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DRAFT PLAN

FOR THE RECOVERY OF THE
NORTHERN ROCKY MOUNTAIN WOLF

PREPARED BY THE
NORTHERN ROCKY MOUNTAIN WOLF
RECOVERY TEAM

JANUARY 1978

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RECOVERY PLAN

January 1978

Prepared by the

Northern Rocky Mountain Wolf Recovery Team

* * *

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Preface

The Northern Rocky Mountain Wolf (NRMW) Recovery Plan proposes and outlines the steps necessary for the re-establishment and maintenance of viable populations in portions of its former range where feasible. The protection of the scattered remnants, and the mechanisms necessary to resolve conflict situations are of paramount importance to attain this goal. Taxonomic questions will have to be settled prior to specific plans for re-establishment by re-introduction. Identification of essential habitat and species requirements needs further investigation. For these reasons the plan is general in scope and does not discuss specific re-establishment areas. The reality is that there will be few places where viable wolf populations can be re-established and maintained within the former range of NRMW.

The recovery team has addressed itself only to the situation in the contiguous United States, recognizing that there are wolves across the border in Canada adjacent to some of the areas we discuss. The plan is intended to provide direction and coordination for efforts toward recovery of at least one viable NRMW population in the lower 48 states.

We wish to express our particular appreciation to John Weaver, not only for use of his study results, but for his considerable contribution as an observer at team meetings. We also appreciate the participation of Glen Cole, Dick Norell, Bill Cook, Joe Helle, L. D. Mech, and others.

Part 1

INTRODUCTION

The Northern Rocky Mountain wolf (Canis lupus irremotus) is one of 32 subspecies or geographic races of the gray wolf occurring around the world (Mech 1970), 24 of which originally inhabited North America (Hall and Kelson 1959). Although there is a trend among taxonomists to recognize fewer subspecies of wolves, the Northern Rocky Mountain wolf is still considered a distinct subspecies by the U. S. Fish and Wildlife Service (1973).

The Northern Rocky Mountain wolf (NRMW) occurred historically throughout the eastern third of Washington and Oregon, all of Idaho, all but the northeastern third of Montana, the northern two-thirds of Wyoming, the Black Hills of South Dakota, the southern third of Alberta and the southeast corner of British Columbia (Fig. 1). Presently (Fig. 2), its range has been greatly reduced to scattered sightings centered in western Montana, and northwestern Wyoming. In 1973 the Northern Rocky Mountain wolf was listed by the U. S. Secretary of Interior as "endangered" and became legally protected in August, 1974, under the Endangered Species Act of 1973. Wolves have been protected in Montana since 1975. State laws in Idaho and Wyoming currently (1976) classify wolves as predators with provisions for bounties, although the Endangered Species Act protects them notwithstanding state law.

Historical Range

During the latter half of the 19th century, buffalo hunters, settlers, and others decimated the herds of buffalo and other ungulates that roamed this area and were prey for wolves. Concurrent with the decline in native ungulates was an increase in numbers of domestic livestock. This shift

occurred very rapidly and it was not surprising then that wolves turned to alternate prey, thereby coming in direct conflict with man. Some "buffalo hunters" became "wolfers," bounties were initiated by local governments and ranchers, and the federal government hired professional trappers. Some wolves became notorious livestock killers (Curnow 1969) and large bounties were offered for their capture. These wolves, by becoming accustomed to domestic stock as their prey, created fear and hatred against all wolves.

Wolves inhabited the Yellowstone area in unknown but seemingly low densities during the latter 1800's but were subject to early exploitation (1870's) and later control (1914-1926) triggered by a noticeable population increase in northeast Yellowstone about 1912. During 1914-1926, a minimum of 136 wolves, including about 80 pups, were killed. Post-whelping populations of 30-40 wolves may have occurred around 1920. After wolf control within the Park ceased (1926), 35 "probable" reports involving 58 large canids were recorded 1927-1966. Observations of singles or pairs constituted 83 percent of the reports, most of which came from the northeast and northwest areas of the Park. Resident wolf packs did not persist after the 1930's (Weaver 1977). Glacier National Park was created in 1910, but active predator control programs, including strychnine poisoning, occurred until the early 1930's (Singer 1975a).

Records of wolves taken by government trappers in this region have been extracted from U. S. Fish and Wildlife Service files and examined. Apparently, through 1926, wolves were taken regularly and in fair numbers, but in the past 50 years only occasional individuals have been taken. The peak of control efforts, particularly with strychnine, occurred in

Figure 1. Historical distribution of the northern rocky mountain wolf
(*Canis lupus irremotus*).

the early 20's in national parks, national forests, and other lands throughout the Rocky Mountain region. Although wolf populations were apparently decimated, it is important to note that individuals have been taken occasionally in the past 50 years. Aulerich (1964) stated that any wolves left in the western states probably inhabit wild areas of large national forests.

Reasons for Decline

According to Young and Goldman (1944) and Mech (1970) the population decline of the eastern timber wolf was a result of: 1) intensive human settlement, 2) direct conflict with domestic livestock, 3) a lack of understanding the animal's ecology and habits, 4) fears and superstitions about wolves, and 5) the extreme control programs designed to eradicate it. These factors seem to have been cause for decline in all the wolf populations within the United States and are applicable to the NRMW. Threatened wildlife of the United States (USFWS 1973) lists land development, loss of habitat, poisoning, trapping, hunting, and the wolf's inability to adapt to most of man's development activities as reasons for decline of the Northern Rocky Mountain wolf.

Current Status

The recovery team has functioned as a central gathering place for information on the current status of the NRMW. We have not conducted studies but have used extensively the information provided by two studies generated by team participants. We have also drawn on reports collected and evaluated by personnel of participating groups and agencies.

Several recent studies have been very helpful. Singer (1975a+b) working in and around Glacier National Park and Vining (1975) working in northwestern Wyoming attempted to document wolf occurrence in their study areas. Carbyn (1974) made a valuable recent study in Jasper National Park, which is considerably north of indicated NRMW range but somewhat similar ecologically. Weaver (1977) collected data in and around Yellowstone National Park from 1975 to 1977. Day (1977) reports on observations collected in Montana by the Wolf Ecology Project, University of Montana from 1972 through 1976; 1977 progress on this project is reported by Ream, Harris and Mattson (1977).

Two studies in particular have provided much of the current information: the Wolf Ecology Project and the Weaver survey. Participants in these studies, together with the team, developed standard observation forms for use in recording field data and interviewing observers. One form (Appendix 1) was used for wolf sightings and the other (Appendix 2) for wolf sign observations. Numerous local residents, outfitters, hunters, backpackers, trappers, loggers, and agency personnel were contacted. Since almost nothing was known about wolves in the Northern Rocky Mountains prior to this work, this appeared to be the best way to obtain preliminary information on this rare and elusive animal. Day (1977) discusses the biases inherent in this approach and the limitations of using observations provided by others. Criteria used to determine acceptance of a report included experience and reliability of the observer, circumstances of the observation, and description of the animal and/or sign which would distinguish it from other animals.

Figure 2. Current approximate distribution of the northern rocky mountain wolf (*Canis lupus irremotus*).

Despite the biases and limitations, wolf observations have been made regularly in certain areas by well-qualified individuals. Some areas regularly produce reports which correspond in terms of color and number of animals involved. The reports cannot be used to determine true distribution and actual numbers of wolves in the northern Rockies, but, if used carefully, they can be used to give indications of areas where wolf occurrence is most likely.

