

# **IDAHO WOLF RECOVERY PROGRAM**

**Restoration and Management of Gray Wolves in Central Idaho**

**PROGRESS REPORT  
2002**

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## Restoration and Management of Gray Wolves in Central Idaho Progress Report 2002



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**Nez Perce Tribe Wildlife Program**

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*Cover photo: Wolf howling, East Fork of the Salmon River-Isaac Babcock*

## EXECUTIVE SUMMARY

The U.S. Fish and Wildlife Service (USFWS) is restoring endangered gray wolves to the northern Rocky Mountains including ongoing efforts in 3 restoration areas: Northwest Montana, the Greater Yellowstone Area, and Central Idaho. Gray wolves naturally recolonized northwest Montana and are listed as fully endangered under the Endangered Species Act (ESA). Nonessential experimental population areas were established for the Greater Yellowstone and Central Idaho Areas where wolves were actively reintroduced as nonessential experimental populations under the ESA. This special designation allows for management flexibility to address public concerns such as wolf-livestock conflicts.

At the end of 2002, the Central Idaho Experimental Population Area (CIEPA) was home to an estimated 284 wolves including 19 known wolf packs. Twelve of those produced litters, 9 of which met the recovery requirement for a breeding pair - an adult male and an adult female wolf that have successfully raised at least 2 pups to December 31 of their birth year. The population recovery goal for wolf restoration in the northern Rocky Mountains is to maintain 30 breeding pairs equitably distributed across the 3 restoration areas for 3 years. This population recovery goal for the Northern Rocky Mountain Recovery Region (NRMRR) was achieved at the end of 2002.

Wolves were well distributed across 22,759 square miles (58,945 square km) of central Idaho at the end of 2002. Territories of all known packs and pairs were completely or predominately within National Forest lands, 7 of which included federally designated wilderness areas.

Four new breeding pairs were documented in 2002 and a minimum of 52 wolf pups was produced. Estimated minimum average litter size was 4.3 pups per litter.

At least 2 radio-collared Idaho wolves were documented to have dispersed within and between the NRMRR during 2002. Undoubtedly, wolves without radio-collars have dispersed as well. The distances that wolves are capable of traveling lend credence to the notion that the NRMRR is a single, interconnected metapopulation.

Documented wolf mortalities during 2002 increased over the previous year, primarily as a result of increased agency lethal control of wolves. Of 21 wolf mortalities with known cause, 19 (91%) were human-related.

Capturing and radio-collaring wolves remained a priority. During 2002, 25 wolves were captured and fitted with radio-collars. Although wolves are captured and collared every year, the proportion of radio-collared individuals in the population decreases with expanding numbers of wolves, increasing the challenge of monitoring the activities, distribution, and status of the wolf population.

Fifteen known wolf groups overlapped active livestock grazing allotments in 2002. Confirmed and probable wolf-caused livestock losses during this period amounted to 17 cattle and 15 sheep. In addition, 1 guard dog and 1 hunting dog were confirmed killed by wolves, while 2 other hunting dogs were reported killed but not investigated. Three horses were reportedly harassed. As a result of agency control actions, 14 wolves were lethally controlled.

Continued conflicts between wolves and livestock and potential effects of wolves on big game populations remained key management issues challenging the Idaho Wolf Recovery Program (Recovery Program). In response, the Recovery Program continued participation in on-going research addressing these challenges. Scientific information collected through these efforts will foster a better understanding of wolf-livestock and wolf-big game relationships, and effective wolf conservation and management. Two graduate studies pertaining to Idaho's wolf population were completed in 2002.

Because numerical recovery goals have been met, the USFWS is expected to initiate a proposal to delist wolves from the protections of the ESA. Even with the prospect of delisting on the horizon, it is important that the Recovery Program maintains and enhances its working relationships with federal, state, and local governments; livestock associations; sportsmen's groups; and the environmental community. Ultimately, wolf recovery will be determined by Idahoans' willingness to allow wolves to remain a part of the state's diverse fauna.

## ACKNOWLEDGEMENTS

The U.S. Fish and Wildlife Service (USFWS) provided principal funding for the Idaho Wolf Recovery Program (Recovery Program). In addition, we gratefully recognize the Bureau of Indian Affairs, the Defenders of Wildlife, the National Wildlife Federation, the U.S. Forest Service, the Wolf Education and Research Center, and all of the many individuals who generously contributed financial support and in kind services.

Communication and cooperation between involved agencies, organizations, and individuals continue to make the Recovery Program a success. We thank the Nez Perce Tribal Executive Committee and Wildlife Program Director Keith Lawrence for their unwavering support, input, and policy guidance. Oversight and guidance provided by the USFWS was instrumental in consistent and fair application of the Final Rule governing recovery and management direction. We appreciate the support of USFWS personnel Robert Ruesink, Carter Niemeyer, Ed Bangs, Joe Fontaine, Tom Meier, and Mike Jimenez. The USFWS Law Enforcement division's efforts in investigating wolf mortalities remained a front-line deterrent to illegal take of wolves. Our thanks go to Senior Agent Craig Tabor, and Special Agents Rick Branzell, Scott Bragonier, Steve Magone, and Paul Weyland. The staff at the USFWS National Fish and Wildlife Forensics Laboratory assisted by conducting necropsies and analyzing blood samples. The USDA Wildlife Services (WS) continued to play an extremely important role in the Recovery Program in their proactive approach to resolving wolf-livestock conflicts. We thank Mark Collinge, George Graves, and Layne Bangerter of the Idaho State Office and Larry Handegard of the Montana State Office, District Supervisors, and all of the dedicated Wildlife Specialists that conduct investigations. Special mention goes to Rick Williamson, Wolf Specialist for WS Idaho, who has given much more than could be expected in his efforts to make wolf recovery workable for everyone involved. Also, Dave Thomas, WS, was instrumental in locating the Marble Mountain pack, and Stewart Breck, WS' National Wildlife Research Center, has gone to great lengths to seek non-lethal solutions in wolf-livestock conflicts. Doug Smith and Deb Guernsey, Yellowstone National Park, have given advice and exchanged information that has helped our efforts in Idaho. The U.S. Forest Service continues to generously provide housing, office support, information, forest access, and friendship. We especially would like to thank all of the staff at the many forest districts that have bent over backwards to help us in any way possible, including supplying valuable information on wolf sightings and coordinating field activities. Personnel from the Idaho Department of Fish and Game were helpful in numerous ways such as assisting with our field activities and sharing reports of wolf sightings – including the information that led to the discovery of a new breeding pair.

Nez Perce Tribal biologists; Kent Laudon, Jason Husseman, Adam Gall, and David Bell cannot be commended adequately for their dedication, devotion, and skill in service to the Recovery Program. Their willingness to endure the rigors and hardships of the field are central to the success of the Recovery Program. The Recovery Program benefited greatly from the significant contributions of time and effort by Nez Perce Tribal volunteers Isaac Babcock, Eric Burnham, Brady Couvillion, Jamie Craig, Denise Jantzer, Cherise Miller, Erin Simmons, and Harvey Zimmer. Thank you to Venus St. Martin and the Wildlife staff in Lapwai, and the sincerest thanks to Cheri Ramos of the Wolf Recovery Program for her tireless efforts over the years- we wish her the best in her new job.

We would like to thank Suzanne Stone, Laura Jones, and the Defenders of Wildlife's guardian program for their assistance in developing and applying non-lethal techniques to address wolf-livestock conflicts.

It has been a pleasure to work with pilots and staff of McCall Aviation, Stanley Air, and North Star Aviation. The demands of the work we ask of them and the responsibility for our safety are not unnoticed. Our sincerest thanks and best wishes to Bill and Judy Stewart- enjoy your retirement. Our winter capture operation went safely and smoothly due to the skills of Leroy Brown and Jack Fulton of Idaho Helicopter and Gary Brennan of Hawkins and Powers Aviation.

Dr. Clarence Binninger, Recovery Program veterinarian, has been a valuable and much-appreciated source of wisdom and expertise. We have also benefited from the advice of Drs. Mark Drew, State of Idaho Veterinarian, and Mark Johnson with Global Wildlife Resources, Inc. Special recognition is given to Jim and Holly Akenson, University of Idaho Taylor Ranch; Mitch Silvers, Wolf Education and Research Center; Ed Levine, Merlin Systems; Paul Houghtaling, Wilderness Awareness School; Carol Williamson; Bob and Judy Griswold; Eron and Fay Coiner, and Mike Popp, for the contributions they made.

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## INTRODUCTION

Prior to arrival of European man, wolves were widely distributed throughout the North American continent. As civilization took hold and spread westward, wolves were systematically eradicated from most of their range because they were perceived as destructive predators of livestock and ungulates. By the 1930s, of the conterminous states, only Minnesota retained a viable wolf population.

