

Wolf Recovery in Central Idaho: Alternative Strategies and Impacts

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- The Idaho Forest, Wildlife and Range Policy Analysis Group was established by the Idaho Legislature in 1989 to provide objective analysis of the impacts of natural resource proposals (see *Idaho Code* § 38-714).
- The Policy Analysis Group is administered through the University of Idaho's College of Forestry, Wildlife and Range Sciences, John C. Hendee, Dean.

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- No. 3. Idaho Department of Fish and Game's land acquisition and land management program. *C. Wise and J. O'Laughlin* (October 1990).
- No. 4. Wolf recovery in central Idaho: alternative strategies and impacts. *C. Wise, J.J. Yeo, D. Goble, J.M. Peek, and J. O'Laughlin* (February 1991).

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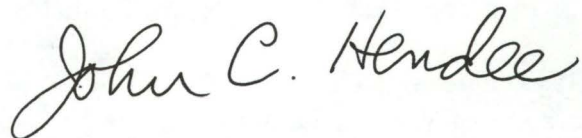
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Foreword

The Idaho Forest, Wildlife and Range Policy Analysis Group (PAG) was created by the Idaho legislature in 1989 to provide Idaho decision makers with timely and objective data and analyses of pertinent natural resource issues. A standing nine-member advisory committee (see inside cover) suggests issues and priorities for the PAG. Results of each analysis are reviewed by a technical advisory committee selected separately for each inquiry (see the acknowledgments, page iii). Findings are made available in a policy analysis publication series. This is the fourth report in the series.

There has been no shortage of topics nominated for the attention of the Policy Analysis Group, but few piqued the interest of the PAG's advisory committee like the proposals in 1989-1990 for wolf recovery/reintroduction in Idaho. The potential impacts of wolves returning to Idaho concerned livestock, sportsmen, and outfitter interests especially, but others also expressed concern about the potential impacts of the wolf recovery approaches being proposed. This report presents an overview of the wolf recovery issue in Idaho and potential impacts of three alternative strategies for recovery--natural dispersal, reintroduction and federal legislative action. The analysis is based on a synthesis of scientific literature and legal cases pertinent to wolf recovery in Idaho, interpretation of the literature and case law by experts, and technical review of the report to confirm interpretations.

We hope the information will help Idaho decision makers, citizens, and federal officials carry out their roles in the decision process in a more informed manner.



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Executive Summary

The gray wolf (*Canis lupus*) is listed as an endangered species in the northern Rocky Mountains. The federal Endangered Species Act of 1973, as amended, protects gray wolves and requires federal agencies to try to reestablish viable populations to the region. Three Areas in the northern Rocky Mountains have been identified as suitable habitat for gray wolves where conflicts between humans and wolves can be minimized. One of these areas is in central Idaho, and includes wilderness, proposed wilderness, and adjacent public lands. The Yellowstone region and northwestern Montana are the other areas.

Three alternative strategies have been proposed for restoring wolves to central Idaho:

1. **Natural dispersal**--Recovery of the species through recolonization by natural dispersal from existing wolf populations in Canada and western Montana.
2. **Reintroduction**--Recovery through a reintroduction program under the provisions of the Endangered Species Act. Some wolves would be transplanted from existing populations to central Idaho.
3. **Federal legislative action**--An Act of Congress authorizing specific activities related to wolf populations. Such action might involve a reintroduction program and delisting of the wolf outside a designated recovery area.

The Endangered Species Act (ESA) makes wolf protection and recovery a national policy. This policy is controversial. Some people fear that wolves will kill domestic livestock, deplete ungulate populations, and disrupt other activities. Fear of ESA restrictions on hunting, grazing, logging, and recreation in central Idaho have fueled opposition to wolf recovery. Others feel that wolves belong in Idaho, and argue that they are a missing link in the ecosystems of the state.

The controversy over wolf recovery in Idaho stems from the diverse values of the people of the state and from lack of information. This report seeks to provide information on the biology of wolves, how they might be managed, the potential impact of wolves on other land uses, and the legal requirements under three proposed wolf recovery alternatives.

The report also addresses how the distribution and management of wolves in the state might differ under the three alternative strategies. The report does not favor one alternative over another, but it does present arguments for and against each of the three strategies.

Because wolves have been largely absent from Idaho for more than 50 years, gauging the possible effects of their return to Idaho is highly uncertain. Much is known about wolf behavior from studies in other areas. But the unique geographical, social, and ecological conditions in Idaho make it difficult to predict with certainty the impacts of the wolf's return.

In addition to providing analysis of the three proposed alternative strategies for wolf recovery, the report also addresses the seven questions summarized below. The body of the report includes detailed consideration of these questions that focus the analysis.

Are there wolves in Idaho? There has been no recent evidence of denning activity or of wolves breeding in the state. Sightings of lone wolves have been reported for decades. It is not known how many of these reports are valid, thus it is not known how many wolves are in Idaho.

Why is there a wolf recovery program in Idaho? The Endangered Species Act requires recovery efforts for all endangered species. The gray wolf is listed as an endangered species in Idaho.

Will the presence of the wolf mean road closures? The majority of the currently designated wolf recovery area is roadless. Forty-eight percent is classified wilderness, where roads are not allowed. Another large but uncalculated portion is roadless land and its fate has not been determined. In roaded areas, road closures are at the discretion of the agency managing the land. Road closures are expected to be uncommon, but might occur for temporary protection of den sites in the spring or prevention of illegal killing of wolves. This is more likely while wolf populations are initially being established than after they have recovered.

What will happen when wolves prey on livestock? A wolf control program to remove depredating wolves has been approved under the existing wolf recovery program, and is planned under all wolf recovery alternatives. The characteristics of the control program may vary depending on what type of recovery strategy is chosen. A control program would likely be directed toward resolving problems on a case-by-case basis.

What will wolves do to ungulate populations? Deer and elk will be their major prey. In areas where hunter harvest currently limits prey populations, the addition of wolf predation could cause a decline in prey numbers unless hunter harvest is modified. Wolves seem to have different effects under different circumstances, so the exact relationship between wolves and their prey in Idaho cannot be known until wolves are present.

Will wolves be endangered and protected as such forever? Not necessarily, depending upon how recovery proceeds. The U.S. Fish and Wildlife Service recovery plan has specific population targets for downlisting the wolf from "endangered" to "threatened" status and then delisting the wolf. Or, if wolves are reintroduced under the "experimental population" provisions of the ESA in Idaho, they will be treated as a "threatened" species.

Is central Idaho the only area selected for a gray wolf recovery program? No. Recovery and delisting in central Idaho is linked to the Montana and Yellowstone recovery areas. Three populations are considered necessary to sustain a viable wolf population in the northern Rocky Mountain region. The Great Lakes region (Minnesota, Wisconsin, and Michigan) also has a wolf recovery program.

Issue Overview

Gray wolves (*Canis lupus*) are legally protected under the Endangered Species Act (ESA) in the 48 contiguous states. Gray wolves currently inhabit parts of the Great Lakes region and the northern Rocky Mountain region. Wolves also appear to be recolonizing parts of northern Washington. Under the ESA, the U.S. Fish and Wildlife Service has developed a recovery plan (USFWS 1987) to reestablish viable populations of wolves in three areas in the northern Rocky Mountains:

- The Yellowstone Recovery Area, including Yellowstone National Park, the Absaroka-Beartooth, North Absaroka, Washakie, and Teton Wilderness Areas, and surrounding public lands.
- The Northwestern Montana Recovery Area, including Glacier National Park, the Bob Marshall, Great Bear, and Lincoln-Sagegoat Wilderness Areas, and adjacent public lands.
- The Central Idaho Recovery Area, including the Sawtooth, Selway-Bitterroot, Frank Church-River of No Return, and Gospel Hump Wilderness Areas, and the Mallard-Larkin, Moose Buttes, and Great Burn proposed wilderness areas, and adjacent public lands.

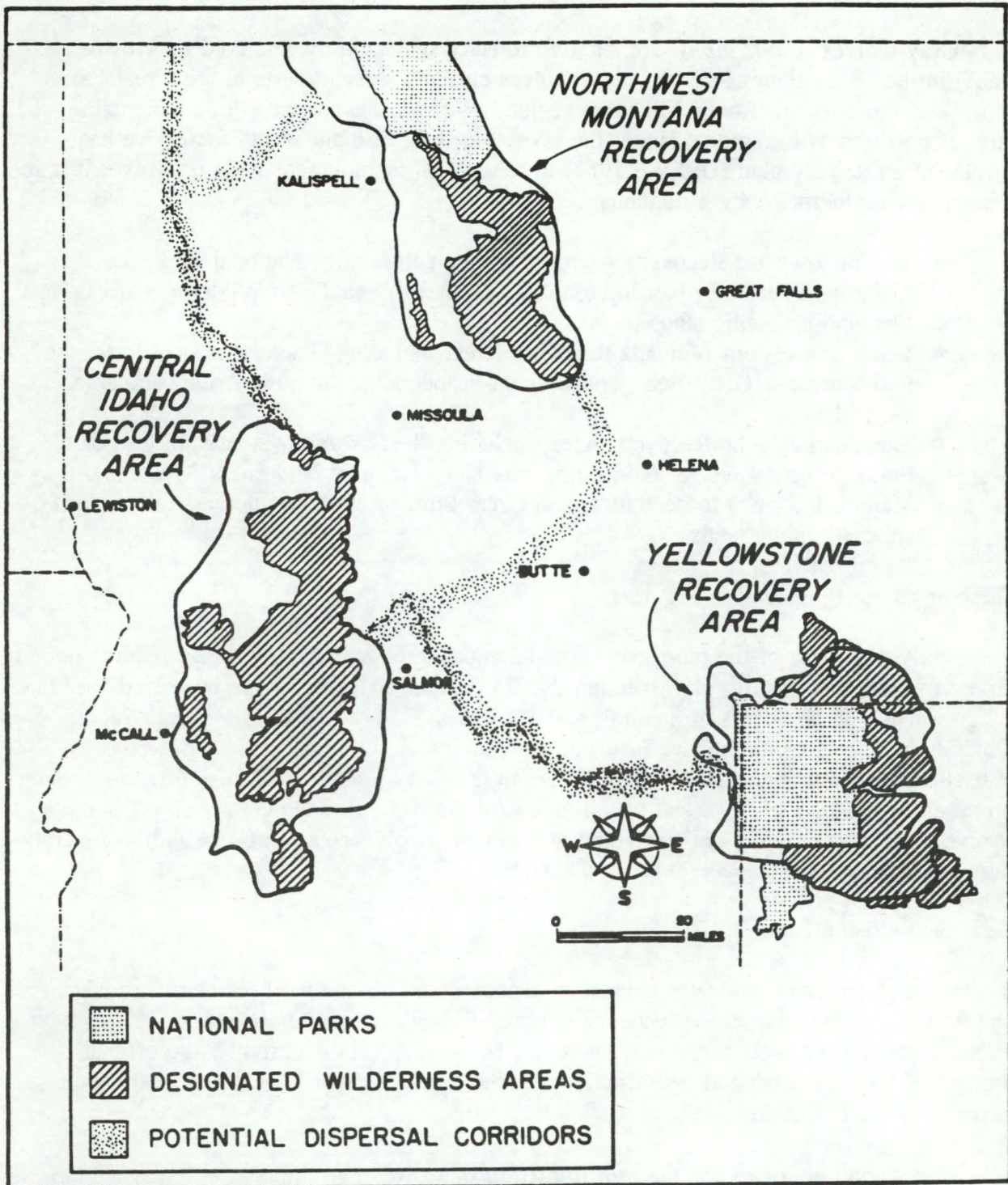
These areas are illustrated in Figure 1.