Montana Status

The Wolf Ecology Project has collected 315 good or probable wolf reports and rejected an additional 109 as questionable but possible. Day (1977) analyzed 278 of the 315 good reports, most of which were made since 1967, and found a strong bimodal distribution from north to south in Montana. The wolf range shown on Figure 2 in northwestern Montana contains 190 of the reports while the areas in southwestern Montana contain 84 reports and only 4 occurred in the intervening 144Km. (90 miles). Included in the 278 reports analyzed are 5 reports of wolves killed in northwestern Montana, 3 of which were verified by taxonomists after examining cleaned skulls.

Single animals were reported for 71 percent of the observation reports, while pairs made up 18 percent of the reports, and groups of 3 made up 4 percent. Rausch (1967) speculated that pack size in wolves may be a measure of abundance — the larger the observed pack size, the more abundant wolves are. The high percentage of lone wolves involved in reports collected here would indicate a low population.

Colors of wolves reported in this study ranged from black to white with gray being most common (41%), dark gray or black (37%), and light gray to white (23%). The northern set of townships shows a higher occurrence (41%) of dark gray or black wolves suggesting intergradation with Canadian wolves.

Singer (1975a+b) and Kaley (1976) collected 130 additional reports of wolf observations for Glacier National Park and vicinity beginning in 1910. Singer (1975a) suggests 5 to 10 wolves present in the area in most recent years. For all sightings since 1910 he reports 63 percent lone wolves and 22 percent pairs. Black wolves comprised 25 percent of the reports.

Yellowstone National Park and Vicinity

During 1967-1977, 81 "probable" reports of 109 large canids were received, with 60 (74%) of these occurring from 1968-1971 (Weaver 1977). Singles or pairs comprised 91 percent of these observations. Sightings were clustered in four areas: northeast section of the Park, Hayden Valley, the northwest portion of the Park, and near Sunlight Basin. Up to ten of these canids may have been present around 1970. Vining (1975) and Weaver (1977) reported recent evidence near Sunlight Basin. Large canids have also been reported from the Bridger-Teton National Forest in northwestern Wyoming (George Gruell, pers. comm.).

Idaho

Reports from the Centennial and Tendoy Mountains adjacent to southwestern Montana were analyzed by Day (1977). Other reports adjacent to Yellowstone National Park were included in Weaver's (1977) analysis. Reports from northern Idaho and the Idaho Primitive Area have been very scattered and few in number.

Summary

The present existence of wolves in the known historical distribution of the Northern Rocky Mountain wolf is documented but tenuous. Sustained pack activity is not documented.

LITERATURE CITED

- Aulerich, R. J. 1964. Status of the wolf in North America. M.S. thesis. Mich. State Univ., Lansing. 66pp.
- Carbyn, L. N. 1974. Wolf predation and behavioral interactions with elk and other ungulates in an area of high prey diversity. Can. Wildl. Serv. Rpt. Edmonton. 233pp.
- Curnow, E. 1969. The history of the eradication of the wolf in Montana. M.S. thesis. Univ. Mont., Missoula. 99pp.
- Day, G. 1977. The status and distribution of the Northern Rocky Mountain wolf (*Canis lupus irremotus*). M.S. thesis. Univ. Mont., Missoula. (draft form).
- Hall, E. R. and K. R. Kelson. 1959. The mammals of North America. Ronald Press Co., N.Y., 2 Vol. 1083pp.
- Kaley, M. R. 1976. Summary of wolf observations since spring. 1975. Glacier Nat. Park. Mimeo. rpt. 8pp.
- Mech, L. D. 1970. The wolf: the ecology and behavior of an endangered species. Nat. Hist. Press, Doubleday, N.Y. 389pp.
- Rausch, R. A. 1967. Some aspects of the population ecology of wolves, Alaska. Am. Zool. 7:253-265.
- Ream, R. L., R. Harris and U. Mattson. 1977. Wolf ecology project progress report. Jan.-Sept. 1977. 6pp. typed.
- Singer, F. 1975a. The history and status of wolves in Glacier National Park, Montana. Glacier Nat. Park Scientific Paper No. 1. 55pp.
- _____. 1975b. Behavior of mountain goats, elk and other wildlife in relation to U.S. Highway 2, Glacier National Park. Rpt. to Fed. Highway Adm. and Glacier Nat. Park. 96pp.
- U. S. Fish and Wildlife Serv. 1973. Threatened wildlife of the United States: the Northern Rocky Mountain wolf. p. 235-236.
- Vining, W. 1975. Final report on wolf survey. Rpt. to Shoshone Nat. Forest. 51pp. Mimeo.
- Weaver, J. 1977. The wolves of Yellowstone. U.S.G.P.O. Nat. Park Serv.-Nat. Res. Rpt. (in press).
- Young, S. P. and E. A. Goldman. 1944. The wolves of North America. Am. Wildl. Inst. Wash., D.C. 636pp.

A PLAN FOR THE RECOVERY OF THE NORTHERN ROCKY MOUNTAIN WOLF
(*Canis lupus irremotus*)

Primary objective: To remove *Canis lupus irremotus* from endangered status by re-establishing and maintaining viable populations in as much of its former range as is feasible.

1. Determine the status and distribution of the Northern Rocky Mountain Wolf.
In order to proceed with management efforts, it is essential to obtain a clear understanding of where and under what conditions wolves currently occur in the Northern Rockies. A knowledge of wolf distribution is essential to development of long range plans.
11. Monitor the legal status of the NRMW as provided in the Endangered Species Act of 1973 (P.L. 93-205) and appropriate state laws.
 111. Determine and publicize legal protection of wolves in and adjacent to the former range of C.l. *irremotus*.
Only a small segment of the public is aware of the endangered status of the NRMW. A concerted effort must be made to inform the public that wolves are fully protected by federal law.
 112. Identify states or other political subdivisions where wolves are classed as predators or other non-protected categories.
 - 112-1. Notify appropriate officials concerning P.L. 93-205 and its legal implications.
 - 112-2. Encourage states to enact wolf management measures.
Full cooperation by the states is essential to success of recovery efforts. As such, states must assume an active role in wolf management and recovery efforts.
12. Clarify taxonomic status of the NRMW.
Hall and Kelson (1959) list twenty-four subspecies of *Canis lupus* for North America. It is generally conceded that no modern taxonomist would consider all subspecies valid. A clarification of the taxonomic status of *irremotus* would simplify management planning.
 121. Summarize existing information on wolf taxonomy based on a review of available literature.
 122. Determine validity of existing taxonomic classification of wolves.
 - 122-1. Request assistance of recognized authorities to help clarify wolf taxonomy in and adjacent to historical range of NRMW.

- 122-2. Examine any available wolf skulls from in and around the former range of C.l. *irremotus* which have not been checked previously for taxonomic identification.
- 123. Have taxonomic experts continually evaluate and update classification of wolves based on new or additional information.
 - 123-1. Obtain the skull and other important body measurements on as many known future wolf mortalities as is possible within or adjacent to the former range of the NRMW.
 - 123-2. Compare skull measurements and other data collected on other subspecies or geographic races of wolves with those of the NRMW.
- 13. Determine historical distribution and relative abundance of the NRMW. A compilation of such information will provide a reference point against which present distribution and abundance may be contrasted. Such a reference point will also be useful in assessing the degree of success in recovery efforts.
 - 131. Summarize existing information based on a thorough review of available literature.
 - 132. Obtain information on former occurrence and number of NRMW from Federal and State Agencies with wildlife responsibilities.
 - 132-1. Compile data from old files, unpublished reports, etc.
 - 132-2. Collect unrecorded information from long-time employees, including those now retired.
 - 133. Request historical information on the NRMW from interested organized groups and individuals.
 - 133-1. Enter into cooperative program with qualified individuals and groups to obtain and compile data on former occurrence and abundance of the NRMW.
 - 133-2. Interview old timers --- trappers, ranchers, miners, etc., for unrecorded information on the NRMW.
- 14. Determine present distribution and population level of the NRMW. Knowledge of present distribution will serve to point out areas where management and research activities should be concentrated. Current population levels are believed to be extremely low.
 - 141. Devise a systematic approach for compiling observations and other data on the NRMW.