Beginning in the 1960s, negative perceptions of wolves eventually gave way to a more sympathetic and ecological view that considered wolves an important keystone species in natural ecosystems. This change in perception culminated in 1974, when wolves were listed as an endangered species in the continental United States under the Endangered Species Act of 1973 (ESA). The U.S. Fish and Wildlife Service (USFWS), which administers the ESA, completed a wolf recovery plan for the northern Rocky Mountains in 1987. Wolf proponents pushed for restoration in this area and in 1991 Congress authorized the preparation of an Environmental Impact Statement (EIS) to explore options for returning wolves to Yellowstone National Park and central Idaho. Support for wolf restoration was widespread nationally, and the Secretary of Interior approved the Final EIS in 1994. In 1995 and 1996, 66 wolves were captured in Alberta and British Columbia, Canada; 35 were released in central Idaho, and 31 were reintroduced into Yellowstone National Park.

The ultimate goal of the northern Rocky Mountain wolf restoration effort is to establish self-sustaining populations of gray wolves, remove the gray wolf from the protections of the ESA, and transfer wolf management authorities back to States and Tribes. The population recovery goal for the Northern Rocky Mountain Restoration Region (NRMRR) is to maintain 30 breeding pairs equitably distributed across the 3 restoration areas of northwest Montana, greater Yellowstone, and central Idaho for 3 years. The Final EIS designated nonessential experimental population areas for the Greater Yellowstone and Central Idaho Restoration Areas (Figure 1), in which all wolves (released and naturally occurring) were classified as nonessential experimental animals. The USFWS developed a Final Rule that governs how wolves are managed within the nonessential experimental population areas. This Rule allows for management flexibility to meet public concerns and minimize conflicts regarding the presence of wolves, including effects on wild ungulate populations and livestock.

The population recovery goal for gray wolves in the northern Rocky Mountains was met at the end of 2002. The USFWS will propose to remove the gray wolf from the protections of the ESA (delisting process) in the NRMRR when Montana, Wyoming, and Idaho have USFWS-approved state wolf management plans in place. Currently, Idaho has adopted their state wolf management plan, Montana is finalizing their plan, and Wyoming is developing their plan. The USFWS anticipates initiating the delisting process as soon as 2004.

In Idaho, the USFWS, the Nez Perce Tribe (Tribe), and USDA Wildlife Services (WS) comprise the Idaho Wolf Recovery Program (Recovery Program) sharing legal responsibility for recovering and managing wolves in Idaho. The Recovery Program has adopted a collaborative approach working closely with other government agencies and private entities to balance the biological needs of wolves with the social concerns of Idahoans. Wolves have recovered more

quickly in Idaho than projected. However, the ultimate success of the recovery program will hinge on social tolerance for wolves and public support for recovery and delisting. As the wolf population continues to make progress towards recovery, the true measure of success will be to effectively address social concerns surrounding wolf recovery and reduce wolf-human conflicts.

## **THE CENTRAL IDAHO RESTORATION AREA**

Central Idaho, vast, mountainous, and remote, is one of the largest remaining undeveloped blocks of public land in the conterminous United States. The Central Idaho Restoration Area covers all of central Idaho, and a small portion along the eastern slope of the Bitterroot Divide in Montana (Figure 1). The Central Idaho Restoration Area encompasses over 13 million acres (over 5.2 million ha) of contiguous National Forest lands administered by 10 different National Forests in Idaho and Montana. These include all or parts of the Bitterroot, Boise, Clearwater, Lolo, Nez Perce, Panhandle, Payette, Salmon, Challis, and Sawtooth National Forests. The core of the Central Idaho Restoration Area includes 3 contiguous Wilderness Areas, the Selway-Bitterroot, Frank Church-River of No Return, and Gospel Hump, encompassing almost 4 million acres (1.6 million ha).

Three major mountain chains and 2 large river systems create a very diverse landscape, ranging from sagebrush-covered flatlands in the southern part of the state, to extremely rugged peaks in the central and northern parts. A moisture gradient also influences the habitats of both wolves and their prey, with wetter maritime climates in the north, supporting western red cedar-western hemlock vegetation types, grading into continental climates of Douglas-fir and Ponderosa pine to the south. Elevations vary from 1,500 feet (457 m) to just over 12,000 feet (3,657). Annual precipitation varies from less than 8 inches (20 cm) at lower elevations to almost 100 inches (254 cm) at upper elevations.

Central Idaho is encompassed within a 10-county area and is sparsely populated, with an average population density of about 3 people per square mile (2.6 square km). Nearly 80% of the land base is public land. Primary land uses include grazing, logging, mining, and recreation. Over 380,000 cattle and 100,000 domestic sheep winter on approximately 3.4 million acres (1.3 million ha) of private land surrounding public lands. Over 80,000 cattle and 220,000 sheep summer on approximately 4.4 million acres (1.7 million ha) of public allotments distributed along the outer boundaries of the southern half of the Central Idaho Restoration Area.

## **STATUS OF IDAHO WOLVES**

The Idaho wolf population has continued to expand in both numbers and distribution since initial reintroductions (Figure 2). In 2002, 19 wolf packs were documented and the population was estimated to be around 284 wolves (Table 1). In addition, 9 different areas of suspected wolf activity in the Central Idaho Experimental Population Area (CIEPA) were identified. The successful recolonization of wolves in the state is due, in large degree, to the expansive contiguous block of mostly undeveloped public lands that make up central Idaho. The rate of

growth of the wolf population is expected to decrease over the next few years as it reaches social and biological carrying capacity. Although Idaho has sufficient habitat to accommodate several hundred wolves, the citizens of Idaho, not habitat, will ultimately determine the number of wolves that will persist in the state. The social carrying capacity for wolves will undoubtedly be far below the biological carrying capacity as wolves are managed in concert with other wildlife values, livestock concerns, and other management objectives. Over the past several years, the annual rate of population growth has decreased from around 60-70% between 1996 and 1998 to around 10% in 2002. A marked decline in pack size and reproduction of monitored wolf packs was observed during 2002. Although the causes for this decline are not known, likely reasons include human-caused mortality (primarily illegal take) and/or disease. Although the extent to which this trend is affecting additional documented and un-documented packs across the state is unknown, the observed pattern is of concern and could potentially affect the future trend in wolf numbers.

The NRMRR supported an estimated 663 wolves and 43 breeding pairs in 2002; achieving the population recovery goal of maintaining a minimum of 30 breeding pairs within the NRMRR for 3 years. The USFWS anticipates initiating the process to remove wolves in the northern Rocky Mountains from the protection of the ESA in 2003.

### ***Distribution***

**W**olves were well distributed throughout 22,759 square miles (58,945 square km) of the CIEPA (Figure 3). Occupied wolf range in the CIEPA is approximately bounded by Interstate Highway 90 to the north, Interstate Highway 15 on the east, State Highway 20 to the south, and State Highways 55 and 95 on the west. Territories of all established packs were predominately or wholly within National Forest public lands within the Central Idaho Restoration Area. Seven Idaho pack territories included or were entirely contained within federally designated Wilderness Areas.

### ***Reproduction***

**T**he reproductive status of 24 known packs and known or suspected pairs was investigated during 2002. Of those, 12 wolf packs produced 13 documented litters and 9 packs qualified as breeding pairs. A minimum of 52 wolf pups was documented in 2002; down from the minimum estimate of 82 pups produced in 2001 (Table 2). Reproduction for 1 of the 9 breeding pairs, the Como Lake pack in southwestern Montana, could not be verified by project personnel, but was included by the USFWS based on information from Montana Fish, Wildlife, and Parks. Minimum estimated number of pups produced per pack ranged from 2-11 pups. The Landmark pack produced 11 pups, the greatest number of wolf pups produced by a single Idaho pack within a year; however, the pups were from 2 different litters. Interestingly, this is only the second multiple wolf litter documented in Idaho. Wolf pup counts were conservative estimates because some pup mortality may have occurred before observation and some counts were incomplete.



Average minimum litter size for packs that produced litters was 4.3 pups per litter, which was below the overall average of 4.8 pups per litter estimated for the past 7 years.

Four new breeding pairs were documented in 2002; Buffalo Ridge, Como Lake, Five Lakes Butte, and Moyer Basin. Alpha wolves of the Buffalo Ridge pack were dispersers from the Stanley Basin and Moyer Basin packs. The USFWS, based on a report from a Montana Fish, Wildlife, and Parks biologist, confirmed the presence of at least 2 adults and 3 pups in the vicinity of Lake Como in southwestern Montana. Based on information received from the Idaho Department of Fish and Game, the Five Lakes Butte pack was observed in the territory of the former Snow Peak pack and may consist of remnant wolves remaining from that pack. Previous breeding pairs and most pack members of the Moyer Basin pack have died or dispersed. The Moyer Basin pack was revived this year with the formation of a new breeding pair including alpha male B97, a disperser from the Stanley Basin pack, and his mate thought to be an offspring of the Moyer Basin pack.