Wolves are one of the more controversial endangered species. A recent public opinion survey by Bath and Phillips (1990) found that 53 percent of Idahoans surveyed said they like the gray wolf, 35 percent were neutral, and 12 percent said they dislike wolves. People debate how wolves would behave in Idaho, how they would be managed, and what restrictions would be necessary to comply with the ESA. Uncertainty, misinformation, and strong attitudes, both positive and negative toward the wolf, fuel the controversy. Some believe that without public understanding and support, wolf recovery efforts will be severely hampered (Kellert 1990, Peek et al. in press).

Recovery Alternatives

Three alternative strategies have been proposed to promote wolf recovery in Idaho. The first alternative is to allow recovery to occur through *natural dispersal*, or recolonization, from wolf packs in Canada and Montana. This is currently the official strategy of the U.S. Fish and Wildlife Service, the agency primarily responsible for wolf recovery under the ESA.

The second alternative is the *reintroduction* of wolves into the central Idaho wilderness by transplanting them under the provisions of the ESA. The Act recognizes that reintroduction is a valid method of promoting the recovery of an endangered species. In addition, Congress amended the ESA in 1982 to facilitate the reintroduction of listed species into areas in which they had been extirpated by adopting the Act's experimental population provisions. These provisions allow for several animals to be transplanted into an area



Source: Northern Rocky Mountain Wolf Recovery Plan (U.S. Fish and Wildlife Service 1987).

Figure 1: U.S. Fish and Wildlife Service's proposed recovery areas for gray wolves in the northern Rocky Mountains.

where they no longer exist in the wild; the transplanted animals would be designated an experimental population. Because the members of an experimental population are treated as threatened rather than endangered, they may be managed more flexibly than other endangered species (ESA § 10(j)).

The third alternative is *federal legislative action*: a specific wolf recovery law that defines what actions will be taken and how the wolf will be managed. Such a law would supersede the ESA in the case of the gray wolf. An example of the third alternative was a bill proposed by Senator McClure in May, 1990 that failed to pass in Congress. Senate Bill 2674 would have required reintroduction of three breeding pairs of gray wolves into Yellowstone National Park and three pairs into the central Idaho wilderness. The bill also would have required the delisting of gray wolves--removal from the federal threatened/endangered species list--outside of the recovery zones defined in the bill.

Recent Events

In spite of disagreement over wolf recovery in Idaho, planning and recovery efforts have slowly moved ahead. In compliance with the ESA, the U.S. Fish and Wildlife Service released a Northern Rocky Mountain Wolf Recovery Plan in 1987 (USFWS 1987). This plan defines the recovery areas for the region and recommends recolonization through natural dispersal of wolves in the central Idaho and northwestern Montana recovery areas. For restoring wolves to Yellowstone, the plan suggests reintroduction. Wolves are recolonizing northwestern Montana, but recovery in the other two areas has not been documented.

In January, 1989, the Central Idaho Wolf Recovery Steering Committee was organized. Its purpose is to provide focus, direction, and leadership toward wolf recovery in central Idaho. Five agencies with a role in wolf recovery participate on the committee. The agencies are the U.S. Forest Service, Idaho Department of Fish and Game, U.S. Bureau of Land Management, U.S. Animal Damage Control, and U.S. Fish and Wildlife Service. The committee recommends policy on wolves to the agencies it serves (Central Idaho Wolf Recovery Steering Committee 1990).

Shortly after the McClure proposal failed, a plan was adopted by a House-Senate conference committee to create a ten member Wolf Management Committee of agency representatives and interest groups from Idaho, Montana and Wyoming to recommend a reintroduction and management plan for wolves in Yellowstone and central Idaho. This committee's recommendations are due May 15, 1991, and they could include aspects of any of the alternative strategies.

While wolf recovery efforts proceed, arguments continue over the best way to bring wolves back, the impacts they will have, and whether they should be restored at all. Illegal shooting and poisoning of wolves remains a potential threat to any wolves that recolonize Idaho. The Idaho legislature passed Idaho Code § 36-715 in 1988, preventing the Idaho Department of Fish and Game from participating in most wolf recovery efforts. Meanwhile citizen advocates for the wolf and federal agencies that must comply with the ESA continue

their efforts to promote wolf recovery. The findings of the Wolf Management Committee will not be known until May 15, 1991, and the extent to which wolves are currently recolonizing Idaho is debated. The process and consequences of wolf recovery depend on biology and law. This report addresses the facts concerning wolf behavior and the potential impacts of wolf recovery under the law, and identifies many areas of uncertainty that cannot be known until wolves return to Idaho.

Gray Wolf

Natural History

Wolves are highly social animals, occurring in packs that range in size from 2 to more than 25 individuals (Mech 1970). The pack consists of a breeding male and female, called the alpha pair, and their offspring from one or more generations. Packs establish and defend territories that vary in size from 48 square miles (125 km²) to over 981 square miles (2541 km²) depending on pack size and prey density (Ballard et al. 1987, Mech 1987). Gray wolf packs maintain their territories by howling (Harrington and Mech 1979) and scent marking (Peters and Mech 1975).

While most wolves live in packs, young or subordinate wolves often leave their natal packs in search of a mate and new territory. These lone wolves, often called "dispersers," may find a lone wolf of the opposite sex, establish a territory, and begin a new pack (Rothman and Mech 1979, Fritts and Mech 1981). Most wolves do not reach sexual maturity until at least 22 months. Alpha wolves are responsible for most successful matings, so reproduction after sexual maturity depends on social status (Peterson 1986). Wolf litter size can range from 1 to 11 pups (Mech 1970). Lone, unmated wolves scent-mark rarely, at least in areas where packs exist. Newly formed pairs scent-mark frequently, decreasing this activity as their territory becomes more established (Rothman and Mech 1979).

Wolves prey primarily on hoofed mammals (ungulates), although smaller mammals and birds are taken when available (Mech 1970). In northern Montana, wolves prey mostly on white-tailed deer, elk, moose, and occasionally on mule deer (Ream et al. 1986). Prey species vary depending on the availability of each species to wolves. Both the abundance and vulnerability of prey to wolf attacks helps to determine the make-up of wolves' diets.

Wolves usually mate in February and bear young 63 days later (Mech 1970). Pups are born in dens in early spring, and are moved to a "rendezvous site" after 6 to 10 weeks (Peterson 1986). Rendezvous sites are areas about an acre in size that serve as a resting and gathering place for the pack during the summer and early fall after the den has been abandoned (Murie 1944, Joslin 1967). Wolves howl more frequently when at den and rendezvous sites than elsewhere (Harrington and Mech 1979).

Wolves have high potential rates of population increase. Summer population increases of 60 percent from the pre-breeding winter population have been recorded in Alberta (Fuller

and Keith 1980, Bjorge and Gunson 1989). However, a number of natural factors act to regulate wolf populations. Up to 40 percent of adult females may fail to breed, and pup mortality may be over 50 percent (Mech 1970). In addition, wolves, if left alone, will regulate their populations in response to available food through establishment of territories that are defended against other wolves (Fuller and Keith 1980, Bjorge and Gunson 1989). However, populations often fluctuate according to the extent that humans kill wolves. For instance, in Alberta's Simonette River area, the wolf population rose from 14 or 15 wolves in 1975 to 40 in 1979, and then was reduced to 13 in 1980 by wolf control measures (Bjorge and Gunson 1989).

The wolf has flexible habitat requirements. Wolves require an adequate food supply, suitable denning and rendezvous sites, travel corridors, and regulation of human-caused mortality (USFWS 1987). Many endangered species face extinction because certain characteristics, such as the grizzly bear's low reproductive rates or the northern spotted owl's specialized habitat requirements, leave them vulnerable to human-caused disruptions. This is not the case with wolves, which have high reproductive rates and flexible habitat needs. The major causes of wolf decline in the contiguous 48 states have been trapping, poisoning, and shooting as well as reduction of their prey (Mech 1970).

Subspecies. Twenty-four subspecies of gray wolf were originally recognized in North America (Goldman 1944, Mech 1970). However the distinctions among most subspecies are rather fine, and several have been described on the basis of only one or a few specimens (Goldman 1944, Mech 1970). Further, there are only 8 recognized subspecies in all of Europe and Asia (Mech 1970). The development of subspecies requires some isolation between breeding populations. Records of gray wolves dispersing 550 miles (886 km) or more from their home ranges (Fritts 1983) suggest that fewer valid subspecies of wolves occur than have been recognized in North America. Thus Nowak (1983) recommended a thorough revision of North American gray wolf taxonomy and suggested that there may be as few as 5 valid subspecies.