Most information compiled on the NRMW so far has been disorganized and scattered. Only recently has a standard reporting form been developed and distributed. Data compilation needs to be further standardized.

141-1. Encourage Federal and State land management agencies to use standard reporting procedures for NRMW observations.

141-11. Devise standard procedures.
Standard report forms have been developed.

141-12. Distribute standard observation procedures to concerned agencies.

141-2. Make standard procedures for NRMW observations available to interested organized groups and individuals, and encourage their participation in reporting reliable observations.

141-3. Ask each National Forest, National Park, BLM District, etc., to designate and train a qualified person to check and evaluate wolf reports.

142. Implement studies to better determine existence and distribution of individual packs or populations of the NRMW. Conduct extensive surveys in areas where wolves may occur.

The existence and distribution of wolves must be clarified through intensive field efforts. The compilation of wolf reports is helpful, but inadequate since they usually are a "side effect" of other activities.

142-1. Conduct aerial surveys.

142-2. Conduct ground surveys.

142-3. Conduct ground searches on winter game ranges.

2. Insure perpetuation of the Northern Rocky Mountain Wolf in its present range.
This plan segment outlines the basic management scheme for existing wolf populations. Basic to this segment are the protection of wolves and protection of the habitat which supports them.

21. Minimize direct, man-caused mortality.

211. Demonstrate to the public that the NRMW is unique, natural, a part of our history, and is endangered.

Success of recovery efforts hinges, to a large degree, on the support and acceptance of plan objectives by the public. A strong information and education effort is necessary if public support is to be gotten. It is recognized that not all segments of the public will support the concept of wolf recovery. Opposition can be reduced, however, by pointing out plan objectives (i.e. 214) which are aimed at keeping wolf management and recovery in proper perspective.

211-1. Publish technical data available on wolf ecology, current status, and history.

- 211-2. Produce and distribute movies, TV programs, slide series and popular literature on the realities of wolf ecology and management.
- 211-3. Explain to interested groups and organizations the facts of wolf ecology and management.
- 211-4. Keep the public informed on recovery efforts and progress.
- 212. Educate the public concerning the legal implications of P.L. 93-205 and appropriate state laws.

Few people are truly aware of the Endangered Species Act and its provisions. Here, again, information and education efforts are necessary.
- 213. Provide concerted law enforcement effort.
- 214. Make provisions for minimizing or resolving conflicts between wolf recovery objectives and man (including livestock).

The wolf is a highly mobile carnivore that cannot be restricted to Federal lands. While on Federal lands recovery objectives may be offered varying degrees of encouragement; from total in national parks to partial on Forest Service and Bureau of Land Management grazing allotments. On private land and on state grazing leases recovery objectives would in many cases be granted little or no encouragement. It would be the responsibility of involved agencies to be prepared to minimize or mitigate wolf-man conflicts to the highest degree possible under the circumstances.

 - 214-1. Assess impacts of various predator control programs on wolf recovery.

Anticipate the conflicts associated with the administration and regulation of Federal, State, County, livestock association, bounty, fur trapping and shooting, aerial hunting, and landowner forms of predator control. Well supervised and regulated programs will have less impact on the recovery effort than those that are non-supervised and unregulated.
 - 214-2. Attempt to determine causes and impact of conflicts.

Investigate reports of wolf-man conflicts and document the varying causes and the impact on wolves or man.

 - 214-21. Document human activities which conflict with wolf management efforts.
 - 214-22. Determine under what conditions wolves conflict with human activities.
 - 214-23. Assess the impact of conflicts on wolf populations and/or habitat.

214-3. Develop procedures for resolving conflicts.

The endangered status of wolves precludes control action by any lethal means. Not until the wolf is down-listed to threatened status or de-listed can a wolf be legally taken. Land administering agencies could consider alternative grazing allotment assignments in known conflict areas.

214-31. Determine feasibility of reparations for damages.

Contact Endangered Species Office, FWS, regarding the feasibility and legality of payment for wolf-incurred damages. This might well be a practical approach as the wolf population is quite low, and may be less expensive than translocation programs; and may be intermittent. Liaison with livestock industry is essential.

214-32. Develop legal means for handling depredation problems.

As the wolf increases to a viable population status, endeavor to down-list it to threatened status and develop regulations that allow for control actions where necessary.

214-33. Provide government trapping and transplanting where feasible and necessary.

Secure policy procedures that are clearcut in advance of anticipated conflicts that permit live capture and translocation. Stockpile necessary traps, nets, cages, and immobilizing equipment needed for such actions. Train key personnel in use of equipment. Secure reliable helicopter transportation for use in inaccessible areas. Obtain advance authority to release wolves from land administering agencies.

214-34. When legal, provide government control of wolves.

When down-listed to threatened or de-listed from that status, obtain authority, funding, training, and equipment to manage and/or control wolves as necessary. The failure of the Federal government and society to recognize this course of action as essential to the survival of wolves in the Northern Rockies will only serve to head it toward extinction with the technology now available.

22. Review and coordinate all management and research proposals relating to the NRMW.

It is imperative that there be no duplication of effort or agencies or groups working at cross purposes. This effort should be coordinated with 21 through 212-2.

221. Obtain review from qualified persons.
Continue to solicit professional and scientific cooperators in the recovery effort. Select the best qualified for review of management and research proposals.
222. Determine impact of proposed research or management actions on the NRMW.
223. Determine priority of proposal.
23. Determine environmental requirements of the NRMW and implement measures to protect or enhance those requirements.
 231. Obtain accurate knowledge of wolf populations on each of the parts of the current range.
This item, sub-items under it, and item 142 would all be part of a survey study to determine the current situation, both status and numbers, for the NRMW. It should be a coordinated intensive survey for 3-4 years in all areas of occupied and suspected wolf habitat.
 - 231-1. Estimate wolf numbers, pack sizes and population trends.
 - 231-11. Estimate pup/adult ratios.
 - 231-12. Estimate number of packs, pairs and loners.
 - 231-13. Estimate litter sizes and numbers of litters.
 - 231-2. Determine limiting factors and measure their influence on wolf populations.
 232. Obtain accurate knowledge of areas occupied by wolves.
It is important, particularly in a minimally populated wolf range, to find out territory sizes, seasonal patterns of use, and relationships to prey ranges and areas of human use. This information should result from ecological studies utilizing radio tagged wolves.
 - 232-1. Determine size of home range for packs, loners and pairs.
 - 232-2. Determine locations of dens and other critical areas.
 - 232-3. Determine relationship of territories to each other.
 - 232-4. Determine relationship of territories to seasonal ranges of prey.
 - 232-5. Determine characteristics of areas used by wolves.
 - 232-6. Determine relationships of known wolf use areas to types of human activity taking place in or near these areas.

233. Obtain accurate knowledge of natural prey requirements of wolves and effects on prey.
Little is known about the prey requirements of the NRMW. Although some information can be predicted from other studies, none are comparable in terms of prey availability. It is assumed that the impact on prey populations is currently minimal. Much of this information can be obtained through the ecological studies suggested in item 232.