Eight packs that reproduced in 2001 apparently did not reproduce in 2002. Evidence suggested that the Chamberlain Basin pack revisited their traditional den site, but wolves left the area before biologists could obtain a pup count and additional efforts failed to document the presence of a litter. The Gold Fork pack localized in early spring, indicative of denning, and the alpha male demonstrated behavior associated with the presence of a litter, but extensive efforts throughout the rest of the summer and fall failed to indicate the presence of pups. Winter aerial observations confirmed lack of reproduction in this pack. It is not known whether this pack failed to produce pups or if pups died early in the spring before biologists had a chance to observe them. The Orphan pack did not exhibit denning behavior and traveled extensively throughout the spring and summer. Only 3 adult-sized wolves were observed in this pack in 2002. Thunder Mountain alpha female B22 died in early July from what appeared to be natural causes related to advanced age. She apparently was too old to produce pups this year, as this pack did not exhibit denning behavior. Two of the Twin Peaks pack's previous den sites were examined, but no evidence of wolf activity was found in those areas. The Whitehawk pack was lethally controlled in early April, shortly before the denning season. The alpha female of the Wildhorse pack died prior to the onset of breeding season, so it was likely they did not have a sexually mature female to assume reproductive status for 2002. The Wolf Fang pack traveled extensively throughout the spring and summer, even exploring areas not typically part of their territory, so it seems unlikely that pups were produced or survived.

## ***Mortality***

**T**wenty-eight documented or suspected wolf mortalities were recorded in 2002 (Table 3). The most common sources of 21 mortalities with known cause were human-related (91%) (lethal control [ $n = 14$ ], illegal take [ $n = 4$ ], and other human causes [ $n = 1$ ]). Two instances of natural deaths were observed; one likely due to the effects of old age (B22), and one from intraspecific strife (B118). The cause of death in 7 cases was unknown. Undoubtedly these figures are underestimates of the true amount of mortality occurring within the wolf population, as documenting mortalities of un-collared wolves is difficult. Also, mortality estimates do not include pups less than 4 months of age. The deaths of B48, suspected Marble Mountain alpha

male, and B46, Jureano Mountain alpha female, prevented their packs from achieving breeding pair status for 2002.

### ***Dispersal***

Two Idaho wolves were documented to have dispersed in 2002. Female wolf B107 dispersed from the Moyer Basin pack, and has apparently settled in the Sawtooth Valley. Male wolf B131, a disperser from the Wolf Fang pack, was observed with another wolf along the South Fork of the Payette River. Male B112 (Wildhorse pack) and female B99 (Selway pack) may also have dispersed. These animals have not been located for several months, indicating that they are no longer in their natal territories or that their radio-collars have failed.

Outcomes of other dispersal movements, initiated prior to 2002, were documented this year. Male B58, born into the Thunder Mountain pack in 1998, was re-trapped by WS and USFWS personnel in the Greybull River drainage southeast of Yellowstone National Park in Wyoming. This wolf was last located in Idaho in October of 2000 between Ketchum and Arco. Thunder Mountain dispersing male B71's radio signal was detected on mortality mode in the former Big Smoky pack's territory in March. Whether his dispersal was ongoing at the time of his death cannot be determined. Male B110 was located near the mouth of the South Fork of the Salmon River. He was captured as a member of the Moyer Basin pack in 2001. He may still be searching for a territory.

It is extremely difficult to document dispersal, as most dispersing wolves rapidly depart their natal territories, often moving extensive distances. Radio contact can be lost for extended periods of time before signals are rediscovered, if at all. Very seldom has the Recovery Program been able to follow a dispersing wolf while it searches for a mate and new territory. The number of dispersals recorded is an underestimate of true dispersal, as the Recovery Program can monitor only those wolves with radio-collars.

## **WOLF MANAGEMENT**

### ***Capture and Radio-collaring***

Twenty-five wolves were captured in 2002; 22 were processed for the first time and 3 were recaptured (Table 4). Helicopter darting was conducted in mid-January, resulting in 16 captures from 4 packs. Ground trapping occurred throughout the summer and yielded 9 wolves from 7 wolf groups. At the end of 2002, the Recovery Program was monitoring 32 radio-collared wolves with known whereabouts and searching for 10 missing wolves. An additional six were not transmitting due to non-functioning radio-collars.

### ***Livestock Depredation***

**R**esolving wolf-livestock conflict is one of the defining social challenges of wolf recovery. Livestock depredation by wolves is a paramount concern of livestock producers in Idaho. Livestock losses to wolves can have negative economic impacts to individual livestock producers. Wolf depredations often occur in the same geographic areas involving the same livestock producers year after year in chronic problem areas. The Final Rule, which governs the management of nonessential experimental wolves in Idaho, allows agency control of wolves to resolve wolf-livestock conflicts. Under the Final Rule wolves may be harassed, relocated, or lethally controlled in response to confirmed depredations on livestock. In addition, Defenders of Wildlife, a national conservation organization, provides monetary compensation to livestock producers for verified losses to wolves. Wolf control and compensation for losses has generated tolerance and patience among livestock producers. However, despite agency control and compensation, livestock depredations and resulting control of wolves remain highly emotional and politically charged. Developing long-term solutions to resolve wolf-livestock conflicts is key to the success of the Recovery Program and timely delisting of wolves.

Detecting wolf-caused livestock losses remains a concern as some livestock carcasses may not be found in remote areas, carcasses can decompose in a short period of time during hot weather, and wolves can consume entire carcasses – leaving little evidence behind. The Recovery Program initiated a research project to address this concern (see Research). The study was conducted on a remote, forested public grazing allotment representing a worst-case scenario for detecting livestock killed by wolves. Study findings indicated low calf mortality with overall survival rates of 95%. About one third (31%) of all cattle mortality on the allotment was due to wolf depredation. Wolf-caused losses were highest for producers grazing cattle in close proximity to wolf denning and pup rearing areas. In addition, it was estimated that for every wolf-killed livestock carcass found, an additional 3-8 wolf-killed livestock carcasses, depending on search effort, were not detected in these conditions. This research shows that in remote, densely forested public allotments, detecting wolf depredation can be problematic. Fortunately, there are currently only a handful of livestock producers suffering chronic losses that are difficult to detect. In most cases, accounting for wolf-killed livestock is not as problematic, particularly in more open country that allows for increased herding and monitoring of livestock, for most sheep operations, and when grazing on private property.

Six groups of wolves (packs or individuals) were implicated in confirmed and/or probable depredations during 2002; Gold Fork, Jureano Mountain, Whitehawk, B100, B133, and B107. Confirmed wolf depredations on livestock included 10 domestic calves and 15 domestic sheep, and an additional 7 domestic calves were classified as probable wolf kills. Wolf packs and pairs that used areas in common with livestock but were not implicated in confirmed and/or probable depredations were Buffalo Ridge, Landmark, Moyer Basin, Orphan, Scott Mountain, Wildhorse, B45, B103, and B105.

Fortunately, the level of wolf-livestock conflicts has remained manageable in Idaho as annual numbers of livestock lost and livestock producers affected has remained fairly constant at relatively low levels for the past several years (Figure 4). Although loss of livestock to wolves can have negative economic impacts to individual producers, wolf depredation remains a relatively minor cause of livestock loss across the state. Since 1999, confirmed and probable livestock losses to wolves average 18 cattle and 45 sheep per year, affecting an average of 13

producers per year. Documented livestock losses to wolves account for about 1-2% of reported predator losses for cattle and sheep in Idaho. Wolf-livestock conflicts can be addressed by implementing effective wolf management strategies that are responsive and mitigate the economic impacts to producers, focus on individual producers suffering losses in chronic problem areas, are proactive in deterring wolf-livestock conflicts, and work closely with affected rural communities and local governments in affected areas.

During 2002, 14 wolves were killed as a result of agency control in response to conflicts with livestock (Figure 4). All 10 members of the Whitehawk pack, alpha female B46 and 1 un-collared wolf from the Jureano Mountain pack, and 2 un-collared wolves associated with B133 were shot by WS and USFWS personnel after repeated depredations. Three Jureano Mountain pack wolves were trapped, radio-collared, and released on site.