The questionable validity of most North American wolf subspecies is of interest to the proposed restoration of wolves into central Idaho and Yellowstone. One of the questionable subspecies is the northern Rocky Mountain gray wolf (*C. l. irremotus*). However, immediately north of this subspecies' former range are current populations of wolves (*C. l. columbianus*) that are similar enough to *C. l. irremotus* to be used for restoration without any loss of the species' integrity in the area. The northerly subspecies is currently naturally recolonizing the former range of the original Rocky Mountain subspecies in Montana and southern Canada. If wolves are reintroduced, the source of transplant stock should come from populations in a similar habitat that are pre-adapted to the area and the prey base.

Although taxonomic arguments over subspecies may never be fully resolved, these arguments are not critical in the case of wolf recovery in Idaho. The species *Canis lupus* is listed as endangered everywhere in the 48 states except Minnesota, where it is listed as threatened. Therefore all members of the species are protected by the ESA, regardless of arguments about whether valid subspecies exist.

History and Current Status

Historically wolves were distributed throughout Idaho (Goldman 1944, Kaminski and Hansen 1984). In the latter half of the 19th century settlers decimated ungulate populations in the northern Rocky Mountains. Some wolves turned to the settlers' livestock for food, and efforts to eradicate wolves in the region began. The gray wolf populations in the West had been reduced to remnants by the turn of the century. By the late 1930s, few, if any wolves remained in Idaho or elsewhere in the northern Rocky Mountain region (USFWS 1987). Nevertheless, there have been scattered reports of wolf sightings in Idaho since the 1940s, and reports have increased in recent years (Kaminski and Hansen 1984, Central Idaho Wolf Recovery Steering Committee 1990).

Are there any gray wolves in Idaho now? To answer this question, a distinction must first be made between wolf packs and lone wolves. No evidence of wolf packs has been found in Idaho in recent years (Kaminski and Hansen 1984, USFWS 1987). The presence of packs should be easy to determine: mated pairs should be readily heard, and their scent-marking should be conspicuous. Furthermore, wolves should be detected in winter where concentrations of ungulates exist. Wolves will move to these concentrations, which are located at low elevations along river systems or on open ridges. Evidence of wolves is usually indicated by the presence of many tracks in the snow, and wolf presence is often revealed by ravens and eagles that feed on carcasses and fly when disturbed (Mech 1970). Central Idaho, however, contains a lot of remote country, and pack activity might not be detected immediately (Jay Gore, personal communication, November 5, 1990).

The number of lone wolves in the state is a source of some debate. Some backcountry users have reported seeing lone wolves in Idaho for decades (Kaminski and Hansen 1984). Since both coyotes and dogs may be mistaken for wolves, it is difficult to assess the validity of these reports. Nonetheless, some wolves have been present. In 1978, a hunter shot a gray wolf near Warm Lake in the Boise National Forest. In the early 1980s, a wolf was photographed in the Clearwater National Forest (Kaminski and Hansen 1984).

Kaminski and Hansen (1984) studied the historical and possible present location of wolves in central Idaho. They compiled approximately 600 unconfirmed reports of wolf sightings between 1974 and 1983. Of these, 238 were classified as "probable" (see box on **Wolf Reports**). From this they concluded that the sightings suggested between 17 and 40 actual wolves might be present in the state. A two year effort to gather physical evidence of wolves--scat, prey kills, and tracks--provided evidence of only one to four wolves. After a thorough consideration of all the evidence, they concluded that no more than 15 wolves were present in central Idaho during the 1974-1983 period (Kaminski and Hansen 1984).

The Central Idaho Wolf Recovery Steering Committee is currently attempting to monitor and verify wolf sightings in the state. One hundred and sixty-eight probable wolf sightings were reported between 1984 and early 1989 from hunters and others in Idaho. Most of the reports were of lone animals, and no evidence of packs has been noted (Central Idaho Wolf Recovery Steering Committee 1990).

The occurrence of individual wolves outside areas where the species breeds is expected, because lone wolves are known to disperse long distances in search of mates and unoccupied territory (Fritts 1983, Mech 1987). Lone wolves have been reported for decades (USFWS 1987) and so the presence of lone wolves should not necessarily be considered evidence of recolonization. These reports continue, but whether or not any gray wolves will start breeding in Idaho in the near future is unknown.

Wolf Reports

Not all reports of wolf sightings are equally reliable. Factors such as the observer's distance from the animal, their knowledge of the difference between wolves and coyotes, and what kinds of evidence they report, clearly make some wolf sighting reports more credible than others. Weaver (1978) developed a point system for categorizing wolf observations into "probable," "possible" and "doubtful" classes. Wolf reports are given points based on the factors mentioned above. This system was used by Kaminski and Hansen (1984) to evaluate wolf sighting reports and is being used by the Central Idaho Wolf Recovery Steering Committee as well.

The Endangered Species Act of 1973

Wolves are legally protected in Idaho because they are listed as an endangered species under the ESA. In fact, the wolf recovery effort in Idaho is a direct result of ESA requirements. The Act is a powerful and comprehensive law for the conservation of threatened and endangered species. A species can be listed as either endangered--in danger of extinction throughout all or a significant portion of its range--or threatened--likely to become an endangered species within the foreseeable future (ESA §§ 3(6),(20)). The gray wolf is listed as endangered everywhere in the 48 contiguous states except Minnesota, where it is listed as threatened.

Requirements of the ESA

The ESA contains two different sets of prohibitions against actions that will affect a listed species. The first is Section 9, a group of stringent restrictions--reinforced by the risk of hefty civil and criminal penalties--on any person or entity whose conduct takes, harms or harasses an endangered species. The second is the no-jeopardy standard in Section 7: federal agencies may not authorize or carry out actions that might jeopardize the continued existence of a listed species.

In addition, the ESA embodies the congressional recognition that protecting listed species from harm is not always enough. The Act, therefore, requires federal agencies to take positive steps to promote the recovery of listed species. This obligation is the basis for the wolf recovery program for the northern Rocky Mountain region.

Section 9--taking. The ESA contains an all-encompassing prohibition of any conduct that harms an endangered species. Section 9 states that it is illegal for "any person subject to the jurisdiction of the United States" to "take" an endangered species. Clearly, the Act prohibits conduct that results in the death of an identifiable member of the species. But it also prohibits a wide range of other actions because the term "take" is very broadly defined as meaning "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct" (ESA § 3(19)). Activities affecting normal behavioral patterns of the species are prohibited. Indeed, habitat modification that prevents the recovery of the species may in itself be considered a "taking" (*Palila v. Hawaii Dept. of Land and Natural Resources* 1988). Because of the gray wolf's flexible habitat requirements, habitat modification is unlikely to be a significant issue for the gray wolf as long as prey populations remain healthy. Also, the Idaho recovery area is primarily wilderness and roadless areas.

The taking prohibition is enforced by civil and criminal sanctions. A violation of a prohibition involving endangered species subjects the individual to criminal sanctions of up to \$50,000 and a year in jail; civil penalties of up to \$25,000 may also be assessed. In addition, anyone convicted of taking a protected species faces the loss of all federal permits and licenses. These penalties could be assessed for an illegal taking of a wolf.

The Act recognizes very few exceptions. The only exception that is potentially applicable to a northern Rocky Mountain population of gray wolves authorizes the Secretary to permit otherwise prohibited activities "for scientific purposes or to enhance the propagation or survival of the affected species" (ESA § 10(a)(1)(A)). The Act also provides that penalties may not be imposed in cases of self defense or to protect another person from the listed species. Under the ESA, defense of property is not a defense to a prosecution for taking an endangered species (*Christy v. Hodel* 1988).

Section 9, unlike the remainder of the Act, makes a distinction between threatened and endangered species. While the Secretary of the Interior generally lacks the power to permit the taking of an endangered species, the Secretary may allow the taking of a threatened species. The discretion to permit taking of threatened species is to be guided by the requirement that such action must be "necessary and advisable to provide for the conservation" of the threatened species (ESA § 4(d); see *Sierra Club v. Clark* 1985).

Section 7--conservation, consultation, and critical habitat. The ESA contains a set of restrictions that apply to federal agencies and individuals seeking permits from such agencies. Section 7 imposes two obligations on all federal agencies. First, agencies are to use their authority to conserve threatened and endangered species. Second, the agencies are to take the steps necessary to "insure that actions authorized, funded, or carried out by" an agency are "not likely to jeopardize the continued existence of any [listed] species or result in the destruction or adverse modification" of the species's critical habitat (ESA § 7(a)(2)). No critical habitat for wolves has been designated under the ESA in the northern Rocky Mountain region, so critical habitat protection is inapplicable there.

To insure that agencies comply with Section 7, the ESA requires that all federal agencies consider the effects of their proposals on listed species before acting. First, the Act requires that the agency proposing an action determine whether a listed species "may be present" in the area. If so, the agency must determine whether the species "is likely to be affected" by the action. Finally, if the species is likely to be affected, the action agency must consult with the U.S. Fish and Wildlife Service--a process that leads to a written biological opinion on whether or not the proposal will jeopardize the listed species (ESA §§ 7(b)-(c); see *Thomas v. Peterson* 1985.)

If the Fish and Wildlife Service's opinion is that the proposed action will jeopardize a listed species, the action agency may not proceed with the action as planned (ESA § 7(a)(2)). Thus, action funded, authorized, or carried out by a federal agency may not appreciably reduce the species' chances of survival.

Any activity that requires a federal permit is subject to the consultation procedures and the no-jeopardy prohibition. As a result, the Act's constraints apply to such state and private actions as the construction of a highway partially financed with federal funds, harvesting timber, drilling for oil and gas, exploring for minerals on federally owned land, constructing an irrigation or hydroelectric dam--in short, any activity that requires federal funding or authorization.

Section 7--incidental taking. Recognizing that some actions may not jeopardize the continued existence of a listed species, but may result in the taking of individuals, Congress created an incidental taking exception. Under the Section 7 consultation process, the Secretary may issue a biological opinion concluding that a proposed action will not jeopardize a listed species even though it will incidentally result in the death of some individual members of the species or in some adverse habitat modification; the incidental taking of a listed species in such cases can be allowed. This provision is amplified in Section 10, which authorizes the Secretary to permit an otherwise prohibited taking under some circumstances if it "is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity" (ESA §§ 10(a)(1)-(2)).

The most significant limitation on the incidental taking permit is that it is restricted to actions funded, authorized, or carried out by a federal agency. Purely private actions do not qualify and thus remain subject to the taking prohibitions of Section 9.