233-1. Determine prey requirements.

233-11. Determine prey composition.

233-12. Determine rate of predation.

233-13. Determine seasonal variation in predation.

233-14. Determine predatory behavior.

233-2. Determine effects on prey.

233-21. Determine structure of prey population(s).

233-22. Determine structure of kill.

234. Assemble a knowledge of environmental requirements of prey species.

Information on environmental requirements of prey and potential prey is available, and will not need to be researched further. An accumulation of this data, however, will have to be made on an area-by-area basis.

234-1. Determine carrying capacity.

234-2. Determine seasonal ranges.

234-3. Determine population trends.

235. Compare with knowledge obtained in other areas.

A knowledge of population parameters of prey species in areas where wolf predation is significant will be helpful in developing guidelines for prey management in selected recovery sites.

235-1. Literature search.

235-2. Confer with other biologists currently carrying out studies.

235-3. Maintain a literature and information file of all related information.

236. Implement measures to enhance wolf recovery.

- 236-1. Identify potential recovery sites.
- 236-2. Within the context of social, political and biological constraints, attempt to reduce the influence of factors limiting growth of wolf population.
- 236-3. Increase the carrying capacity of the range for prey species, if necessary.
 - 236-31. Improve and/or maintain the production and composition of the habitats required by prey species.
 - 236-32. Reduce competition between wild and domestic ungulates.
- 236-4. Manipulate prey populations to maximize availability of prey to wolves, if necessary.
 - 236-41. Control total harvest of game animals.
 - 236-42. Manipulate harvest of certain segments of prey populations (limit female harvest, etc.).
- 236-5. Reduce actual or potential interactions with humans in wolf range.
 - 236-51. Avoid publicizing knowledge of areas occupied by wolves except when deemed necessary or beneficial for wolves.
 - 236-52. Control access to important areas.
 - 236-53. Consider closure to public in important areas.
 - 236-54. Consider closure or restrictions in important areas to activities which could inadvertently cause wolf losses.
 - 236-55. Make certain that all land management agencies consider impacts of proposed land uses on the NRMW in their EIS's and EA's, or those they review.
- 24. Protect areas where environmental requirements are met.

The protection of areas within occupied or potential habitat for the NRMW which supply the environmental requirements to sustain the species is essential to their future management.

 - 241. Promote wolf recovery objectives in the land use planning process.

Encourage appropriate land management agencies to incorporate objectives set in the recovery plan for the NRMW into their land use planning systems.

- 241-1. Inform land managers of existing or potential wolf range.
It will be necessary to keep land management agencies and personnel up to date on occupied and potential habitat for the NRMW as a basis for consideration in their long-range and short-term planning efforts.
- 241-2. Incorporate recovery objectives into plans.
Objectives set in the NRMW Recovery Plan should be incorporated into both long-range management plans and project or activity plans by the responsible land management agencies.
- 241-3. Eliminate or minimize conflicts between the NRMW and other land uses in the plans.
Provide the necessary management direction, or where applicable, coordinating requirements to enhance or maintain habitat for the NRMW with regard to other uses and activities prescribed in various land management plans.
- 241-4. Inform interested groups and organizations of land use plans that may affect the NRMW.
- 242. Prevent encroachment of detrimental developments or new uses in areas deemed important to the NRMW.
Areas determined to be important for the NRMW should be protected by the responsible land management agency from developments or new uses that would be incompatible with the wolf or its habitat.
 - 242-1. Remind public land managers of their responsibilities under the Endangered Species Act.
Keep appropriate personnel of land management agencies currently informed of the status of the NRMW under provisions of the Endangered Species Act. This would include such actions as designation of critical habitat by the Secretary of the Interior under Section 7 of the Act.
 - 242-2. Provide concerted educational, and where necessary, legal effort on essential areas subject to encroachment.
 - 242-21. Obtain local and national support to assist in such efforts.
Direct public information and education efforts on the NRMW both to the local and national levels. Work through the political structure where appropriate.
 - 242-22. Restrict public activities in certain areas deemed important.
Responsible land management agencies, in consultation with the State Fish & Game agencies, should consider restricting public access through existing administrative regulations to protect the NRMW or its essential habitat where deemed necessary.

- 242-23. Seek legal interpretation where necessary.
It may be necessary to solicit legal interpretation of existing laws and regulations to protect the NRMW and its habitat.
243. Develop guidelines for implementation of habitat maintenance and/or improvement measures.
Based on research efforts on the NRMW develop guidelines which provide for the maintenance or improvement of habitat used by the species for use by responsible land management agencies.
25. Delineate essential habitat for the NRMW; identify and recommend specific areas to the Secretary.
Research should be directed at the determination and delineation of existing or potential habitat which is essential for the survival of the NRMW. Such areas should be recommended to the Secretary of the Interior for consideration of critical habitat designation under Section 7 of the Endangered Species Act.
251. Identify and describe areas essential to the recovery of the NRMW.
The identification of areas of habitat essential to the recovery of the NRMW should be a major objective of research conducted on the species. Once identified on a biological basis, these areas need to be described in a legally appropriate manner.
252. Determine what actions or activities are acceptable on Federal lands where critical habitat has been designated pursuant to Section 7, P.L. 93-205.
Based on research findings, land management agencies will determine what type of uses or activities may be acceptable on areas designated as critical habitat for the NRMW.
- 252-1. Identify areas, seasons, and/or situations where certain activities can be conducted or should be prohibited.
Determine areas and situations where other activities are compatible with the management of the NRMW including those which are only acceptable on a seasonal basis.
- 252-2. Determine restrictions or stipulations necessary to modify certain activities to protect essential habitat for wolves.
Coordinating requirements and specific stipulations need to be developed based on research findings to provide for protection of essential habitat of the NRMW where other activities are planned.
- 252-3. Require that impacts on the NRMW be considered in all EIS's and EA's.
Federal land management agencies are required to prepare EIS's or EA's to evaluate environmental impacts caused by proposed projects or management actions. The NRMW should be considered in these reports where ever applicable.

3. Re-establish populations in suitable areas within the former range of the NRMW, where viable populations do not now exist.

Implementation of this segment of the plan is contingent upon the extent of recovery, after reasonable time, under segment 2, which deals with enhancement of existing populations including dispersion into suitable habitats. Segment 3 sets out specific sequential procedures for re-introduction through restocking or transplant.

31. Determine whether re-establishment is socially and ecologically sound.

311. Consult vegetation and ownership maps, land use maps and plans, and local biologists to define and select all suitable areas for transplant.

312. Determine local public attitudes in the vicinity of selected areas and evaluate potential success of a transplant in light of these attitudes.

313. Determine prey densities in the selected areas.

314. Determine human densities, use patterns and attitudes in the selected areas.

315. Determine possible impact of transplant on public health.

316. Estimate effect of establishing wolves on other wildlife and domestic animals, including an economic analysis.

317. Determine legal implications of transplant.

318. Determine the taxonomic suitability of available transplant stock.

319. Determine roll of parasites and diseases in re-establishment of wolve

32. Investigate the feasibility of re-establishing the NRMW through use of packs and non-related wolves.

321. Select most inaccessible area with adequate food supply and minimum human population.

322. Obtain cooperation and permit from appropriate State and Federal agencies.

323. Obtain support of local people (as in 211 and 212).

323-1. Contact selected individuals and key groups for support.

323-2. Publish facts of situation in local news media.