Current levels of wolf mortality associated with agency control are not anticipated to adversely affect the Idaho wolf population. Exploited wolf populations are capable of sustaining an overall mortality rate, from all causes, of 30% without jeopardizing population viability. The 14 wolves lethally removed during agency control actions in 2002 account for 5% of the estimated wolf population. Although the total number of wolves lost to other mortality causes is not known, the overall mortality rate for Idaho wolves is estimated to be 10-20% of the total population.

### ***Livestock Conflict Resolution***

**W**ildlife Services, under a special use permit with the USFWS, holds the primary responsibility to investigate and verify reported wolf depredation, and implement wolf control actions.

The Tribe, USFWS, and WS worked cooperatively with livestock producers to minimize losses. Wolf control strategies in response to confirmed livestock depredations are addressed on a case-by-case basis. Control strategies varied widely, ranging from non-injurious harassment to lethal removal. Implementation of control actions emphasized minimizing livestock losses while promoting wolf recovery.

Wildlife Services deployed non-lethal wolf deterrents, including radio-activated guard (RAG) boxes and fladry, in 4 chronic problem areas. RAG boxes were used intensively in the East Fork of the Salmon River drainage on private property beginning in January to prevent the Whitehawk pack from frequenting privately owned livestock calving pastures. The units seemed to effectively deter wolves for approximately 3 months. But failure of the units due to complications from steep terrain and habituation by the wolves to the frightening noises resulted in a series of depredations (see Research). Fladry was also used, near Salmon and Stanley, Idaho, to inhibit wolf depredations (see Research). RAG boxes and fladry appeared to be most beneficial for short periods of time (months) in confined pastures (40-80 acres).

Other proactive measures to minimize wolf-livestock conflicts included hazing wolves, using less-than-lethal rubber bullets, using additional guard dogs, fencing livestock, employing additional range riders, purchasing hay or alternate pastures to separate wolves and livestock, modifying grazing patterns, and coordinating volunteers to help haze wolves away from

livestock. Used in sequence or combination, these non-lethal methods may prove useful around calving and lambing pastures providing time for young calves and lambs to grow large enough to be less vulnerable to wolf depredations. The Recovery Program will continue to seek effective non-lethal means of avoiding wolf-livestock conflicts.

The Defenders of Wildlife, a private conservation organization, established and administers a wolf compensation trust, to reimburse ranchers for verified losses to wolves. This program has promoted tolerance for wolf recovery. Defenders of Wildlife has also worked cooperatively with the Recovery Program and provided financial assistance for resolving wolf-livestock conflicts.

### ***Litigation***

**C**ase: The United States District Court for the District of Idaho. Western Watersheds Project and Idaho Conservation League vs. Sawtooth National Forest, Bill Levere, Sawtooth National Forest Supervisor, and United States Forest Service [Forest Service], Case No. CIV 01-389-E-BLW.

This case was initiated in summer of 2002 and revolves around the establishing legislation for the Sawtooth National Recreation Area (SNRA). According to the plaintiffs, that legislation suggests preferential use by wildlife in the SNRA. The SNRA has been historically used for livestock grazing under federal grazing permits. Since the USFWS reintroduction effort in 1995, the wolf population in Idaho expanded. At least 5 wolf packs and additional lone wolves have used parts of the SNRA in the past. In the summer of 2001, the Whitehawk pack was the primary resident wolf pack within the SNRA. Because of chronic livestock depredations by this pack on private land adjacent to the SNRA and within it, agency wolf control ultimately resulted in the removal of the entire 10 members of the Whitehawk pack. Environmental groups filed suit and the Judges' preliminary ruling directed the Forest Service to give preference to wildlife but also to balance wildlife values with permitted livestock grazing. The Court ruled that the Forest Service needed to do a more thorough environmental assessment of the conflict between livestock grazing and predators, primarily wolves, in the SNRA.

The Court further issued an injunction on the USFWS that prohibited lethal control of wolves that depredated on livestock within the SNRA during 2002. The Service requested the Judge reconsider that position since the Service was not part of the original litigation and that control of wolves that attack livestock is a necessary part of wolf restoration in the northern Rocky Mountains of Montana, Idaho, and Wyoming. The USFWS and the Department of Interior worked with the Department of Justice and filed a motion against being enjoined from implementing the wolf reintroduction rules, including lethal control. This motion was denied. The USFWS stands ready to continue efforts to minimize livestock depredations using other non-lethal methods in the SNRA, but lethal control of problem wolves within the SNRA is currently prohibited by court order.

## **RESEARCH**

Continued conflicts between wolves and livestock and potential effects of wolves on big game populations remained key management concerns. The Recovery Program's ongoing participation in research aimed at addressing these issues will enable wolf management decisions to be made with the latest scientific information available.

Five wolf research projects have been initiated since 1999. Two addressed predator-ungulate relationships and the others dealt with wolf-livestock interactions. Two studies, which resulted in the publication of Master's of Science theses, were completed in 2002.

#### Effects of Wolves on Livestock Calf Survival and Movements in Central Idaho.

Investigators: John K. Oakleaf (University of Idaho), Curt Mack (Nez Perce Tribe), Dennis L. Murray (University of Idaho).

Cooperators: U.S. Fish and Wildlife Service, Salmon-Challis National Forest, Lemhi County Cattle Association, Diamond Moose Association, Lemhi County, Wildlife Services, Defenders of Wildlife, Wolf Education and Research Center, National Wildlife Federation, Idaho Cattle Association.

Citation: Oakleaf, J. K. 2002. Wolf-cattle interactions and habitat selection by recolonizing wolves in the northwestern United States. M.S. Thesis. University of Idaho, Moscow. 67pp.

We examined interactions between wolves and domestic calves within a grazing allotment in central Idaho to evaluate the role of wolves on calf survival and movements. During the 1999 and 2000 grazing seasons we radio-marked 231 calves per year, representing 33% of the calf population, on the Diamond Moose Association (DMA) grazing allotment, and monitored their survival and movements relative to wolf distribution. Overall, calf survival was high (95%), with relatively few mortalities ( $n = 13$ ) among the marked population. Of the 13 calf mortalities, 8 were unrelated to predation (pneumonia, unknown natural causes, and fire), 4 were wolf predation, and 1 was coyote predation. Calves selected by wolves were younger than the surviving cohort by an average of 24 days (wolf-killed: March  $31 \pm 13$  days,  $n = 4$  [mean birth date  $\pm$  SE]; live population: March  $7 \pm 1.6$  days,  $n = 207$ ) ( $P < 0.05$ ). Calf movement patterns and group size did not vary relative to the level of spatial overlap with wolves. However, vulnerability to predation appeared to be correlated with spatial proximity of calves to wolf home ranges and rendezvous sites. These results suggest that in our study area the overall impact of wolves was not a significant effect on either calf survival or behavior.

#### Habitat Selection by Recolonizing Wolves in the Northwestern United States.

Investigators: John K. Oakleaf, Dennis L. Murray (Department of Fish and Wildlife Resources, University of Idaho), Edward E. Bangs, Joseph A. Fontaine, Michael D. Jimenez, Thomas J. Meier, Carter C. Niemeyer (U.S. Fish and Wildlife Service), Douglas W. Smith (Yellowstone

National Park), Curt M. Mack (Nez Perce Tribe) and James R. Oakleaf (University of Wyoming).

Citation: Oakleaf, J. K. 2002. Wolf-cattle interactions and habitat selection by recolonizing wolves in the northwestern United States. M.S. Thesis. University of Idaho, Moscow. 67pp.

Gray wolf populations have persisted and expanded in the northern Rocky Mountains since 1986, while reintroduction efforts in Idaho and Yellowstone have further bolstered the population. However, rigorous analysis of either the availability of wolf habitat in the region, or the specific habitat requirements of local wolves, has yet to be conducted. We examined wolf-habitat relationships in the western U.S. by relating landscape/habitat features found within wolf pack home ranges ( $n = 56$ ) to those found in adjacent non-occupied areas. Logistic regression of occupied versus unoccupied areas revealed that a higher degree of forest cover, lower human population density, higher elk density, and lower sheep density were the primary factors related to wolf occupation. Further, our analysis indicated that relatively large tracts of suitable habitat remain unoccupied, suggesting that wolf populations likely will continue to increase in the region. Analysis of the habitat linkage between the 3 main wolf sub-populations indicates that populations in central Idaho and northwest Montana have higher connectivity, and thus greater potential for exchange of individuals, than does either subpopulation to the Greater Yellowstone Area subpopulation. Thus, for the northern Rocky Mountains to function as a metapopulation for wolves and other carnivores (e.g. lynx, wolverine, and grizzly bears), it will be necessary that dispersal corridors to the Yellowstone ecosystem be established and conserved.