Affirmative obligations to promote the recovery of listed species. The broadest of the affirmative duties created by the ESA requires all federal agencies to "utilize their authorities in furtherance of the purposes of this Act by carrying out programs for the conservation of" listed species (ESA § 7(a)(1)). The expansive scope of this obligation comes from the Act's definition of the term "conservation" as "the use of all methods and procedures which are necessary to bring any endangered or threatened species to the point at which the measures provided pursuant to this Act are no longer necessary" (ESA § 3(3)). As the United States Supreme Court has noted, the Act "reveals an explicit congressional decision to require agencies to afford first priority to the declared national policy of saving endangered species,"

a national policy that is plainly intended "to halt and reverse the trend toward species extinction, whatever the cost" (*TVA v. Hill* 1978 at 185, 184).

In addition to the general obligation to take affirmative steps to conserve listed species, the Act imposes a more specific duty on the Secretary of the Interior to develop and implement recovery plans "for the conservation and survival" of listed species (ESA § 4(f)). Recovery plans are to contain three types of information: first, a description of the "site-specific management actions" necessary to achieve the goal of conservation of the species; second, a set of "objective, measurable criteria which, when met, would result" in delisting the species; and third, estimates of the time and cost necessary to achieve the delisting (ESA § 4(f)(1)(B)). The purpose of requiring a recovery plan is to determine and describe the steps that are necessary to bring the listed species to the point at which it may be considered recovered and therefore delisted.

Wolf Conservation in Idaho

Current efforts to restore the wolf to parts of its former range--including the northern Rocky Mountains--are founded on the requirements of the ESA and on wolves' historical distribution throughout the region (Goldman 1944, Kaminski and Hansen 1984). However, the legal requirement to protect and restore the wolf has proven difficult to carry out. The difficulty is not biologically based. Wolves once roamed all over North America, and can prey on a number of different ungulate species. The central Idaho wilderness can provide for the biological needs of wolves.

The problems with wolf recovery are social, political, and legal. Proponents of wolf recovery argue that "wolves are an important natural predator occupying a vital niche" on public lands (Keiter and Holscher in press). Wolf opponents cite livestock depredation, predation on ungulates, and possible restrictions on multiple-use lands as arguments against wolf recovery.

Polls of the general public in various parts of the U.S. show considerable public interest in wolf restoration, but there is also substantial resistance to recovery (McNaught 1987, Kellert 1990). Livestock producers are typically highly antagonistic toward predators (Buys 1975, Kellert 1986, Biggs 1988, Bath and Buchanan 1989) and are not willing to alter their views regarding wolf restoration even if offered financial compensation for losses of stock (Stuby et al. 1979, Bath and Phillips 1990, Kellert 1990). Opposition to wolf restoration in upper Michigan among rural, lower income, male hunters, and a general distrust of government were involved in lack of success of an attempt to reintroduce wolves (Hook and Robinson 1982). A recent survey of Montana and Idaho resident attitudes toward the wolf found 53.3 percent of Idahoans surveyed liked the wolf, 34.8 percent were neutral, and 11.9 percent disliked the wolf (Bath and Phillips 1990).

Five agencies share responsibility for wolf recovery in central Idaho. The U.S. Fish and Wildlife Service is the lead agency in conservation and recovery of endangered species.

The U.S. Forest Service manages the national forests, which comprise most of the potential wolf habitat in central Idaho. The Bureau of Land Management manages some lands that may serve as gray wolf habitat. Animal Damage Control has responsibilities for predator control, and will be responsible for verifying and controlling depredating wolves. The Idaho Department of Fish and Game is the state's wildlife management agency and its role will be described in a later section.

The Recovery Plan

In 1987, the U.S. Fish and Wildlife Service published the Northern Rocky Mountain Wolf Recovery Plan in compliance with the ESA (USFWS 1987). The plan covers the three recovery areas described earlier--northwestern Montana around Glacier National Park, central Idaho, and Yellowstone. The criteria for selecting these three recovery areas include a sufficient prey base to support ten breeding pairs of wolves, a minimum of 3,000 square miles, and less than 10 percent private ownership except railroad grant lands (USFWS 1987). As required by the ESA, the Plan contains a detailed description of management tasks, and specifies target population levels for reclassifying and delisting the wolf in the northern Rocky Mountains. According to the Plan, maintenance of at least ten breeding pairs in a recovery area for at least three years will result in reclassifying wolves in that area as threatened rather than endangered. When at least ten breeding pairs have been maintained for at least three years in all three areas, the species will be delisted. The Plan estimates that a wolf population of ten breeding pairs will be approximately 100 wolves (USFWS 1987).

In the northwestern Montana and central Idaho recovery areas, the plan emphasizes gray wolf recovery through natural dispersal from existing populations in Canada. The Plan states that other options should be considered if progress toward natural recovery is not being made by 1992. Reintroduction is one such option. Recovery through a reintroduction program is recommended for Yellowstone (USFWS 1987).

The plan suggests that three zones of wolf management should be created in each recovery region. Zone 1 is to contain key habitat components to sustain target populations of wolves, and wolf recovery is to be promoted. In this zone, wolf conservation is to take priority. Zone 2 is a buffer zone where wolf conservation is to coexist with other high priority land uses. Zone 3 is everything outside the wolf recovery area where wolf protection will not be allowed to impinge on human uses of the area (USFWS 1987). Wolf management zones have not been delineated in any of the recovery areas. Montana will develop a wolf management plan beginning in 1992 to determine if zone management has application and, if so, where the zones should be located (Steve Fritts, personal communication, January 14, 1991).

Idaho Department of Fish and Game's Role in Wolf Recovery

State wildlife agencies have the primary role in managing wildlife within state boundaries. Idaho's state laws and wildlife management plans are overridden in the case of the wolf by the federal ESA, which gives federal agencies the primary role. The Idaho

Department of Fish and Game played a role in shaping a wolf recovery plan by participating on the Northern Rocky Mountain Wolf Recovery Team--the group responsible for producing the plan. The Idaho Department of Fish and Game is currently represented on the Central Idaho Wolf Recovery Steering Committee, and the newly created Wolf Management Committee, which includes the Director of the Idaho Department of Fish and Game. Wolf management decisions could return to the state when either the wolf recovery targets in the recovery plan are reached, or federal legislation is passed that requires "delisting" the wolf, as Senator McClure's proposal would have done. Currently, the Idaho Department of Fish and Game classifies the wolf as an endangered species in agreement with the wolf's federal protected status.

However, the Idaho Department of Fish and Game's participation in planning efforts and eventual state management of wolves is currently restricted by Idaho Code § 36-715. This law, enacted by the Idaho legislature in 1988, prohibits the Department of Fish and Game from expending funds or cooperating with federal agencies in wolf recovery efforts under most circumstances. The relevant section of this law pertaining to wolf recovery states:

The department of fish and game shall not be authorized to expend funds, transfer assets or enter into a cooperative agreement with any agency, department or entity of the United States government concerning wolves unless expressly authorized by state statute except that the department is authorized to provide a representative to participate on the northern rocky mountain wolf recovery team and to participate in activities regarding nuisance wolves. (Idaho Code § 36-715(2)).

Under this restriction, the extent to which the Department may participate on the Wolf Management Committee, represent state concerns related to wolf recovery, or develop a management plan for wolves so that delisting may proceed, is limited to an uncertain extent.

Potential Impacts of Wolves Returning to Idaho

How the return of gray wolves to Idaho would affect land use, livestock, and the ungulate populations of central Idaho is uncertain, and will remain so until wolves return. However, a substantial amount of information about wolf behavior and requirements in other regions does exist and it may be extrapolated to estimate the possible impacts of wolves in Idaho. These impacts will depend to some extent on how wolves get to Idaho, how they are managed, and where they go.

Livestock Grazing and Depredation

Depredation upon livestock may occur if wolves return to central Idaho. The extent of wolf depredations has been studied in other regions in recent years. Fritts (1990) summarized many of these studies, reporting that wolves kill less than one percent of the livestock within primary wolf habitat in Minnesota, British Columbia and Alberta. In

Minnesota, during the 1975-1986 period, 0.3 percent of farms in wolf range sustained verified wolf depredations annually (Fritts 1990). Wolves may live near farms or in grazing allotments without killing livestock. The pattern of depredations attributable to coyotes, where a few individual ranchers incur substantial depredations while others do not (Cain et al. 1972), may be the expected pattern with wolf depredations.

A number of factors affect the extent of depredation by wolves in areas they occupy. In Alberta, the majority of wolf depredations occur in remote grazing leases in boreal forest in more northerly areas (Bjorge 1983). Calves and yearlings are more frequently taken than adults in Alberta and British Columbia (Gunsón 1983, Tompa 1983). Heaviest losses are in summer when cattle are pastured without much supervision. Wolves prey on adults and young sheep equally in Alberta (Gunson 1983). Horses, when available, are taken in small numbers. Horses and mules grazing within the Idaho recovery area are generally mature stock confined to small pastures or corrals near occupied campsites. These horses and mules are unlikely to be preyed upon compared to livestock grazing further away from humans. Wolves recolonizing northwestern Montana have preyed on livestock, and have been controlled on four occasions since 1980 (Bangs et al. in press). However, wolves in Montana have also remained near and within pastures grazed by cattle without preying on them, as has been observed in Minnesota (Fritts 1990).

Wolf depredations on livestock in Minnesota are influenced by livestock husbandry practices, environmental factors affecting the vulnerability of natural prey, and whether or not wolves that have learned to prey on livestock are present (Mech, Fritts, and Paul 1988). Wolf depredations of domestic animals in Minnesota were found to be higher following mild winters, possibly as a result of two factors: livestock management and deer fawn vulnerability. Greater exposure to wolves following mild winters occurs, because farmers turn out their livestock earlier than they do after severe winters. Also, deer fawns may be born stronger after milder winters due to the influence of prenatal nutrition and so are less vulnerable to wolf predation.

In the central Idaho wolf recovery area most livestock calving would not occur within wolf habitat, unlike Minnesota. Calving in the northern Rocky Mountains usually takes place in late winter or early spring in lowlands near buildings and human activity rather than on federal lands grazed later on in the season. This offers calves protection from wolves early in the year.