324. Obtain support of concerned state legislators.

33. If wolves are established, treat as in Part 2.

34. Introduce wolves in selected areas.

341. Hold public hearings and seek support.
Public knowledge and support is essential for successful introductions.
342. Obtain wolves from nearest viable population.
Taxonomic considerations (Items 121 and 122) must first be resolved. Ecological considerations otherwise dictate that the nearest viable population to the selected restocking site will probably provide the most suitable animals.
- 342-1. Arrange for appropriate agency to provide wolves.
- 342-2. Prescribe manner and season of live trapping and handling wolves.
Necessary for best possible chance of successful restocking with minimal holding and handling between trap site and release point.
- 342-3. Provide holding pens in capture area.
- 342-4. Contract trapper to supply wolves.
- 342-5. Examine, ear-tag, radio-tag and vaccinate wolves.
General condition, age and sex of wolves should be known prior to release. Vaccinations may be necessary to conform to state requirements. Ear and radio tags are needed for subsequent monitoring.
- 342-6. Accumulate wolves until a socially compatible group is obtained.
Wolves that are socially compatible are necessary to establish a viable pack unit.
343. Deliver wolves to release point.
- 343-1. Arrange shortest and most direct transportation.
- 343-2. Tranquilize wolves.
Tranquilizing wolves will minimize stress.
344. Effect gentle release of wolves.
Gentle releasing offers greatest chance of success.
- 344-1. Select appropriate release sites.
- 344-2. Build appropriate pens in release sites.
- 344-3. Deliver wolves and hold on release site for a suitable time.
- 344-4. Feed wolves local wild prey and observe feeding behavior and interactions.

- 344-5. Allow wolves to leave pens at will after they are accustomed to prey, to each other, and the area.
- 344-6. Consider providing carcasses of wild prey near release site.
- 35. Monitor restocking efforts and population levels in selected areas.
Monitoring is essential to determine outcome and status if successful. Radio track transplanted wolves daily for first week and 2 to 3 times per week thereafter, until they settle down, and then intermittently as long as possible to determine how many survive, whether they are breeding, and to assess success of the re-establishment effort.

GROUP & PRIORITY	ACTION	PLAN ITEM	RESPONSIBILITY		TARGET DATE	ESTIMATED COSTS		
			LEAD	COOPERATORS		1st Yr.	2nd Yr.	3rd Yr.
	PART 1, STATUS							
ADMINISTRATIVE 1	Monitor legal status	11	FWS	States	Ongoing	4,000	2,000	2,000
ADMINISTRATIVE 3	Determine and publicize legal protection	111	FWS	States	2nd Yr.	Costs included as part of 11		
ADMINISTRATIVE 3	Identify states or other subdivisions where protection is not afforded	112	FWS	States	2nd Yr.	"	"	
ADMINISTRATIVE 3	Notify appropriate officials on P.L. 93-205	112-1	FWS		2nd Yr.	"	"	
ADMINISTRATIVE 3	Encourage states to enact protective Reg.	112-2	FWS		Ongoing	"	"	"
RESEARCH 3	Clarify taxonomic status	12	FWS	Contract	4th Yr.	10,000	2,000	2,000
RESEARCH 4	Summarize existing taxonomic information	121	FWS	Contract	2nd Yr.	Costs included as part of 12		
RESEARCH 4	Determine validity of taxonomy	122	FWS	Contract	4th Yr.	"	"	"
RESEARCH 3	Request assistance from authorities	122-1	FWS	States	Ongoing	"	"	"
RESEARCH 3	Examine available wolf skulls	122-2	FWS	Contract	Ongoing	"	"	"
RESEARCH 4	Continue taxonomic evaluation and classification	123	FWS	Contract	Ongoing	"	"	"
RESEARCH 1	Obtain skull and other measurements from all mortalities	123-1	States	FWS, NPS, BLM, FS	Ongoing	"	"	"
RESEARCH 3	Compare all measurements on related subspecies	123-2	FWS	Contract	Ongoing	"	"	"
RESEARCH 4	Determine historical distribution and relative abundance	13	States	Contract	4th Yr.	2,000	500	500
RESEARCH 4	Summarize information from literature review	131	States	Contract	2nd Yr.	2,000	--	--
RESEARCH 4	Obtain information from all existing sources	132 132-1 132-2	States	Contract, FWS, NPS, BLM, FS	2nd Yr.	2,000	--	--

GROUP & PRIORITY	ACTION	PLAN ITEM	RESPONSIBILITY		TARGET DATE	ESTIMATED COSTS		
			LEAD	COOPERATORS		1st Yr.	2nd Yr.	3rd Yr.
RESEARCH	1	Determine distribution and population	States	Contract, FWS NPS, BLM, FS, Pvt.	Ongoing	50,000	45,000	40,000
ADMINISTRATIVE	1	Utilize systematic report compilation	FWS	States	Ongoing	3,000	3,000	4,000
ADMINISTRATIVE	2	Encourage reporting observations	FWS	States	1st Yr.	--	--	--
ADMINISTRATIVE	2	Devise standard procedures	FWS	States	1st Yr.	--	--	--
ADMINISTRATIVE	2	Distribute procedures	States	FWS	Ongoing	1,000	1,000	1,000
ADMINISTRATIVE	4	Encourage citizen participation	States	FWS	Ongoing	1,000	1,000	1,000
ADMINISTRATIVE	1	Ask agencies to provide reports	States	FWS	3rd Yr.	10,000	5,000	--
MANAGEMENT	1	Implement wolf surveys	States	FWS, NPS, BLM, FS, Contract	Ongoing	Costs included as part of 231		
RESEARCH	1	Conduct aerial surveys	States	FWS, Contract	Ongoing	"	"	"
RESEARCH	1	Conduct ground surveys	States	Contract, BLM, FS, NPS	Ongoing	"	"	"
RESEARCH	1	Conduct searches on winter game ranges	States	Contract, BLM, FS, NPS	Ongoing	"	"	"
POLITICAL	3	Insure perpetuation	FWS	States	Ongoing	No cost assignment, need data from 214 to add to 21		
MANAGEMENT	3	Minimize mortality	States	FWS	Ongoing	16,000	15,000	10,000
MANAGEMENT	2	Inform public on wolf ecology	States	FWS	Ongoing	1,000	3,000	5,000
MANAGEMENT	3	Publish technical data	States	Contract, BLM, FS, NPS	Ongoing	--	1,000	2,000
MANAGEMENT	5	Produce media information	States	Pvt.	4th Yr.	5,000	5,000	1,000