#### Winter Predation and Interactions of Wolves and Cougars on Panther Creek in Central Idaho.

Investigators: Dennis Murray and Jason Husseman, University of Idaho; Gary Power, Lemhi County; and Dick Wenger, U. S. Forest Service.

Cooperators: Nez Perce Tribe, Salmon-Challis National Forest, U.S. Fish and Wildlife Service, Bureau of Land Management, Rocky Mountain Elk Foundation, Wolf Education and Research Center, Hornocker Wildlife Institute, Idaho Department of Fish and Game, Lemhi County.

Citation: Husseman, J. S. 2002. Prey selection patterns of wolves and cougars in east-central Idaho. M.S. Thesis. University of Idaho, Moscow. 76pp.

This 3-year study was initiated to investigate wolf-cougar interactions and predation on wintering ungulate populations within GMU 28 west of Salmon, Idaho. Two groups of wolves, the Jureano Mountain and Moyer Basin packs, had established territories within the study area. In addition, a minimum of 4-6 cougars were radio-tracked over the course of the study.

We documented prey characteristics and kill site attributes of predator kills during winters 1999-2001 in Idaho, and located 120 wolf-killed and 98 cougar-killed ungulates on our study site. Elk were the primary prey for both predators (wolf = 77%; cougar = 74%), followed by mule deer (wolf = 23%; cougar = 24%). Both predators preyed disproportionately on elk calves (wolf = 60%; cougar = 53%) and old individuals; among mule deer, wolves appeared to select for fawns

(65%), whereas cougars killed primarily adult deer (76%). Nutritional status of prey, as determined by percent femur marrow fat, was consistently poorer in wolf-killed prey, with a greater proportion of wolf-killed prey exhibiting fat levels indicating severe malnutrition.

We found that wolf kills occurred in habitat that was more reflective of the entire study area than cougar kills, suggesting that the coursing hunting behavior of wolves likely operated on a larger spatial scale than did the ambush hunting strategy of cougars. We concluded that the disparity in prey selection and hunting habitat between predators probably was a function of predator-specific hunting behavior and capture success, where the longer prey chases and lower capture success of wolf packs mandated a stronger selection for disadvantaged prey. For cougars, prey selection seemed to be limited primarily by prey size, which could be a function of the solitary hunting behavior of this species and the risks associated with capturing prime-aged prey.

#### Winter Predation and Interactions of Cougars and Wolves in the Central Idaho Wilderness.

Investigators: Holly Akenson, James Akenson, Howard Quigley.

Cooperators: University of Idaho, Hornocker Wildlife Institute – Wildlife Conservation Society, DeVlieg Foundation, Nez Perce Tribe, Idaho Department of Fish and Game.

The winter of 2002 was the fourth field season tracking wolves, primarily the Chamberlain Basin pack, and cougars in the Idaho wilderness. This research project was initiated in 1998 following the reintroduction of wolves to Idaho in 1995. We are evaluating the effects of wolf and cougar predation on wintering elk, mule deer, bighorn sheep, and moose populations and investigating the interspecific interactions and competition between cougars and wolves.

Since 1999 we have examined 183 large mammal carcasses. Twice as many carcasses were found of animals killed by cougars as those killed by wolves. An extensive forest fire burned most of the winter range in 2000 and contributed to changes in animal numbers and distribution on the Big Creek winter range. A helicopter elk census in 2001 confirmed that elk numbers have declined 30% during the last 6 years, although observations of mule deer suggest that deer numbers are stable or increasing. Cougar and wolf winter diets were similar. Neither predator showed a strong diet preference between elk and mule deer. Being coursing predators, wolves killed more elk in poor condition than did cougars, which hunt by stalking and ambushing prey. The large home range of the wolf pack allowed the wolves to follow the elk when they migrated to a new unburned ungulate winter range the first winter after the wildfire. The cougar response to post-fire changes in elk numbers and prey health was to remain in their smaller home ranges and diversify their diets. Cougars even killed 3 moose that were starving after the fire burned up the riparian shrubs; moose are usually not vulnerable to cougar predation due to their large size. Elk calves and deer fawns were more vulnerable to wolf predation than cougar predation.

The cougar population experienced a high rate of replacement for resident cats due to mortality. The main causes of cougar mortality were hunter harvest, fighting between males, wildfire, and starvation. Strife among carnivores was documented on several occasions. Cougars killed 3 cougars, 3 coyotes, and 2 bobcats, while wolves killed 2 coyotes. Cougars appeared to avoid wolves and their kills. Cougar kitten production has been low. In the 2 winters since the forest fire no kitten production was documented. Track surveys and carcass locations suggest there are



several areas previously used by female cougars that are now unoccupied. During winter the Chamberlain Basin wolf pack was comprised of 8-12 wolves. The wolf pack hunted in 2 ungulate winter ranges. Last winter was the first in which more kills were found on the Big Creek winter range made by wolves than cougars.

These large carnivores indirectly influence animal and plant populations and communities at lower trophic levels. For example, cougars and wolves repeatedly killed coyotes and bobcats during this study. These midsize carnivores strongly targeted fawns as a food source. If the large carnivores suppress the midsize carnivore populations, predation pressure could shift from deer fawns toward elk calves. In contrast, where female cougar home range areas have been unoccupied following the fire, coyote activity and predation on fawns has increased.

#### Preliminary Assessment of Radio Activated Guard Units in Deterring Wolf Predation in the East Fork of the Salmon River of Central Idaho.

Investigators: Stewart Breck, National Wildlife Research Center; Rick Williamson, Wildlife Services.

Cooperators: Nez Perce Tribe, U.S. Fish and Wildlife Service, and the affected private landowners.

From January 2001 to April 2002, Wildlife Service (WS) specialists and researchers tested the effectiveness of Radio Activated Guard (RAG) units for deterring livestock depredation by the Whitehawk wolf pack. In early February of 2001 the Whitehawk pack moved into the East Fork of the Salmon River and killed a calf. A WS specialist in Idaho, in conjunction with researchers at National Wildlife Research Center, placed RAG boxes and monitors in small pastures of privately owned property to deter wolves from killing more cattle and to test the effectiveness of RAG boxes.

Activation of the device, utilizing signals from radio-collars, triggered a strobe light and loud sound effects from a tape player. By adjusting the gain and volume, the sensitivity of the receiver was fine-tuned so that it fired only when individuals entered the area to be protected. The radius of protection varied from 66 feet (20 meters), which may keep wolves out of dead animal pits or other small areas, to 984 feet (300 meters), which could be effective for protecting small pastures. In order to reduce habituation to the device, 30 different recorded sounds were used, and each time it triggered a different sound was played. Within each base station a small electronic monitor was installed to record radio-collar frequency, date and time that wolves activated a RAG box, and the number of pulses received during a predetermined time interval. Monitors were used to evaluate the performance of the RAG boxes and detect behavioral responses of wolves to the scare device.

The Whitehawk pack activated the scare devices approximately 10-15 times from mid-February to mid-April of 2001. No calves were killed in pastures protected by RAG boxes and there was no indication that wolves were habituating to the boxes. However, on March 19, 2001, a calf was killed by the pack in a pasture where a RAG box was present but malfunctioned, i.e. did not activate when the wolves came into the field.

RAG boxes were used again during late winter/spring of 2002 with the same pack in the same area of the East Fork of the Salmon River. Eight to 9 RAG boxes were used from February to early April. Initially it appeared the RAG boxes were helping keep wolves away from livestock but in late March of 2002 the pack habituated to the devices and began killing livestock despite the presence of RAG boxes. Data from the monitors clearly indicated that these wolves had habituated to the devices. Generalizations about the amount of time it took wolves to habituate to RAG boxes should not be made until further monitoring has been conducted. However, it does appear that RAG boxes offer short-term (2-3 months) protection and significant advantage over other scare devices that fire randomly or at fixed intervals.

#### Preliminary Assessment of Fladry as a Deterrent to Wolf Depredations in Central Idaho.

Investigators: Stewart Breck, National Wildlife Research Center; Rick Williamson, Wildlife Services.

Cooperators: Nez Perce Tribe, U.S. Fish and Wildlife Service, U.S. Forest Service, Defenders of Wildlife, private landowner.

Fladry, a non-lethal livestock protection technique, was tried for the first time in Idaho in 2002 at 2 sites. Borrowed from Polish wolf hunters, fladry involved encircling the wolves with a barrier of colored flags, evenly spaced, hung from ropes. For unknown reasons, wolves do not willingly cross this "fence," so it was hoped that by surrounding a given area the wolves would be unable to gain access to livestock. WS and Defenders of Wildlife, with the cooperation of the owner of an inholding in the Salmon National Forest, strung approximately 9 miles of fladry entirely around the fenced 1,000-acre (400-hectare) ranch. Approximately 400 cattle grazed here from late May through mid-October. After the Jureano Mountain pack, which denned on the privately owned parcel, moved to a rendezvous site off of the ranch, fladry was installed. It was also used for approximately 1 month during September in the Sawtooth Valley following a depredation there.