In the northern Rocky Mountains, prey populations often exhibit seasonal migrations, compared to year-round residence of prey in Minnesota. Wolves may be expected to follow migrating prey populations. In areas where deer and elk winter near livestock, depredations may be expected in winter. However, much of the winter range within the recovery area is not associated with livestock. Depredations are most likely to occur in summer when wolves associate with wild prey and livestock within and adjacent to the recovery area.

More than 300 horses and mules, 13,000 sheep, and 12,000 cattle are grazed in and adjacent to the central Idaho wolf recovery area on National Forest lands (Kaminski and

Hansen 1984). The actual numbers of livestock and allotments that are active will vary somewhat between years. Based on experience in Minnesota and western Canada, it might be expected that less than one percent of these animals would be taken by wolves if the entire 12,000 square miles (31,000 km²) central Idaho recovery area is recolonized. Wolves may be expected to concentrate in areas where their prey are most abundant, but the potential distribution of wolves within the recovery area is uncertain. Because of differences in landscape, prey populations, and livestock grazing in Minnesota, Canada, and Idaho, there will be uncertainty about wolf depredations in Idaho until they return.

One final issue related to wolf predation should be addressed. Dogs have occasionally been preyed upon by wolves in Alaska, Canada, and Minnesota (Fritts 1990). In Minnesota, 28 verifiable instances of wolf depredations on dogs occurred between 1979 and 1987, a minimum estimate of the extent of predation. Dogs may be considered as closely related competitors or prey, and they may be deliberately hunted in some circumstances (Fritts and Paul 1989). However, since the wolf recovery area in Idaho is primarily on federal land, conflicts between wolves and dogs should be rare.

Wolf control. The extent to which wolves should be removed or killed to minimize depredations is a contentious issue. In wolf habitat in Canada and the United States where livestock depredations occur, wolf control is currently used to reduce losses. Ongoing wolf control programs are effective in reducing depredations in Alberta, British Columbia, and Minnesota (Fritts 1982, Tompa 1983, Bjorge and Gunson 1985). In addition, prompt action to remove depredating wolves may reduce illegal and non-selective killing of wolves.

As long as the gray wolf is listed as an endangered species, it remains protected under Section 9 of the ESA. Ranchers may not legally kill wolves, even those suspected of killing livestock. However, a federal program controlling wolves that prey on livestock is planned for Idaho (USFWS 1990), and is being implemented in Montana (USFWS 1988).

Although the ESA generally forbids the taking of an endangered species, the U.S. Fish and Wildlife Service argues that a federal wolf control program is legal (USFWS 1988). Since the definition of "taking" in the Act includes killing, harming, or capturing, the legality of wolf control is uncertain. The U.S. Fish and Wildlife Service contends that it can legally administer a wolf control program aimed at removing depredating wolves under a provision of the Act which allows the Secretary to permit otherwise prohibited takings "for scientific purposes or to enhance the propagation or survival of the affected species" (ESA § 10(a)(1)(A)). The agency argues that controlling depredating wolves will enhance the overall survival of the wolf:

by demonstrating that responsible federal agencies will act quickly to resolve depredation problems. Timely response to depredations will alleviate the perception of government inaction that often results in increased landowner frustration, which, in turn, may lead to the indiscriminate killing of wolves (USFWS 1988 at 5).

This interpretation has not been legally challenged and the U.S. Fish and Wildlife Service is currently administering a wolf control program in Montana (USFWS 1988), where an estimated 40 to 60 wolves occur (Bangs et al. in press). The agency plans to follow the same procedures for controlling problem wolves in Idaho (USFWS 1990). Although wolf control aimed specifically at removing depredating animals has been found legal under the ESA in Minnesota, wolves are classified as threatened in Minnesota (*Sierra Club v. Clark* 1985). Therefore, this case cannot be used to show wolf control of an endangered--and therefore more stringently protected--population is permissible under the ESA.

Ungulate Populations, Hunting, and Wolves

Wolves prey primarily on wild ungulates, with beaver and other smaller mammals consumed in appreciable amounts mostly during summer. Deer and elk should be the principal components of wolf diets in central Idaho because they are the most abundant ungulate species in the area. White-tailed deer may be important where they are abundant north of the Salmon River, while mule deer will likely be prominent in wolf diets south of the Salmon River. Small mammals including hares, beavers, and other rodents may become important in wolf diets during periods when ungulates are scarce (Mech 1970, Gauthier and Theberge 1987).

The effects of wolves on prey populations are difficult to measure and difficult to distinguish from other factors influencing prey population dynamics (Fritts 1990). Many variables can influence prey populations and the effects of wolves upon these populations. Ungulate population declines resulting from severe weather, habitat deterioration, or hunting may be extended by wolf predation so that ungulate population recovery is delayed. Because wolves can switch from one prey species to another, their numbers are not necessarily tightly linked to any single prey species. The presence of bears, coyotes, and other predators in wolf habitat can also have an important impact since wolf predation combined with other predation may reduce numbers of young ungulates during calving and summer periods (Gauthier and Theberge 1987).

Human hunting normally acts on ungulate populations as mortality additional to that caused by wolf predation. In areas where hunting is not a limiting factor on ungulate populations, the effect of wolf predation will vary depending upon habitat conditions and weather patterns. In areas where hunter harvest of ungulates is at the maximum level that the population can sustain, the addition of wolf predation on these ungulate populations may cause them to decline (Peek and Vales 1989, Vales and Peek 1990). This may result in reductions in hunter harvest, and management of wolf numbers.

In the Simonette River of Alberta, a 772 square mile (2,000 km²) study area, Bjorge and Gunson (1989) reported that wolf predation was not limiting moose or deer populations but that for elk, the combination of hunting and predation was at approximately the same level as annual recruitment to the population. Wolf predation has had highly variable effects on white-tailed deer in Minnesota (Nelson and Mech 1986, Fuller 1990) and moose on Isle Royale (Allen 1979). Even where wolves do not cause prey declines, they may extend the

length and extent of a decline once it has started. Periods of severe winters appear to make prey more vulnerable to wolf predation, whereas mild winters favor the prey.

Peek and Vales (1989) estimated that in the eastern portion of the northwestern Montana recovery area, harvest of cow elk would have to be reduced or stopped if 50 wolves were preying on elk and all wolf caused mortality was additive to all other elk mortality. The population in this area is regulated by hunter harvest. Hunter harvest of female elk in central Idaho is well below levels that would be required to regulate numbers, with a general bull season and limited numbers of permits for antlerless elk being the typical season. Wolves are predicted to have less impact on prey in central Idaho than in the Montana study area because of the lower levels of hunter harvest of cows.

Vales and Peek (1990) reported that for heavily hunted elk populations, wolves can be supported only if hunter harvest is directed primarily at bulls. There is insufficient information concerning the relationship of hunter harvest to elk population numbers in the central Idaho area to estimate the potential effects of wolves. However, because elk populations are stabilizing and Idaho Department of Fish and Game goals are to maintain or increase present populations in central Idaho, bull seasons would likely prevail in this region, as they do now, if wolves were present.

Peek and Vales (1989) also studied potential impacts of wolves on mule deer in the eastern portion of the Montana recovery area. Mule deer populations there are not regulated by hunter harvest and are thought to fluctuate between 6,000 and 12,000 animals. Results of population modelling indicated that mule deer would not be affected when at levels above 9,000, but could be at levels below that figure, in which case hunter harvest might have to be adjusted downward. In Idaho, mule deer populations quite likely fluctuate according to weather patterns rather than hunter harvest at this latitude of their range (Hamlin and Mackie 1989), although population structure could be altered locally by hunter harvest, as around back-country landing strips. Projections concerning the effects of different levels of wolf predation on mule deer and white-tailed deer in the central Idaho area need to be made, but will require more detailed assessment of population dynamics than available information allows.

Kaminski and Hansen (1984) estimated that 219 wolves could be supported in the central Idaho recovery area without causing a decline in mule deer, white-tailed deer and elk populations. These projections were based on estimates of population growth rates between 1981 and 1985 for deer and elk, and a wolf predation rate of 16.6 elk or deer per wolf per year, using the methods of Keith (1983). These projections assumed that hunting mortality acts in addition to, not as a replacement for wolf predation and other mortality. Bighorn sheep, mountain goats, and moose may be taken occasionally.

Central Idaho deer and elk populations have increased in recent years, and are currently estimated to be at or above 1981 levels. Approximately 30,000 to 35,000 elk inhabit the recovery area, with about 5,200 elk harvested in 1988 (Kuck et al. 1989a). Although deer

population estimates are unavailable, approximately 7,000 deer were harvested within the recovery area in 1988 (Kuck et al. 1989 b,c.)