GROUP & PRIORITY	ACTION	PLAN ITEM	RESPONSIBILITY		TARGET DATE	ESTIMATED COSTS		
			LEAD	COOPERATORS		1st Yr.	2nd Yr.	3rd Yr.
MANAGEMENT 5	Educate the public on legal aspects	212	States	FWS	4th Yr.	4,000	4,000	4,000
MANAGEMENT 3	Produce informational spots	212-1	States	FWS, Pvt.	3rd Yr.	3,000	3,000	--
MANAGEMENT 2	Explain legal status	212-2	States	FWS	3rd Yr.	1,000	1,000	--
MANAGEMENT 3	Provide law enforcement	213	States	FWS	Ongoing	2,000	2,000	2,000
MANAGEMENT 5	Minimize conflicts	214	FWS	FS, BLM, States	Ongoing	1,000	1,500	2,000
MANAGEMENT 4	Assess control programs	214-1	FWS	States	3rd Yr.	2,500	3,000	--
ADMINISTRATIVE 1	Determine impact of conflicts	214-2 214-21 214-22 214-23	FWS	FS, BLM, States	Ongoing	500	1,000	1,500
ADMINISTRATIVE 3	Procedures for resolving conflicts	214-3	FWS	BLM, FS	4th Yr.	500	1,000	2,000
ADMINISTRATIVE 4	Feasibility of reparations	214-31	FWS		4th Yr.	500	500	750
ADMINISTRATIVE 4	Legal handling of depredations	214-32	FWS		4th Yr.	500	1,000	5,000
MANAGEMENT 3	Translocation	214-33	FWS		Ongoing	1,000	2,000	3,000
MANAGEMENT 4	Control wolves	214-34	FWS		Ongoing	1,000	2,000	10,000
ADMINISTRATIVE 2	Review management and research	22	FWS	FS, BLM, States, NPS	Ongoing	2,000	3,000	4,000
ADMINISTRATIVE 2	Obtain qualified review	221	FWS	States	Ongoing	2,000	3,000	4,000
ADMINISTRATIVE 2	Impact on NRMW	222	FWS	FS, BLM, States	Ongoing	1,000	2,000	3,000
ADMINISTRATIVE 2	Priority determination	223	FWS	FS, BLM, States	Ongoing	2,000	3,000	4,000
RESEARCH 1	Obtain accurate knowledge of wolf populations on each of the parts of the current range.	231 142	States	Contract, NPS, FS, BLM, FWS	Ongoing	80,000 (also includes item 142)	90,000	60,000
RESEARCH 2	Obtain accurate knowledge of areas occupied by wolves	232	States	Contract, NPS, FS, BLM, FWS	Ongoing	20,000	40,000	60,000

GROUP & PRIORITY	ACTION	PLAN ITEM	RESPONSIBILITY		TARGET DATE	ESTIMATED COSTS		
			LEAD	COOPERATORS		1st Yr.	2nd Yr.	3rd Yr.
RESEARCH 3	Obtain accurate knowledge of natural prey requirements of wolves and effects on prey	233	States	Contract, NPS FS, BLM, FWS	Ongoing	10,000	15,000	20,000
RESEARCH 4	Compare with knowledge obtained in other areas	235	States	Contract, FWS, FS, BLM, NPS	Ongoing	500	500	500
ADMINISTRATIVE 2	Implement measures to enhance wolf recovery	236 236-3 236-4	States	FS, BLM, FWS, NPS	Ongoing	25,000	30,000	35,000
ADMINISTRATIVE 1	Map out potential recovery sites	236-1	States	FS, BLM, FWS, NPS	2nd Yr.	3,000	--	--
ADMINISTRATIVE 2	Reduce limiting factors	236-2	States	FS, BLM, FWS, NPS	3rd Yr.	5,000	5,000	--
ADMINISTRATIVE 4	Reduce interactions with humans	236-5	States	FS, BLM, NPS	3rd Yr.	2,000	2,000	--
ADMINISTRATIVE 5	Control access to important areas	236-52 236-53 236-54	States	FS, BLM	3rd Yr.	2,000	2,000	--
ADMINISTRATIVE 1	Consider wolves in EIS or EA	236-55	FWS	FS, BLM	Ongoing	No cost assignment		
ADMINISTRATIVE 1 (includes legal actions)	Protect areas where environmental requirements are met	24	FS, BLM	NPS, States, FWS	Ongoing	No cost assignment		
2	Promote wolf recovery objectives in the land use planning process	241	FWS	FS, BLM	1984	1,000	1,000	1,000
ADMINISTRATIVE 2	Inform land managers of existing or potential wolf range	241-1	FWS	States	2nd Yr.	1,000	1,000	--
ADMINISTRATIVE 2	Incorporate recovery objectives into plans	241-2	FS, BLM	FWS, NPS	1984	2,000	2,000	2,000
ADMINISTRATIVE 2	Eliminate or minimize conflicts between the NRMW and other land uses in the plans	241-3	FS, BLM	FWS, NPS	1984	4,000	4,000	4,000
MANAGEMENT 3 (Includes public education and involvement)	Inform interest groups and organizations of land use plans that may affect the NRMW	241-4	States	FS, BLM	1984	1,000	1,000	1,000

GROUP & PRIORITY	ACTION	PLAN ITEM	RESPONSIBILITY		TARGET DATE	ESTIMATED COSTS		
			LEAD	COOPERATORS		1st Yr.	2nd Yr.	3rd Yr.
ADMINISTRATIVE 2	Prevent encroachment of detrimental developments or new uses in areas deemed important to the NRMW	242	FS, BLM	FWS, States, NPS	Ongoing	5,000	5,000	5,000
ADMINISTRATIVE 3	Remind public land managers of their responsibilities under the Endangered Species Act	242-1	FWS	FS, BLM	Ongoing	500	500	500
MANAGEMENT 3	Provide concerted educational and, where necessary, legal effort on certain essential areas	242-2	FWS	FS, BLM, NPS States	1982	3,000	3,000	3,000
POLITICAL 5	Obtain local and national support to assist in such efforts	242-21	FWS	States	Ongoing	1,000	1,000	1,000
MANAGEMENT 4	Restrict public access in certain areas deemed important	242-22	FS, BLM	States, NPS	4th Yr.	--	2,000	2,000
ADMINISTRATIVE 5	Seek legal interpretation where necessary	242-23	FWS	States	Ongoing	500	500	500
MANAGEMENT 3	Develop guidelines for implementation of habitat maintenance and/or improvement measures	243	States	FS, NPS, BLM FWS	2nd Yr.	2,000	--	--
RESEARCH 2	Delineate essential habitat for the NRMW; identify and recommend specific areas to Secretary	25	FWS	FS, NPS, BLM, States	3rd Yr.	10,000	10,000	--
RESEARCH 2	Identify and describe areas essential to the recovery of the NRMW	251	FWS	FS, NPS, BLM, States	3rd Yr.	(Included with 25)		
RESEARCH 2	Determine what actions or activities are acceptable on federal lands where critical habitat has been designated pursuant to Section 7, P.L. 93-205	252	FWS	FS, NPS, BLM, States	3rd Yr.	15,000	15,000	--
RESEARCH 3	Identify areas, seasons, and/or situations where certain activities can be conducted or should be prohibited	252-1	FWS	FS, NPS, BLM, States	3rd Yr.	(Included with 252)		
ADMINISTRATIVE 2	Determine restrictions or stipulations necessary to modify certain activities to protect essential habitat for wolves	252-2	FWS	FS, BLM, States	1984	4,000	4,000	4,000

GROUP & PRIORITY	ACTION	PLAN ITEM	RESPONSIBILITY		TARGET DATE	ESTIMATED COSTS		
			LEAD	COOPERATORS		1st Yr. 5,000	2nd Yr. 5,000	3rd Yr. 5,000
ADMINISTRATIVE 2	Prevent encroachment of detrimental developments or new uses in areas deemed important to the NRMW	242	FS, BLM	FWS, States, NPS	Ongoing	5,000	5,000	5,000
ADMINISTRATIVE 3	Remind public land managers of their responsibilities under the Endangered Species Act	242-1	FWS	FS, BLM	Ongoing	500	500	500
MANAGEMENT 3	Provide concerted educational and, where necessary, legal effort on certain essential areas	242-2	FWS	FS, BLM, NPS States	1982	3,000	3,000	3,000
POLITICAL 5	Obtain local and national support to assist in such efforts	242-21	FWS	States	Ongoing	1,000	1,000	1,000
MANAGEMENT 4	Restrict public access in certain areas deemed important	242-22	FS, BLM	States, NPS	4th Yr.	--	2,000	2,000
ADMINISTRATIVE 5	Seek legal interpretation where necessary	242-23	FWS	States	Ongoing	500	500	500
MANAGEMENT 3	Develop guidelines for implementation of habitat maintenance and/or improvement measures	243	States	FS, NPS, BLM FWS	2nd Yr.	2,000	--	--
RESEARCH 2	Delineate essential habitat for the NRMW; identify and recommend specific areas to Secretary	25	FWS	FS, NPS, BLM, States	3rd Yr.	10,000	10,000	--
RESEARCH 2	Identify and describe areas essential to the recovery of the NRMW	251	FWS	FS, NPS, BLM, States	3rd Yr.	(Included with 25)		
RESEARCH 2	Determine what actions or activities are acceptable on federal lands where critical habitat has been designated pursuant to Section 7, P.L. 93-205	252	FWS	FS, NPS, BLM, States	3rd Yr.	15,000	15,000	--
RESEARCH 3	Identify areas, seasons, and/or situations where certain activities can be conducted or should be prohibited	252-1	FWS	FS, NPS, BLM, States	3rd Yr.	(Included with 252)		
ADMINISTRATIVE 2	Determine restrictions or stipulations necessary to modify certain activities to protect essential habitat for wolves	252-2	FWS	FS, BLM, States	1984	4,000	4,000	4,000