The goal of this project was to monitor wolf activity on and off the ranch using 2 different techniques. The first monitoring technique used a receiver and a data logger that collected and stored information when it received a signal from a radio-collared wolf. Data included the radio-collar frequency, date and time, and duration a signal was received. The second monitoring method used tracking plots to detect wolf presence. Such plots have been used successfully with numerous carnivore species to ascertain activity levels.

Fladry was set on the existing barbed wire fence that surrounded the ranch. The entire perimeter of the ranch was examined every 48 hours to maintain the flagging barrier. The number of days wolves were located in proximity to the ranch, within 1.9 miles (3 km), and number of days fladry was set before wolves crossed was recorded. Wolves were monitored from the ground and air in an attempt to obtain 1 location per day. The pack comprised approximately 8 members, 4 were radio-collared when the study began and 2 more were equipped during the course of work.

Members of the Jureano Mountain pack crossed fladry barriers after 61 days. The effectiveness of fladry for protecting large areas is not well understood, though results from this study indicated that it may be useful for periods up to 60 days. During the trial some flags either got wrapped around the barbed wire or were pulled off by cattle. Thus, fladry required persistent maintenance along the perimeter. While this pack was excluded from the ranch they depredated on free-ranging livestock on an adjacent public grazing allotment.

## **IDAHO WOLF PACKS**

### ***Big Hole***

Three radio-collared wolves (B7- alpha male, B11- alpha female, and B62), a minimum of 5 un-collared wolves, and a radio-collared wolf of unknown origin make up this pack. Traditionally they have occupied a territory along the Bitterroot Divide south of Lolo Pass, but have spent more time this year north of Highway 12. A litter of at least 3 pups was observed during the summer of 2002, making them a breeding pair for the 4th time since 1998; no pups were documented in 2000.

### ***Buffalo Ridge***

This first-year pack was founded by B93, a disperser from the Moyer Basin pack, and B95, a disperser from the Stanley Basin pack. They produced a litter of 7 pups in 2002. Since formation of this pair in the fall/winter of 2001 they have used an area bounded by the Yankee Fork to the north and northwest, the Bayhorse Creek drainage on the east, and the Salmon River to the south. The Buffalo Ridge pack qualified as a breeding pair for 2002.

### ***Chamberlain Basin***

Although evidence suggests this pack was still intact, no functioning radio-collars remained in this pack. Lack of radio-collars hampered efforts to monitor and document the reproductive status of these wolves. Radio contact was lost with the alpha pair, B9 and B16, last year. Inspection of their traditional den site this spring indicated that it had been used again in 2002, but wolves had abandoned the den area early, before biologists were able to access this country. An attempt was made later in the summer to locate, document reproduction, and capture and radio-collar members of the pack. Pack status and pup production could not be documented. The Chamberlain Basin pack did not qualify as a breeding pair for 2002.

### ***Como Lake***

**A** Montana Fish, Wildlife, and Parks biologist reported seeing several wolves, including 3 pups, in the Rock Creek drainage in the Bitterroot Valley of southwestern Montana. Recovery Program personnel investigated the area, did not observe or hear wolves, but did observe old pup-sized tracks. Based on the reported observation, this un-collared pack was considered a breeding pair by the USFWS. Efforts will be made in 2003 to confirm status, and radio-collar members of this pack.

### ***Five Lakes Butte***

**I**n late August personnel from the Idaho Department of Fish and Game reported a sighting of 7-8 wolves in the vicinity of the Five Lakes Butte area of northern Idaho. Recovery Program biologists observed 2 adults and 2 pups there in mid-September. These wolves may be remnants of the Snow Peak pack, as this location was within that pack's former territory. The Snow Peak pack has not been monitored since 2000 when R-132, a disperser from Yellowstone that joined that pack, died. No radio-collared wolves were known to be present in this group; so future monitoring will be difficult. Efforts will be made in 2003 to re-locate and radio-collar members of the Five Lakes Butte pack.

### ***Gold Fork***

**B**ecause of past conflicts with livestock, the Recovery Program hoped to monitor as many members of this pack as possible. Helicopter darting in January of 2002 added 2 additional radio-collared wolves (B129 and B130) to the two (B116 and B117) that had been trapped in summer of 2001. In March, B116 dropped its radio-collar and in July pack mates chewed B129's radio-collar off. Because the wolves localized in the spring and B117, the suspected alpha male, exhibited behavior associated with the presence of pups, it was suspected that the alpha female had denned. Repeated attempts throughout the summer and fall to document pups were unsuccessful. Winter aerial observations confirmed there were no pups present at that time. A producer grazing livestock within this pack's territory discovered several domestic calf carcasses, but WS was unable to positively determine that wolves had made the kills, so no management actions were taken. This pack ranged from Jughandle Mountain to Scott Valley. The Gold Fork pack was not considered a breeding pair for 2002.

### ***Gospel Hump***

**A**lpha female B50's radio-collar expired during the spring denning season. As she was the only radio-collared member of the pack, monitoring and documenting reproductive status was difficult. Biologists visited the 2001 den site and were able to verify a new litter by identifying pup howls. During the course of the summer, after the pack had vacated the den site, Project Biologists visited rendezvous sites used by this pack in 2001 in an attempt to count pups and radio-collar pack members. Pups were heard again near one of those rendezvous sites, but before a concerted trapping effort could begin the wolves moved once more. In August and

September U.S. Forest Service personnel reported several sightings in a new area used by this pack that led to the capture and radio-collaring of 2 pups. Observations immediately after the capture of these wolves enabled biologists to determine the presence of at least 3 pups and 11 wolves in all, including a radio-collared individual, presumed to be B50. Their territory encompasses the region from Elk City, Idaho to the Salmon River Breaks. The Gospel Hump pack was counted as a breeding pair for 2002.

### ***Jureano Mountain***

As in previous years, the Jureano Mountain pack continued to be a concern because of potential conflicts with livestock during the 2002 grazing season. Five black pups were seen at the den site in early summer. Because of this pack's prior depredation history, the Recovery Program, under the leadership of the WS' Research Division, undertook a study to assess the potential utility of fladry as a method of deterring wolves from interacting with cattle (see Management and Control). With the cooperation of a local rancher and the assistance of Defenders of Wildlife, approximately 9 miles (14.5 km) of flagging was placed around the landowner's private property. Track plots and radio-collar monitors were used to determine the efficacy of the fladry line. No depredations were observed on the ranch for the first 3 months, but the pack was implicated in killing calves on the adjacent public land grazing allotment. In October, the pack crossed the fladry line and killed a calf, triggering a control action that led to the lethal control of alpha female B46 and an un-collared yearling male. The future status of this pack is of concern as the loss of alpha females has led to the break up of other packs. In addition, pack member B134, was illegally shot in November. This incident is under investigation. Because B46 was lethally removed, the Jureano Mountain pack was not considered a breeding pair for 2002.

### ***Kelly Creek***

The long-standing Kelly Creek pack in northern Idaho, using the upper end of the North Fork of the Clearwater, may have experienced some turnover in the alpha pair this year. The former alpha male, 90-13, died in spring of 2001, and his long-time mate's (B15) radio-collar has expired. Female wolf B42, a 5-year-old member of the pack was observed with at least 2 other adults and 6 pups within this pack's established territory. Trapping efforts resulted in the capture of an adult male, B135, near where the pups were seen. Interestingly, B79, a Kelly Creek disperser and assumed founder of the neighboring Lupine Creek pack, was aurally located several times back in his natal pack's territory, and on 1 occasion was observed with 3 other wolves; it was not known if those animals were members of the Kelly Creek or Lupine Creek pack. Kelly Creek qualified as a breeding pair for 2002.

### ***Landmark***

The Landmark pack was suspected to have produced 2 litters in 2002. This was only the second time a double litter has been documented for wolves in Idaho. Eleven pups were seen in early

June, nursed by the known alpha female, B91, as well as an un-collared female. The largest documented litter from a single female wolf in Idaho has been 9 pups. As in 2001, this pack moved to a series of rendezvous sites in the Cape Horn area of the Challis National Forest near a public sheep grazing allotment. Although the Landmark pack was in close proximity to sheep for a large portion of the summer grazing season, close monitoring of the wolves, coordination with affected parties, and the willingness of the livestock producer to move sheep away from areas of concentrated wolf activity was effective in avoiding livestock losses for the second consecutive year. This pack was considered a breeding pair for 2002.