Human Safety

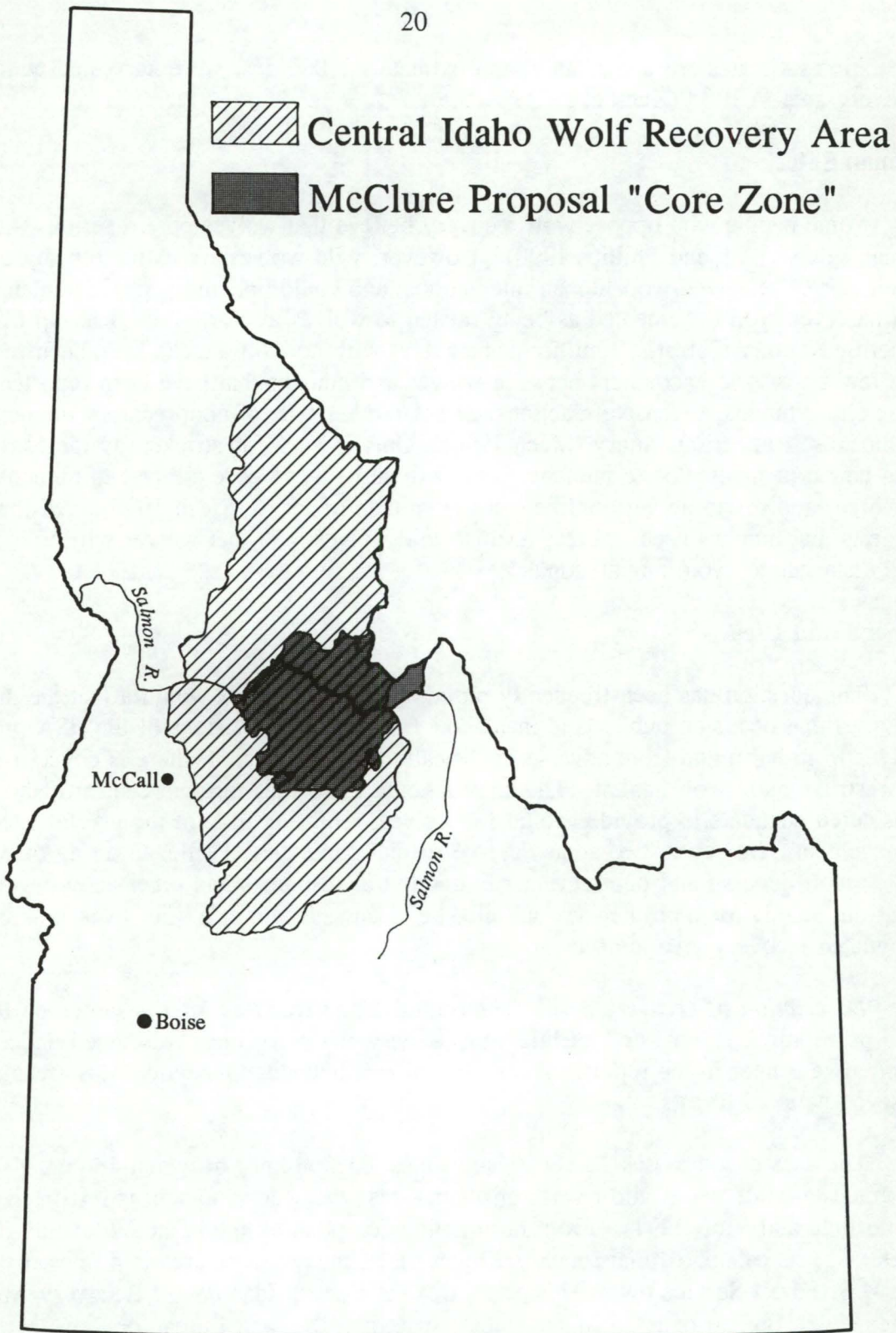
Some people who oppose wolf recovery believe that wolves pose a serious threat to human safety (Bath and Phillips 1990). However, wild wolves are extremely shy of humans. Mech (1990) reviewed wolf-human interactions, and could not find a single human fatality that has ever been documented as being related to wolves in North America. In Minnesota's Superior National Forest, 19 million visitor days with no wolf attacks have been recorded. The few aggressive encounters between wolves and humans that have been reported seemed to be either threats, defensive reactions, or some other type of nonpredatory interactions that did not result in serious injury (Mech 1990). Only if a wolf is stricken by rabies, or if it has been tamed or habituated to humans, is the animal likely to pose a threat to humans. Rabies in wolves appears to be very unlikely at the latitude of Idaho (Mech 1990). All the evidence suggests that humans need not fear healthy wild wolves, and that wolves will often travel long distances to avoid human contact.

Other Land Uses

The question has been frequently raised about how wolves would affect the many activities that occur on public land in Idaho. Because the provisions of the ESA protect wolves from harm and from adverse modification of their habitat, there is concern over land use restrictions in wolf habitat. The large amount of roadless area in central Idaho is considered adequate to provide habitat for wolves, requiring little in the way of special management. However, two areas deserve special comment: 1) illegal killing of wolves, and 2) wolf denning and pup rearing. Extraction of resources and other activities on public lands designated for multiple uses will also be discussed. First, a brief overview of the designated recovery area is necessary.

Description of recovery area. The central Idaho recovery area is shown on Figure 2. Also on Figure 2 is Senator McClure's proposed wolf "core zone," discussed under Alternative 3 later in the report. The recovery area includes four wilderness areas and parts of seven national forests.

The area encompasses 12,186 square miles (31,560 km²) of which 48 percent is protected in wilderness, wild rivers, or other areas where development is restricted (Butterfield and Scott 1991). From information compiled by the Idaho Wildlands Coalition (1990), it was calculated that roughly 20 percent of the recovery area is proposed wilderness. The U.S. Forest Service owns 97.7 percent of the Central Idaho Wolf Recovery Area. Together the Bureau of Land Management, state of Idaho, and Bureau of Reclamation own slightly less than 1 percent of the land, and 1.5 percent is privately owned (Butterfield and Scott 1991).



Source: Map provided by Bart Butterfield and J. Michael Scott, Idaho Cooperative Fish and Wildlife Research Unit, University of Idaho, Moscow; redrawn by Lorraine Ashland, Graphics Specialist, Forestry Information Services, College of Forestry, Wildlife and Range Sciences, University of Idaho, Moscow.

Figure 2: Comparison of Central Idaho Wolf Recovery Area and Wolf Core Zone proposed by Senator McClure.

The core zone proposed by Senator McClure includes 2,600 square miles (6,734 km²). The Frank Church-River of No Return wilderness and a small amount of multiple-use land in the Salmon National Forest make up the core zone. The U.S. Forest Service owns 99.5 percent of the core zone, and .3 percent is privately owned (Butterfield and Scott 1991).

Illegal killing. The illegal killing of wolves from roads is a major cause of wolf mortality in regions inhabited by wolves. In areas with road densities greater than .94 miles of road per square mile (.58 km road per km²), wolves generally sustain high mortality from human causes (Thiel 1985, Mech et al. 1988). However, wolf occupation of habitat with higher road densities is possible if the habitat is adjacent to extensive roadless areas (Mech 1989). Road densities thus provide a preliminary estimate of the potential of an area to support wolves (Thiel 1985).

Central Idaho was chosen for wolf recovery partly because of its large amount of wilderness and roadless areas (USFWS 1987). The U.S. Fish and Wildlife Service expects the area to provide adequate seclusion for wolves without requiring road closures. Illegal killing of wolves can be readily accomplished and is difficult to detect. Efforts to minimize human activity in wolf-occupied areas may reduce opportunistic or accidental illegal taking, but probably could not prevent individuals who deliberately set out to kill wolves from doing so. Restricting access into wilderness areas or other remote wolf habitat would probably not deter these individuals, and thus would be unlikely. However, it is possible that if wolves are killed illegally in central Idaho, managing agencies might try to restrict access and close roads (Jay Gore, personal communication, November 5, 1990).

Denning and pup rearing. Wolves are most sensitive to human disturbance from the birth of pups through the initial rearing of young. Wolves require a secluded denning site and then some protection from human disturbance for the first several months (Kaminski and Hansen 1984).

Restrictions of human use within roughly a 1.5 mile (2.4 km) radius of homesites that wolves select for denning and pup rearing from early April through June was recommended by Chapman (1977). Wolves may ignore human disturbance at homesites, may move pups and abandon the den, or, rarely, abandon pups. In Denali National Park, Alaska, wolf dens within .62 miles (1 km) of established centers of human activity were permanently abandoned although den sites within 1.5 miles (2.4 km) of roads and campgrounds were frequently used (Chapman 1977). In Montana, it is recommended that intensive human use not be permitted within 1 mile (1.6 km) of active wolf dens between March 15 and July 1 (Steve Fritts, personal communication January 14, 1991).

Temporary use restrictions within a mile of wolf den sites might be implemented in Idaho from March or April through June. However, denning sites are most likely to be located in remote areas away from roads and humans. After wolf recovery has progressed, the occasional disruption of a homesite or occurrence of a pack close to a frequently-used area would be of less concern than early in recovery.

Activities on multiple-use lands. Resource extraction activities such as logging and mining are not likely to be much affected by the presence of wolves. Both activities occur extensively in occupied wolf habitat in Canada, Alaska, and Minnesota. The major effect of logging and mining will be human access during early recovery stages as previously discussed. However, since vehicle access is already restricted over much of the designated recovery area, this is unlikely to be a major problem. Decisions about temporary protection of den sites will be made by the agency managing the land where wolves are found, in consultation with the U.S. Fish and Wildlife Service. If denning sites are located near river systems used by floaters and boaters, or along major trail access, some type of use restriction during spring denning could be implemented.

If wolves were to concentrate in winter on ungulate winter ranges that are easily accessible to humans during the early recovery stages, restrictions might be implemented similar to currently implemented road closures for ungulate management. However, most ungulate winter ranges in the recovery area are not visited often by humans in winter. In no event would permanent restriction of access be likely due to wolf recovery efforts. Decisions concerning restrictions of logging and mining relative to wolf recovery will be made on a case-by-case basis within the framework of wolf management plans and agency land use planning. These restrictions are expected to be infrequent and temporary, possibly protecting den sites for a few months.

In addition, animal damage control techniques must be carefully considered if wolves are present. Because coyote control efforts may affect wolves, selective techniques such as aerial gunning rather than non-selective poison baits may be required if wolves are known to be in the area.

Comparison of Wolf Recovery Strategies

Alternative 1: Natural Dispersal from Existing Wolf Populations

Recovery through natural dispersal, unlike the other alternatives, does not depend on government action. If populations in Montana and southern Canada are allowed to increase, dispersers are likely to arrive in Idaho and form packs. This alternative might be slower in producing a substantial breeding population. However, once wolves form packs and breed in Idaho, recovery goals might be reached fairly quickly. In Montana, breeding wolves were first observed in 1986, and the recovery goal of 10 breeding pairs may be reached by 1997, but more likely by 2000 (Steve Fritts, personal communication, January 14, 1991).

When and where wolves will reestablish a breeding population in Idaho through natural dispersal is unpredictable. Wolf populations appear to be increasing in southern Alberta and British Columbia, and are recolonizing northwest Montana. Wolves are known to have recently occurred within twelve miles of the Idaho border in Montana. These wolves prey on white-tailed deer, which are abundant along the Kootenai River in northern Idaho and in adjacent tributaries in Idaho. Individual wolves may disperse into the Kootenai River drainage instead of the designated recovery area.

Wolves may have bred in Idaho, although there is no evidence that they have done so. They may breed in Idaho next year, or they may not breed in Idaho for another decade, or longer. However, if they return to Idaho through natural dispersal, they will be protected under the ESA. Killing a wolf is illegal under this alternative due to the Section 9 "taking" prohibition of the Act. However, the U.S. Fish and Wildlife Service plans to allow federal authorities to control problem wolves in Idaho, as they are doing in Montana, where wolves are also endangered.