GROUP & PRIORITY	ACTION	PLAN ITEM	RESPONSIBILITY		TARGET DATE	ESTIMATED COSTS		
			LEAD	COOPERATORS		1st Yr.	2nd Yr.	3rd Yr.
ADMINISTRATIVE 1	Require that impacts on the NRMW be considered in all EIS's and EA's PART 3, RE-ESTABLISHMENT	252-3	FWS	BLM, FS	Ongoing	1,000	1,000	1,000
MANAGEMENT 5	Re-establish populations in suitable areas within the former range of the NRMW where self-sustaining populations do not now exist	3	States	FWS, BLM, FS, NPS, BIA (Tribal Councils)	1987	No costs during this period		
ADMINISTRATIVE 4	Determine feasibility of re-establishment	31 32	States	FWS, BLM, FS, NPS, BIA	1985			
POLITICAL 3	Hold public hearings and seek support	341	States	FS, FWS, BLM, NPS				
MANAGEMENT 3	Arrange for appropriate agency to provide wolves	342-1	FWS	States, NPS, FS				
MANAGEMENT 3	Prescribe manner and season for live-trapping and handling	342-2	FWS					
MANAGEMENT 5	Provide holding pens in capture area	342-3	FWS	NPS, FS, BLM				
MANAGEMENT 4	Contract trapper to supply wolves; accumulate wolves until 5 or more obtained	342-4 342-6	FWS					
MANAGEMENT 4	Examine, ear-tag, radio-tag and vaccinate	342-5	FWS	States, NPS, FS, BLM				
MANAGEMENT 5	Arrange shortest and most direct transplant; tranquilize wolves	343-1 343-2	FWS	States, NPS, FS, BLM				
MANAGEMENT 3	Select appropriate release sites	344-1	States	NPS, FWS, FS, BLM				
MANAGEMENT 4	Build appropriate pens in release sites	344-2	FWS	NPS, FS, BLM				
MANAGEMENT 5	Deliver wolves and hold at release site for suitable time; feed wolves local wild prey	344-3 344-4	FWS	States, NPS, FS, BLM				

GROUP & PRIORITY	ACTION	PLAN ITEM	RESPONSIBILITY		TARGET DATE	ESTIMATED COSTS		
			LEAD	COOPERATORS		1st Yr.	2nd Yr.	3rd Yr.
MANAGEMENT	5	Allow wolves to leave at will after they are accustomed to prey, each other and the area; consider providing carcasses of wild prey near release site	FWS	States, NPS, FS, BLM				
		344-5 344-6						
RESEARCH	4	Radio track transplanted wolves	States	NPS, FS, BLM				
		35						

FIRST YEAR COST SUMMARY

<u>AGENCY</u>	<u>MONTANA</u>	<u>IDAHO</u>	<u>WYOMING</u>	<u>TOTAL</u>
FWS	38,025	7,625	30,420	76,070
FS	23,750	4,800	19,000	47,550
BLM	23,750	4,710	19,000	47,460
NPS (Glacier)				19,875
NPS (Yellowstone)				19,835
PRIVATE	1,500	300	1,200	3,000
MFG	58,050			58,050
IFG		11,630		11,630
WGF			46,440	46,440
Totals	145,075	29,065	116,060	
Grand Total				329,910

SECOND YEAR COST SUMMARY

<u>AGENCY</u>	<u>MONTANA</u>	<u>IDAHO</u>	<u>WYOMING</u>	<u>TOTAL</u>
FWS	36,475	7,285	29,180	72,940
FS	27,600	5,520	22,110	55,230
BLM	27,575	5,485	22,080	55,140
NPS (Glacier)				23,100
NPS (Yellowstone)				23,090
PRIVATE	1,500	300	1,200	3,000
MFG	59,750			59,750
IFG		11,920		11,920
WGF			47,830	47,830
Totals	152,900	30,510	122,400	
Grand Total				352,000

THIRD YEAR COST SUMMARY

<u>AGENCY</u>	<u>MONTANA</u>	<u>IDAHO</u>	<u>WYOMING</u>	<u>TOTAL</u>
FWS	37,450	7,470	29,920	74,840
FS	24,975	4,965	20,040	49,980
BLM	24,925	4,935	19,980	49,840
NPS(Glacier)				20,625
NPS(Yellowstone)				20,615
PRIVATE	200	40	160	400
MFG	48,950			48,950
IFG		9,740		9,740
WGF			39,260	39,260
Totals	136,500	27,150	109,360	
Grand Total				314,250

COST SUMMARY BY AGENCY FOR THE STATE OF WYOMING

ACTION	PLAN ITEM	AGENCY	1st YR.	2nd YR.	3rd YR.
Monitor legal status	11 & following	FWS	640	320	320
		WGF	960	480	480
Clarify Taxonomic status	12 & following	FWS	3,600	440	440
		WGF	200	200	200
		NPS (Yellowstone)	40	40	40
		BLM	40	40	40
Determine historical distribution and relative abundance	13 & following	FS	80	80	80
		WGF	1,920	200	200
		FWS	120	-	-
		NPS (Yellowstone)	120	-	-
		BLM	120	-	-
		FS	120	-	-
Determine distribution and population	14 & following	WGF	11,200	9,200	7,400
		FWS	5,800	4,700	3,800
		NPS (Yellowstone)	3,750	3,375	3,000
		BLM	3,000	2,700	2,400
		FS	3,000	2,700	2,400

ACTION	PLAN ITEM	AGENCY	1st YR.	2nd YR.	3rd YR.
Minimize mortality	21 & following	WGF	9,220	6,730	4,480
		FWS	7,980	9,520	13,040
		BLM	220	480	800
		FS	180	470	820
		NPS (Yellowstone)	-	100	200
Review management and research	22 & following	Private	1,200	1,200	160
		FWS	860	1,340	1,820
		FS	460	740	1,020
		BLM	460	740	1,020
		NPS (Yellowstone)	200	300	400
Determine environmental require- ments of the NRMW	23 & following (including 142)	WGF	860	1,340	1,820
		WGF	21,180	26,020	23,260
		FWS	7,080	8,640	8,440
		NPS (Yellowstone)	12,225	15,825	16,025
		FS	10,480	13,240	12,840
		BLM	10,480	13,240	12,840