### ***Marble Mountain***

The Marble Mountain pack seemingly denned in a new area in 2002, approximately 20 miles (32 km) southeast of the den site used for the past 2 years. In 2000 and 2001 the suspected den site and rendezvous site(s) were located in the immediate vicinity of Marble Mountain. But in 2002 the wolves presumably denned much further south, near the upper end of Dworshak Reservoir. Efforts to document reproduction and monitor pack movements were hampered when B48, the suspected alpha male and only radio-marked member of the pack, died in July before pups had been verified. With the aid of WS the wolves were located in August, at which time Recovery Program biologists captured a subadult male and verified the presence of at least 3 pups. This pack was implicated in the reported harassment of horses at an elk-hunting camp during the fall hunting season. One horse was reportedly injured while trying to escape and was later euthanized by its owner. The other horses were reported to have broken loose and escaped, but were not found. This was the first instance of the Marble Mountain pack reportedly interacting with livestock. Due to the death of B48, the pack was not considered a breeding pair for 2002.

### ***Moyer Basin***

The Moyer Basin pack underwent considerable turnover during 2002. All of the previously marked members of this pack, originally formed in 1996, are either dead, dispersed, or missing. Dispersing Stanley Basin pack wolf B97 paired with an uncollared female remaining in the traditional Moyer Basin territory southwest of Salmon this year. This new pair produced at least 4 pups, keeping the Moyer Basin pack viable. One of the 2002 pups was trapped and radio-tagged in September. This was a new breeding pair for 2002.

### ***Orphan***

Alpha male B28, whose radio-collar expired, and alpha female B61, did not produce a litter this year. B61 showed no indication of denning in the spring and observations over the course of the summer failed to indicate the presence of pups. A third black wolf was observed with them, presumably their lone pup from 2001. All 3 were seen at an elk carcass in July near Wet Meadows along the Landmark-to-Stanley Road. In 2002 this trio used new areas in Bear Valley

not known to be part of their typical home range. Because of low productivity the Orphan pack failed to qualify as a breeding pair for the third consecutive year.

### *Scott Mountain*

The Scott Mountain pack confounded Recovery Program biologists for most of the summer. The radio-collared alphas, B78 and B115, seemed to have localized during the denning season in the general area of the 2001 den site, but did not exhibit the same degree of site fidelity as in 2001. They then moved to Whitehawk Basin where they again localized, leading biologists to suspect that there were pups. However, sightings, howling surveys, and lack of pup sign indicated an absence of reproduction. The pack continued to use areas northeast of Garden Valley and the Deadwood River drainage. Efforts to capture and radio-collar additional pack members in September led to the unexpected discovery that there were indeed pups, as at least 2 pups were heard howling. However, repeated aerial sightings in December confirmed the presence of only 3 wolves, including just 1 pup; therefore the Scott Mountain pack was not counted as a breeding pair for 2002.

### *Selway*

This pack has roamed the Selway-Bitterroot Wilderness between the Main Salmon and Selway Rivers since 1996. A minimum of 3 black pups, and possibly 5 or more, was observed in the Selway pack's traditional den area. Efforts to trap and radio-collar additional wolves in this pack were unsuccessful. The Selway pack was considered a breeding pair in 2002.

### *Thunder Mountain*

Pup production was not verified for the Thunder Mountain pack in 2002. Alpha female B22 died in early July. She had been observed at close range just 6 days before her death, and appeared quite feeble at that time. It was unlikely that any pups she may have produced were with her then. The only other radio-collared wolf in the pack, B72, traveled widely throughout the summer, and efforts to document her association with pups were unsuccessful. Archery hunters reported hearing multiple wolves howling from separate locations, indicating that the pack probably was still intact despite B22's death. However, repeated aerial sightings documented the presence of only 2 other wolves with B72. It was interesting to note that the Wolf Fang pack was found inside the Thunder Mountain pack's territory on 2 occasions this summer, both prior to B22's death.

### *Whitehawk*

All 10 members of the Whitehawk pack were lethally controlled in April following a series of depredations on private property in the East Fork of the Salmon River drainage. The wolves, despite intensive efforts on the part of WS, local livestock operators, and the Recovery Program (see Management and Control), killed 2 calves and 1 sheep, and probably killed an additional 2 calves. This pack had a long-standing history of livestock depredations, primarily in the Sawtooth Valley and along the East Fork of the Salmon.

### ***Wildhorse***

Wildhorse pack alpha female B66 died in January, before the breeding season, so this pack did not reproduce in 2002, possibly due to the lack of a sexually mature female to replace B66. Following B66's death the remaining pack members, including the aged alpha male, B2, made extensive movements beyond the boundaries of their usual home range. They traveled as far south as Carey, Idaho; west of Hailey, Idaho; and into the East Fork of the Salmon River before returning to their home range in Copper Basin. Lack of pups and the death of B66 precluded this pack from breeding pair status.

### ***Wolf Fang***

Reproduction could not be documented for the Wolf Fang pack in 2002. Several efforts by Recovery Program personnel, which included the observation of 7-8 wolves and hearing the wolves howl on numerous occasions, failed to provide evidence of a new litter. In addition, the pack made 2 extraterritorial forays into the heart of the Thunder Mountain pack's territory. Such movements would be highly unusual for a pack with young pups vulnerable to attack by the resident pack. The Wolf Fang pack was not a breeding pair this year.

## **OTHER WOLF GROUPS MONITORED**

### ***B45***

Female B45 was initially captured in 1998 as a member of the Jureano Mountain pack. She dispersed to the John Day, Oregon area before being returned to the CIEPA. She has been paired with a radio-collared wolf, whose identity is unknown, for the past 3 years. This pair has not produced pups. They used an area north of McCall, Idaho comprising the North Fork of the Payette River, French Creek, and the Secesh River drainages. In late 2002, radio contact with B45 was lost; it was suspected that the batteries in her radio-collar expired.

### ***B67 (West Fork of the Bitterroot River, Montana)***



**R**epeated attempts were made to determine the status of female B67 during the summer of 2002. She occupied a fairly small area around Painted Rocks Reservoir in southwestern Montana, and was seen or heard on multiple occasions with 1 to 4 other wolves, but her affiliation with these wolves was unclear. B67's radio signal went on mortality mode in late November and her remains were retrieved. Forensic examination revealed that she had been illegally shot. Her death is under investigation. We will continue efforts to determine the status of wolves in this area.

The Recovery Program has received numerous credible reports of wolf activity in the North Fork of the Salmon River drainage, but the origin of these wolves remains uncertain. The occasional presence of B67 and an unknown number of other wolves from the north, and members of the Jureano Mountain pack from the south, in this area complicated determining the status of wolf activity. A preponderance of sightings occurred during the winter, which may correspond to wolves, including B67, that spend the summer in the West Fork of the Bitterroot River drainage, crossing the continental divide and moving south onto ungulate winter range in the North Fork of the Salmon River drainage. However, the Recovery Program has been unable to document B67 or radio-collared members of the Jureano Mountain pack in the North Fork of the Salmon drainage in conjunction with all reports of wolves there. Wolf presence in this area has been confirmed, but the status of wolf activity is unknown. Additional efforts will be required to determine the status of wolves in this area.

### ***B100/B63 and B80/B114 (The Big Hole, Montana)***

**F**emale wolf B100 dispersed from the Stanley Basin pack sometime after her capture in August of 2000. She was discovered, along with dispersing White Cloud wolf B63, in the Big Hole area of Montana in April of 2001. During the summer of 2001 both wolves were captured and relocated to the Selway-Bitterroot Wilderness in Idaho as a preventative measure against likely livestock depredations. After relocation, B100 and B63 made their way back to the Big Hole area and were expected to breed in early 2002. B63 and an un-collared wolf were illegally shot in late winter of 2001, and although B100 did localize briefly during the denning season and was seen with 1 other wolf on 1 occasion, no pups were observed over the remainder of the summer. During winter of 2002/2003, her collar was located on mortality. The incident is under investigation by the USFWS.

In late 2001 B80 (female) and B114 (male) were being monitored in the Big Hole area as well. Radio contact was lost with both shortly after they were relocated from the Big Hole to reduce the potential for conflicts with livestock. The excellent habitat in this area will probably continue to attract wolves, but the opportunities for conflict with humans and their uses may prevent packs becoming established. The status of pack activity in this area is currently unknown, although uncollared wolves that were associated with these 2 pairs were unaccounted for at the end of 2002.

### ***B103 (Willow Creek, Montana)***

In late 2002, wolf B103, a subadult female translocated in 2001 from the Wildhorse pack territory in Copper Basin, was aerially located and monitored by USFWS personnel near Lower Willow Creek Reservoir west of Drummond, Montana. During subsequent flights 1-2 additional wolves accompanied her. This potential pair may have difficulty establishing a territory in this area because of high cattle densities, and the likely potential for wolf-livestock conflicts.