The "no-jeopardy" standards of Section 7 are also applicable: any action funded, authorized, or carried out by a federal agency may proceed only after it has been determined that action will not jeopardize the continued existence of the wolf. In practice, this is likely to impose only minimal restrictions, as described in the previous section. Most land management agencies routinely consider the potential impact of a proposal on any listed species that might be present in the area (USFWS 1987).

Alternative 2: Reintroduction Through a Transplantation Program

A second alternative for restoring wolves in Idaho involves active human participation. Under this proposal wolves would be trapped, probably in Canada, and transplanted into suitable habitat in central Idaho. The Recovery Plan (USFWS 1987) includes the possibility of other strategies for recovering the species in Idaho if natural dispersal does not produce progress toward recovery by 1992. Progress is defined as two breeding pairs (USFWS 1987). Reintroduction, therefore, might be considered under the existing plan.

Reintroduction would allow the release of wolves into the central Idaho recovery area, in areas suitable for wolf recovery while natural dispersal could result in wolves elsewhere in the state. Notably, the wolves that have dispersed into northern Montana have tended to move west and north rather than moving south into the designated recovery area. However, wolves are highly mobile, so reintroduction does not guarantee that the released wolves will stay where they are put. Reintroduction might allow humans more control over the recovery process--wolves could be released into the recovery area and monitored with radio collars. This could potentially result in less livestock and wolf mortality than if wolves recover by natural dispersal.

If wolves were transplanted into central Idaho under the Secretary of the Interior's general power to conserve a listed species, the released animals would continue to be listed as an endangered species. As such, they would be protected by the full range of measures in the ESA. While it would be technically feasible to reintroduce wolves this way, such a program is highly unlikely. Opposition to wolf recovery among some groups has been strong enough to prevent any discussion of reintroducing wolves without also lessening their protection. The special "experimental population" provision in the ESA, which lessens the protection afforded the reintroduced species, would likely be used if reintroduction is chosen as the recovery method.

Experimental populations. The stringent protective measures that apply to an endangered species can discourage transplantation as a recovery method. Local interests

often fear that economic activity will be curtailed by the restrictions that accompany the presence of a listed species. In 1982, Congress responded to the "fears expressed by industry that such experimental populations would halt development projects," (H.R. Rep. No. 567 1982 at 17) by defining a new category of listed species--"experimental population"--and giving the Secretary greater flexibility in managing such populations.

An experimental population will generally be treated as a threatened rather than an endangered species, resulting in less stringent management measures. The change in status is significant since the Act's taking prohibitions do not automatically apply to threatened species, as they do to an endangered species. As Congress noted, treating an experimental population as a threatened species:

grants the Secretary broad flexibility in promulgating regulations to protect such species. These regulations can even allow the taking of threatened animals. . . . For example, the release of experimental populations of predators, such as red wolves, could allow for the taking of these animals if depredations occur or if the release of these populations will continue to be frustrated by public opposition (H.R. Rep. No. 567 1982 at 34).

Although the experimental population approach would allow greater flexibility in managing the gray wolf, it is unclear if this method can be used to restore the species in Idaho. One of the conditions for releasing an experimental population is that the introduced population is "wholly separate geographically from nonexperimental populations of the same species" (ESA § 10(j)(1)). Do unconfirmed sightings of lone wolves in Idaho qualify as nonexperimental populations? If the answer is yes, then the reintroduced population could not be classified as "experimental." However, if there must be breeding wolves in Idaho to be considered a population, then reintroducing an experimental population would be feasible under the ESA.

The question has not been resolved. The Recovery Plan (USFWS 1987) estimates that there are up to 15 wolves in Idaho. This estimate casts doubt about whether a reintroduced population could be considered wholly separate geographically from other wolf populations.

Alternative 3: Federal Legislative Action

Unlike the Secretary of the Interior, Congress is not restricted by the ESA. Congress could, if it chose, simply designate some portion of Idaho as an area containing a wolf population to be managed under any provisions it deems appropriate. In other words, just as Congress passed the ESA, it could pass a law regulating the management of wolves and this law could supersede the ESA in the case of the wolf. Congressional action concerning the sea otter provides an illustration of how this might be done.

Sea otters. In 1986, Congress provided for the reintroduction of a population of endangered California sea otters (Pub. L. No. 99-625 § 1). While the Act was "based on concepts found in the ESA," it was "a freestanding provision" that authorized the development of a plan for the relocation and management of an experimental population of

California sea otters (H.R. Rep. No. 124 1986 at 14). The Act establishes a two-zone system and specifies in some detail the management measures applicable in each zone. The otters were transplanted to a "translocation zone" on San Nicholas Island that is surrounded by a "management zone." Otters that stray into the management zone are to be recaptured and returned to the translocation zone. The Act explicitly acknowledges that this management strategy is intended "to prevent, to the maximum extent feasible, conflict with other fishery resources within the management zone" (Pub. L. No. 99-625, § 1(b)).

The sea otter legislation has some interesting parallels to the wolf situation. Fishery interests in southern California view the sea otter much as the western livestock industry views the wolf: as a rapacious destroyer of resources on which the industry depends. As a result, the fishing industry opposed otter reintroduction because of the potential impact on abalone and other shell fish. At the same time, however, the existing population of sea otters--which was listed as an endangered species--was extending its range to the south. The legislated plan gave the fishery interests relief from the expanding population from the north by drawing a line that became the otter's southern boundary. Conservation interests received a second population of otters by relocating some of the species to San Nicholas Island. The fishery interests were protected from the impact of the relocated population by restricting the area within which this new population would be allowed to expand.

Congress could adopt a similar approach for gray wolves in the northern Rocky Mountains. One such proposal for Congressional action was made in 1990.

The McClure bill. In May, 1990, Senator James McClure (R-Idaho) introduced a bill to reintroduce the gray wolf in the northern Rocky Mountain region. The bill was not enacted into law. The bill would have done four things. First, it defined a "Core Zone" in the Frank Church-River of No Return Wilderness and in the Salmon National Forest and required the Secretary of the Interior to transplant and maintain "three Alpha pairs of gray wolves" into this zone (Figure 2). Second, it defined a "Natural Recovery Area" in Montana within which the Secretary was "directed to permit natural recolonization of gray wolves." Third, the bill removed the gray wolf from the endangered and threatened species list in the states of Idaho, Montana, and Wyoming outside of the Idaho "Core Zone" and the Montana "Natural Recovery Area" and prohibited the Secretary from listing the species as endangered or threatened in these states in the future. Fourth, it required the Secretary to transplant three additional pairs of gray wolves into Yellowstone National Park (S. 2674 1990).

The McClure bill proposed a management plan for wolves quite different than the plan laid out by the U.S. Fish and Wildlife Service (1987) in its Recovery Plan. The McClure proposal defined "recovery" much more narrowly than does the U.S. Fish and Wildlife Service Recovery Plan--rather than 10 breeding pairs in each area, the McClure proposal provided for three breeding pairs in two of the areas (Idaho and Yellowstone) and an unspecified number in the other (Montana). Similarly, the McClure proposal provided a much more restricted recovery area of 2,600 square miles (6,734 km²). The Recovery Plan's central Idaho recovery area of more than 12,000 square miles (31,560 km²) includes not only the Frank Church-River of No Return Wilderness Area contained in the Senator's bill but also the Selway-Bitterroot, Gospel Hump and Sawtooth Wilderness Areas, the Mallard-

Larkin, Moose Buttes and Great Burn proposed wilderness areas, and adjacent lands. See Figure 2 for a comparison of the areas. Third, the McClure bill would have immediately removed the wolf from the protections accorded it under the ESA outside of the Idaho "Core Zone" and the Montana "Natural Recovery Area." Under the Senator's proposal, the wolf would have been managed exclusively by the states outside these protected areas. Fourth, the Senator's bill prohibited the Secretary from relisting wolves even if it developed that the Senator's proposal was insufficient to allow recovery even under the Senator's definition. This bill was an effort to legislate a solution to recover wolves and at the same time satisfy wolf opponents that they would be able to manage and control wolves wherever potential conflicts existed outside of designated park and wilderness recovery areas.

The Wolf Management Committee. Senator McClure's bill did not become law. Another 1990 bill passed in the House but failed in the Senate. It would have provided \$300,000 for an Environmental Impact Statement on reintroducing wolves to Yellowstone. After several legislative attempts, a House-Senate compromise was passed as an amendment to the Interior appropriations bill in the last days of the 101st Congress in October, 1990. This compromise established a ten-member committee to develop a wolf reintroduction and management plan for Yellowstone National Park and central Idaho. The committee was appointed by the Secretary of the Interior. The task of the committee and its membership is detailed in the following box.

The compromise does not provide specific instructions to the Wolf Management Committee. The plan could recommend any of the three alternatives, but the language of the compromise suggests reintroduction for both Yellowstone and central Idaho (see the box). If the committee recommends a legislated solution, Congress must then decide whether to act on it. The nature of any legislated solution that might pass in the future is, of course, unknown.

Language from the House-Senate Interior Appropriations Conference Report Creating the Wolf Management Committee (H.R. Rep. No. 971 1990).

Amendment No. 218: Deletes the Senate language preventing any expenditures for an EIS related to the re-introduction of wolves in and around Yellowstone NP. The managers agree that the Secretary shall, within 30 days of enactment, appoint a 10 member Wolf Management Committee. The Committee's task shall be to develop a wolf re-introduction and management plan for Yellowstone National Park and the Central Idaho Wilderness Area. The Committee shall consist of the following:

1. One representative from the Fish & Game Departments of each of the States of Idaho, Montana and Wyoming.
2. One representative from the National Park Service.
3. One representative from the U.S. Forest Service.
4. One representative from the U.S. Fish and Wildlife Service.
5. Two representatives from conservation organizations.
6. Two representatives from the livestock/hunting community.

The panel shall make available to the Secretary and the Congress by May 15, 1991 its completed plan along with its recommendations. The Committee's plan shall represent a consensus agreement of Committee members with at least six members supporting the plan.