ACTION	PLAN ITEM	AGENCY	Lst YR.	2nd YR.	3rd YR.
Protect areas where environmental requirements are met	24 & following	FWS	1,660	1,540	1,380
		WGF	1,420	1,180	940
		FS	2,260	2,460	2,460
		BLM	2,260	2,460	2,460
		NPS (Yellowstone)	1,000	950	950
Delineate essential habitat; recommend specific areas to the Secretary	25 & following	FWS	2,680	2,680	680
		WGF	2,480	2,480	480
		FS	2,420	2,420	420
		BLM	2,420	2,420	420
		NPS (Yellowstone)	2,500	2,500	-

COST SUMMARY BY AGENCY FOR THE STATE OF MONTANA

ACTION	PLAN ITEM	AGENCY	1st YR.	2nd YR.	3rd YR.
Monitor legal status	11 & following	FWS	800	400	400
		MFG	1,200	600	600
Clarify taxonomic status	12 & following	FWS	4,500	550	550
		MFG	250	250	250
		NPS (Glacier)	50	50	50
		BLM	50	50	50
Determine historical distribution and relative abundance	13 & following	FS	100	100	100
		MFG	2,400	250	250
		FWS	150	-	-
		NPS (Glacier)	150	-	-
		BLM	150	-	-
		FS	150	-	-
		MFG	14,000	11,500	9,200
Determine distribution and population	14 & following	FWS	7,250	5,875	4,800
		NPS (Glacier)	3,750	3,375	3,000
		BLM	3,750	3,375	3,000
		FS	3,750	3,375	3,000

ACTION	PLAN ITEM	AGENCY	1st YR.	2nd YR.	3rd YR.
Minimize mortality	21 & following	MFG	11,525	8,375	5,525
		FWS	9,975	11,900	16,300
		BLM	275	575	950
		FS	225	550	950
		NPS (Glacier)	-	100	200
		Private	1,500	1,500	200
Review management and research	22 & following	FWS	1,075	1,675	2,275
		FS	575	925	1,275
		BLM	575	925	1,275
		NPS (Glacier)	200	300	400
		MFG	1,075	1,675	2,275
Determine environmental require- ments of the NRMW	23 & following (incl. 142)	MFG	26,475	32,525	29,075
		FWS	8,850	10,800	10,550
		NPS (Glacier)	12,225	15,825	16,025
		FS	13,100	16,550	16,050
		BLM	13,100	16,550	16,050

ACTION	PLAN ITEM	AGENCY	1st YR.	2nd YR.	3rd YR.
Protect areas where environmental requirements are met	24 & following	FWS	2,075	1,925	1,725
		MFG	1,775	1,475	1,175
		FS	2,825	3,075	3,075
		BLM	2,825	3,075	3,075
		NPS (Glacier)	1,000	950	950
Delineate essential habitat; recommend specific areas to the Secretary	25 & following	FWS	3,350	3,350	850
		MFG	3,100	3,100	600
		FS	3,025	3,025	525
		BLM	3,025	3,025	525
		NPS (Glacier)	2,500	2,500	-

COST SUMMARY BY AGENCY FOR THE STATE OF IDAHO*

ACTION	PLAN ITEM	AGENCY	1st YR.	2nd YR.	3rd YR.
Monitor legal status	11 & Following	FWS	160	80	80
		IFG	240	120	120
Clarify taxonomic status	12 & following	FWS	900	100	100
		IFG	50	50	50
		FS	50	50	50
Determine historical distribution and relative abundance	13 & following	IFG	500	50	50
		FWS	50	-	-
		FS	50	-	-
Determine distribution and population	14 & following	IFG	2,800	2,300	1,840
		FWS	1,450	1,175	960
		BLM	750	675	600
		FS	750	675	600
Minimize mortality	21 & following	IFG	1,555	1,645	1,045
		FWS	1,995	2,380	3,260
		BLM	55	95	150
		FS	45	80	130
		Private	300	300	40

*Cost estimates for the NPS in Idaho are included
for Yellowstone NP under Wyoming.

ACTION	PLAN ITEM	AGENCY	1st YR.	2nd YR.	3rd YR.
Review management and research	22 & following	FWS	215	335	455
		FS	115	185	255
		BLM	115	185	255
		IFG	215	335	455
Determine environmental require- ments of the NRMW	23 & following (including 142)	IFG	5,295	6,505	5,815
		FWS	1,770	2,160	2,110
		FS	2,620	3,310	3,210
		BLM	2,620	3,310	3,210
Protect areas where environmental requirements are met	24 & following	FWS	415	385	345
		IFG	355	295	235
		FS	565	615	615
		BLM	565	615	615
Delineate essential habitat; recom- mend specific areas to the Secretary	25 & following	FWS	670	670	170
		IFG	620	620	120
		FS	605	605	105
		BLM	605	605	105

APPENDIX I

BY: _____ (name) RETURN TO: Dennis L. Flath, Leader
 _____ (address) Northern Rocky Mountain
 _____ (occupation) Wolf Recovery Team
 Box 5 - MSU Campus
 Bozeman, MT 59715
 OR CALL: (406) 994-4241

WOLF SIGHTING

Date: _____ OBSERVER: _____
 _____ (name)
 Time: _____
 _____ (address)
 Weather Conditions: _____
 _____ (occupation)
 Reason for observer being in area: _____
 Number of observers: _____
 Location: _____

 Specific habitat type: _____
 Number of animals: _____
 Size differences in animals: _____

 Distance between observer and animals: _____
 Behavior of animals: _____

 Length of observation: _____
 Type of observation: _____
 _____ (binoculars, riflescope, etc.)
 Circumstances of observation: _____
 _____ (riding in car, hiking, etc.)
 Physical characteristics of animals:
 1) Color: _____
 2) Size: _____
 _____ (estimate weight or compare to dog of similar size)
 3) Position of tail: _____
 4) Track size: _____
 5) Any other characteristics which indicate wolf rather than dog or coyote: _____

 Was photograph taken? _____ Where is it? _____
 Have you seen wolves before? _____ Where? _____
 _____ (wild, zoo, museum, etc.)
 Relative nos. of prey (deer, elk, moose, etc.) in area: _____

 Number of humans in area: _____
 _____ (a lot, a little, etc.)
 Straight-line distance to nearest people-occupied area: _____

 _____ (ranch, town, road, campground, etc.)

Use reverse for any additional information.

APPENDIX II

BY: _____ (name)
 _____ (address)
 _____ (occupation)

RETURN TO: Dennis L. Flath, Leader
 Northern Rocky Mountain
 Wolf Recovery Team
 Box 5 - MSU Campus
 Bozeman, MT 59715
 OR CALL: (406) 994-4241

WOLF SIGN DATA

Date: _____
 Time: _____
 Weather Conditions: _____

OBSERVER: _____ (name)
 _____ (address)
 _____ (occupation)

DEN TRACKS HOWLING SCAT KILL SCENTPOST
 (circle appropriate ones)

Location: _____

Habitat type: _____

Minimum nos. of animals indicated by sign: _____

Maximum nos.: _____

Size of tracks: _____

Diameter of scat: _____

Length of pace: _____

Length of howling: _____

Was there evidence of large dogs in area: _____
 dog: _____

Closest inhabitant with large

(name and address)

Activity of animals indicated by sign: _____

Detailed account of observed sign: _____

(continue on back)

Relative nos. of prey items (deer, elk, moose, etc.) in area: _____

Was photograph taken or picture drawn or cast taken, etc.? _____

If so, who has it now? _____

(name and address)

Total number of observers: _____

Amount of human use in area: _____

(heavy - light)

Straight-line distance to nearest people-occupied area: _____

(ranch, town, road, campground, etc.)

Use reverse for any additional information.