue a written decision based upon the available evidence. It shall include specification of the facts upon which the decision is based and the conclusions on the material issues of the claim. A copy of the decision shall be mailed to the owner.

~~(d)~~ (e) A decision to deny compensation claimed under this section is not subject to the contested case review procedures of chapter 14, but may be reviewed upon a trial de novo in a court in the county where the loss occurred. The decision of the court may be appealed as in other civil cases. Review in court may be obtained by filing a petition for review with the administrator of the court within 60 days following receipt of a decision under this section. Upon the filing of a petition, the administrator shall mail a copy to the commissioner and set a time for hearing within 90 days of the filing.

Sec. 3. Minnesota Statutes 1998, section 3.737, subdivision 5, is amended to read:

Subd. 5. [~~TIMBER~~ GRAY WOLF BEST MANAGEMENT PRACTICES.] (a) By September 1, 1999, the commissioner, in consultation with the commissioner of natural resources, must develop best management practices to prevent ~~timber~~ gray wolf depredation on livestock farms. The commissioner shall, subject to availability of funds appropriated for this purpose, develop and administer a 1:1 matching grant program for research, development, and education on best management practices to prevent gray wolf depredation on

livestock farms.

(b) Owners of livestock or guard animals that have previously received claims under this section shall receive priority, at their request, to provide sites and otherwise act as cooperators for best management practice research and development projects funded under this section.

(c) The commissioner shall periodically update the best management practices when new practices are found by the commissioner to prevent ~~timber~~ gray wolf depredation on livestock farms.

(d) The commissioner must provide an updated copy of the best management practices for ~~timber~~ gray wolf depredation to all livestock owners who are still engaged in livestock farming and have previously submitted livestock claims under this section.

Sec. 4. Minnesota Statutes 1998, section 3.737, is amended by adding a subdivision to read:

Subd. 6. [COMMISSIONER'S DUTIES.] To carry out this section, the commissioner shall:

(1) develop a training program to train and certify investigating agents, including university extension agents, conservation officers, and other agents;

(2) provide investigating agents certified by the commissioner under clause (1);

(3) develop a handbook for gray wolf depredation investigations to be used by certified agents;

(4) develop a uniform evidence reporting form for depredation investigations;

(5) establish and publicize a toll-free telephone number for reporting depredations; and

(6) establish and maintain a database of all reported losses, including losses to predators other than gray wolves.

APPENDIX IV

WOLF MANAGEMENT PLAN BUDGET

WOLF MANAGEMENT PLAN BUDGET

Program/Activity	First fiscal year following federal delisting	Annual Ongoing Base
Department of Natural Resources		
Wildlife Staff (2 FTE):		
Wolf Specialist (1 FTE)	$70,000	$70,000
Wolf Research Biologist (1 FTE)	$70,000	$70,000
Support staff (0.5 FTE)	$20,000	$20,000
Population Monitoring:	$100,000	$100,000
Depredation:		
Wolf Control	$200,000	$200,000
Enforcement Staff (3 FTE):	$300,000	$210,000
Education/Public Participation:	$25,000	$25,000
Department of Agriculture		
Depredation:		
Compensation*	$50,000*	$50,000*
Best Management Practices:	$100,000 (for 5 years)	$100,000
Total Wolf Program Costs:	$935,000	$845,000

*In addition to the current base appropriation of about $50,000