Arguments For and Against the Alternative Strategies

The overriding question concerning wolf recovery in Idaho is, what efforts should be made to restore the wolf to central Idaho? How should the agencies responsible for wolf recovery in Idaho proceed? Each of the three alternatives described in the previous section--natural dispersal, reintroduction under the ESA, or federal legislative action--has arguments for and against it. These arguments are summarized in the three tables that follow. The information in these tables is a blend of the facts presented in this report and the opinions expressed by a variety of people. The tables include arguments made by a variety of interested parties, and some are speculative. By design, these tables are not intended to support any particular alternative for wolf recovery in Idaho. But the information should be useful to decision makers and the public concerned about wolf recovery in central Idaho as deliberations on this issue continue.

Alternative 1: Recolonization by Natural Dispersal from Existing Wolf Packs.	
Arguments <i>for</i> this strategy.	Arguments <i>against</i> this strategy.
Wolves are coming back on their own. They are repopulating Montana near the Idaho border, and it is only a matter of time until some wolves breed in Idaho. Reintroduction is unnecessary.	Wolves might not breed in Idaho for many years, if ever. Wolf sightings in Idaho have been reported for decades, yet no wolves are known to have started breeding in Idaho.
Wolves will recolonize on their own one pack at a time. This will be slower and easier to manage than reintroduction, which would require the release of a number of wolf pairs all within a short period.	Wolves may not recolonize in the designated central Idaho recovery area, but instead settle in other parts of the state, such as the northern Idaho Panhandle. They may cause more conflicts if they occur outside the recovery area.
Recolonization does not require modifying the ESA, the declared policy of the U.S. Congress, or getting wolves an "experimental population" designation in Idaho, the legality of which is open to interpretation.	This alternative provides "endangered" species protection, with strict ESA prohibition against "taking" anywhere except for "scientific purposes" or to "enhance the propagation or survival" of wolves.
Recolonization by natural dispersal is less expensive than reintroduction, a feature of the other two alternatives. It does not require major federal funding or action to succeed.	Wolves recolonizing by natural dispersal cannot be easily managed. It may be difficult to radio collar and monitor them until after they have created a problem and been trapped.
The official USFWS recovery plan recognizes this as the preferred alternative. This plan was developed by wolf experts and representatives of interest groups, and should be followed.	Wolves' "endangered" status gives them full protection <i>everywhere</i> in the state, not just in the designated recovery area.
Wolf management problems can be solved within the ESA, so an experimental population or legislative action is unnecessary. In Montana, where wolves are "endangered," a responsible control program is in place.	The legality of killing wolves under any circumstances when they are listed as "endangered," as in the Montana control program, is uncertain.
Wolves do not need much special management, except temporary protection around den sites and control of depredating wolves.	Because wolves are "endangered," roads anywhere near wolf activities might be closed to protect them.

Alternative 2: Reintroduction by Transplanting under the Endangered Species Act.	
Arguments <i>for</i> this strategy.	Arguments <i>against</i> this strategy.
Reintroduced wolves can be radio-collared and monitored, resulting in more responsive management and reduced conflict, and possibly more protection from illegal killing.	Reintroduction is an unnecessary expense because wolves seem to be returning on their own. They can be monitored and managed without being reintroduced, as is being done in Montana.
Wolves would be released only in the designated recovery area, so they would be more likely to stay in areas where they can live with minimal conflict with humans.	Wolves are highly mobile, and there is no guarantee they would stay where they were released, or even survive as a reintroduced population.
Reintroducing breeding pairs into central Idaho would result in quicker recovery, perhaps allowing de-listing to be possible sooner.	Reintroduction is a controversial action. Natural dispersal is more gradual, and may encounter less social and political resistance.
Reintroduction of an "experimental population" would ensure control of depredating wolves would be legal, increasing management flexibility and reducing opposition from livestock interests.	Control of an "endangered" wolf population is feasible without reintroduction. It is being done in Montana. Designation of an "experimental population" is therefore unnecessary.
The official USFWS plan recognizes that other recovery strategies, such as reintroduction, may be necessary if recolonization by natural dispersal is unsuccessful by 1992.	Reintroduction of an "experimental population" under the ESA requires geographic separation from other populations, which may not exist because reports of wolf sightings in Idaho continue.
No confirmed breeding populations of wolves exist in Idaho.	Better information is needed on the current status of wolf populations in Idaho.

Strategy 3: Federal Legislative Action.	
Arguments <i>for</i> this strategy.	Arguments <i>against</i> this strategy.
Legislative action is a compromise solution to a complex and divisive biological, social, economic, and political issue.	Legislative solutions may include compromises that are not biologically based. E.g., the recovery area proposed by Senator McClure's 1990 bill (essentially high mountains) may not be adequate to support a viable wolf population.
An Act of Congress could bring wolves back now. It may take years under the other alternatives.	Some people may not be ready for an instant wolf population. Gradual phase-in or delay may be preferable for social reasons.
Wolf/human conflicts require more flexible management than is allowed under the ESA. The USFWS recovery plan designates a large recovery area where wolves would be given protection at the expense of other uses.	In practice, ESA protection for wolves in Idaho should have little impact on land uses except to prohibit killing and temporarily protect den sites.
Giving wolves "endangered" status increases opposition to wolf recovery. People fear restrictions that accompany "endangered" status. An Act allowing more flexible management would reduce opposition.	A legislated solution bypasses the official ESA recovery plan procedure. The plan took years to put together and considered a variety of interests and biological information. The plan is working in Montana and may work in Idaho if given a chance.
Legislative action could turn management of the wolf over to the State of Idaho, because the State would be more responsive to Idaho citizen's concerns.	The role of the Idaho Department of Fish and Game in wolf recovery is limited by the Idaho Legislature. A federally legislated solution turning management over to the State might be difficult to execute under current State law.
Wolf control, an essential element of any wolf recovery plan, could be tailored to the needs of Idaho, instead of constrained by the requirements of the ESA, if legislative action were taken. Ranchers should not be prevented from protecting their stock.	The ESA is flexible enough to allow for effective control of depredating wolves. A wolf control program would be allowed in Idaho under the ESA, although government personnel, not ranchers, would administer it.
A precedent for dealing with controversial endangered species outside the ESA exists: Public Law No. 99-625 legislated a compromise reintroduction plan for the endangered California sea otter.	Legislative action would sidestep the ESA by creating an exception for wolves. The intent of the Act was to protect all species, and that intent should be upheld.

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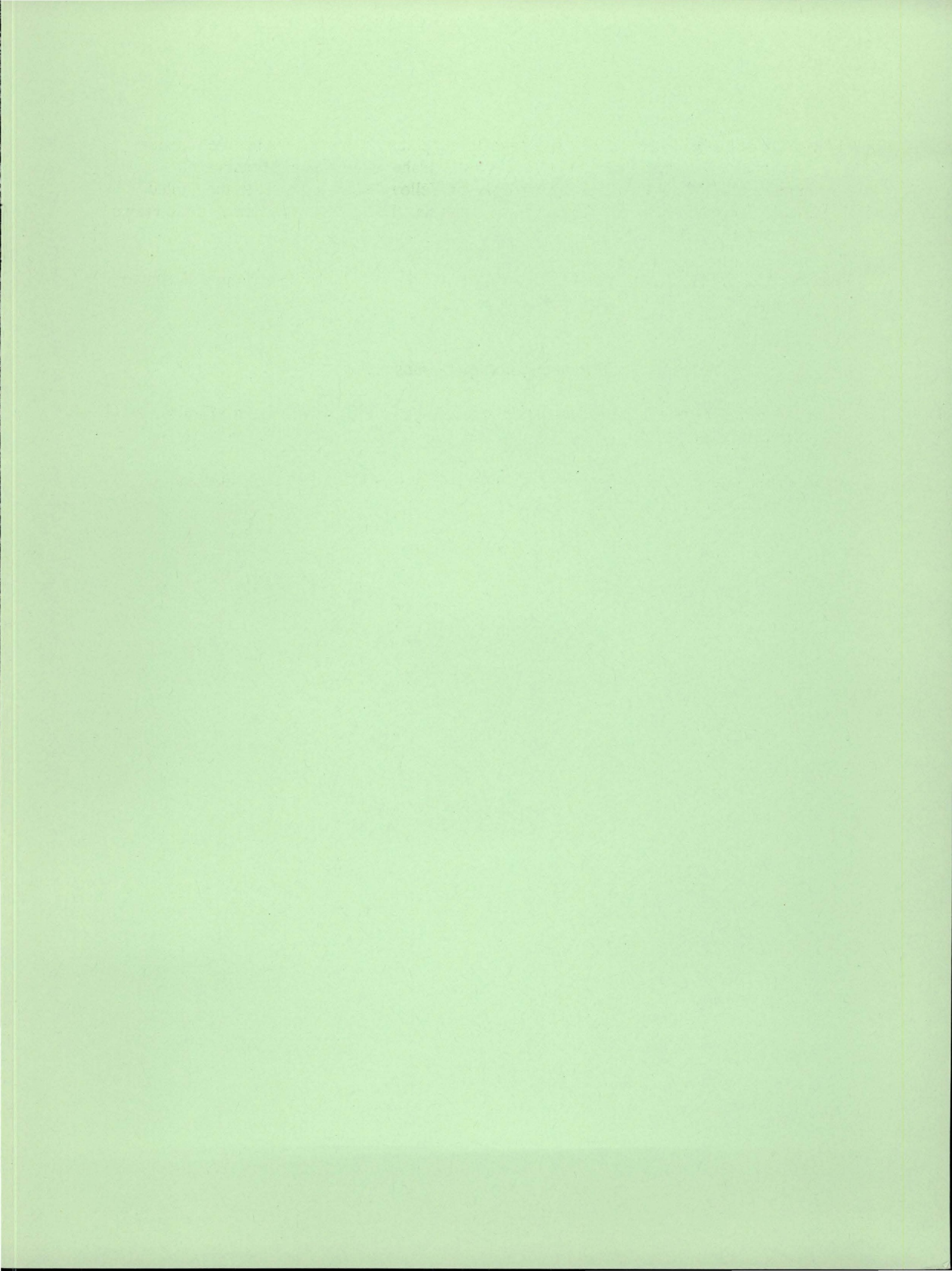
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