### ***B105***

A disperser from the Stanley Basin pack, B105, was closely monitored this summer because of his proximity to cattle east of Pollock, Idaho. Tracks of 2 wolves were detected in the area, which is extremely rugged and has limited access. Later in the summer B105 was seen, with a second wolf, during a monitoring flight chasing cattle in Price Valley, east of New Meadows, Idaho. No depredations were associated with this sighting. A short time later a resident of Price Valley reported that at least 2 wolves had spooked horses near her home there. Again, no livestock were located that had been killed or injured by wolves. No pups were located. The Recovery Program worked with a livestock operator grazing east of Pinehurst, Idaho to determine if these wolves were preying upon cattle. No depredations were confirmed in 2002. It is anticipated that this potential pair will reproduce in 2003.

### ***B133***

Subadult male B133 was captured during a control action north of Hill City, Idaho following a confirmed wolf depredation on sheep. Subsequent tracking by Recovery Program biologists determined that this animal was accompanied by at least 2 other wolves. Additional depredations triggered a control action that resulted in the lethal removal of 2 uncollared wolves. At the time of the control it was discovered that this group consisted of 4 wolves. Because 3 of the 4 wolves of known age in this group were subadults, these wolves were considered non-reproductive. B133's radio-collar was located on mortality during the winter of 2002/2003. The incident is under investigation.

### ***Twin Peaks***

The status of this pack is unknown following the death of alpha male B59 in the summer of 2001. An attempt was made to inspect the area of last year's den/rendezvous sites as soon as practicable in 2002, but high water prevented biologists from reaching the area where the previous year's pups were seen. A single wolf was observed, but without radio-collars in the pack, further efforts to determine the presence of additional wolves and pups were difficult.

## **OTHER AREAS OF SUSPECTED WOLF ACTIVITY**

**W**olf activity in the following areas has either been documented in the past and/or was suspected based on reports from agency personnel and the public, and surveys conducted by the Recovery Program. Recovery Program personnel have investigated most of these areas in an effort to document wolf presence and determine pack status. Future efforts will be made to capture and radio-collar wolves in each of the following areas.

### ***Big Smoky***

**W**olves continued to inhabit the Big Smoky drainage north of Fairfield, Idaho. Recovery Program personnel saw 2 gray wolves in late winter of 2001/2002; however winter capture efforts were unsuccessful. Confirmed depredations on sheep in this area during the summer indicated the presence of 1 wolf, and in August, members of the Wilderness Awareness School found tracks and scats of 2 wolves in the area along headwater tributaries of the South Fork of the Boise River. Wolf activity was confirmed in this area. Evidence suggests the presence of a few lone wolves or potentially a pair of wolves. It is unlikely that a wolf pack exists currently in the Big Smoky area. The assistance of the Idaho Department of Fish and Game and the Sawtooth National Forest in documenting wolf status in this area has been greatly appreciated.

### ***Boise River***

**F**orest Service personnel reported sightings of tracks and howling to the Recovery Program from the southeastern portion of the Sawtooth Wilderness during the summer of 2002. An additional report of wolf sign was received during the hunting season of wolf activity north of Featherville, which could represent the same group of wolves. During the winter of 2002/2003 Recovery Program personnel investigated the area around Atlanta and discovered evidence of at least 2-3 wolves.

### ***Bovill/Deary***

**I**nfrequent but persistent sightings of lone wolves continue to emanate from this area. In 1997 a radio-collared dispersing wolf from northwestern Montana was found dead in this area. In 2000 a local resident shot video of what looked like a radio-collared wolf, and as recently as September 2002 the Recovery Program received news of a "wolf-like animal," wearing what was believed to be a radio-collar, near Clarkia, Idaho. The behavior of this animal, as described, was somewhat suspect, but its identity as a wolf cannot be ruled out. Wolf activity in this area has not been confirmed during 2002. Currently, we do not have evidence to suggest the presence of a wolf pack, although we suspect wolf activity in the area. Additional efforts are needed to document the status of wolf activity in this area. Wildlife Services has done a great job of keeping in touch with local residents and soliciting reports of wolves in this area.

### ***East Fork of the Bitterroot River (Montana)***

An uncollared wolf pack is suspected in this area. Based on reports from the public, the USFWS estimated 5 wolves inhabited the area on the east side of the Sapphire Mountain range. Additional efforts will be required to document the status of wolves in this region.

### ***Eldorado/Lolo Creeks***

Wolf activity in this area is suspected based on reports received over the past 2 winters. Field surveys, both in the summer and winter, by Recovery Program biologists located wolf scats and tracks, but were unable to document status of wolf activity. We appreciate the assistance we have received from local residents and will continue our efforts in this area.

### ***Florence Town Site/Slate Creek***

On 2 occasions in September, Recovery Program crews investigated the area around Moores Guard Station based on reports from a U.S Forest Service wilderness ranger who has purportedly observed wolf sign in that area for the past 2 summers. The heavily roaded country surrounding the old Florence town site was also examined soon after a report was received of wolf activity there. Some scats were found, possibly made by a wolf-sized canid, but no definitive evidence of wolf presence was located. Although unconfirmed, the presence of a wolf pack is suspected in this area based on reports received from agencies and the public. Additional efforts will be required to document the status of wolf activity in this area.

### ***Morgan Creek***

During the fall hunting season reports of as many as 10 wolves were received. The sightings were centered on the Eddy Basin area northwest of Challis. Recovery Program personnel visited this area in late 2002 based on more recent reports; tracks of 11 wolves were verified along the Morgan Creek road. With the assistance of local residents we may be able to identify areas frequently traveled by these wolves, enabling us to capture and radio-collar at least 1 member of this group.

### ***Pierce/Headquarters***

Frequent reports of wolves and/or wolf sign from the south side of the lower end of the North Fork of the Clearwater River have been received over the past several years. Wolf activity is suspected; however, further efforts will be required to determine wolf status in this area.

## *Upper Selway*

An undocumented pack was suspected to inhabit the upper Selway River drainage. Reports over the past 2-3 winters describe multiple wolves moving along the Selway River between Moose Creek and White Cap Creek. Because most reports of wolves were received during the winter and the area is part of the Selway-Bitterroot Wilderness where access is limited, capturing and radio-collaring wolves in this area will be problematic.

## IDAHO WOLF PACK PROFILES

### ***B45 pair***

Alpha pair (male, female)	Unknown, B45
Date paired	??
Years produced (minimum litter size)	
Note	Suspected paired; no reproduction ever confirmed
Recovery status in 2002	Non-breeding pair

### ***Bass Creek pack***

Alpha pair (male, female)	B87*, MT57
Date paired	??
Years produced (minimum litter size)	1999 (8)
Note	Entire pack put in captivity 1999; relocated to NW Montana 2000
Recovery status in 2002	Extirpated

### ***Big Hole pack***

Alpha pair (male, female)	B07, B11
Date paired	Mar. 1996
Years produced (minimum litter size)	1998 (5), 1999 (3), 2001 (6) 2002 (3)
Recovery status in 2002	Breeding pair

### ***Big Smoky pack***

Alpha pair (male, female)	B96*, Unknown
Date paired	Jan. 2000
Years produced (minimum litter size)	2000 (6)
Note	Pack disrupted by illegal take 2000
Recovery status in 2002	Extirpated

### ***Buffalo Ridge pack***

Alpha pair (male, female)	B93, B95
Date paired	May 2001
Years produced (minimum litter size)	2002 (7)
Recovery status in 2002	Breeding pair

### ***Como Lake pack***

Alpha pair (male, female)	Unknown, Unknown
Date paired	??
Years produced (minimum litter size)	2002 (3)
Note	Verified by USFWS and MT Fish, Wildlife, & Parks
Recovery status in 2002	Breeding pair

### ***Chamberlain Basin pack***

Alpha pair (male, female)	B09, B16
Date paired	Apr. 1995
Years produced (minimum litter size)	1996 (4), 1997 (4), 1998 (4), 1999 (5), 2000 (8), 2001 (4)
Recovery status in 2002	Non-breeding pair

### ***Five Lakes Butte pack***

Alpha pair (male, female)	Unknown, Unknown
Date paired	??
Years produced (minimum litter size)	2002 (2)
Recovery status in 2002	Breeding pair

<b><i>Gold Fork pack</i></b>	
Alpha pair (male, female)	B117, B129
Date paired	??
Years produced (minimum litter size)	2000 (2), 2001 (3)
Recovery status in 2002	Non-breeding pair
<b><i>Gospel Hump pack</i></b>	
Alpha pair (male, female)	Unknown, B50
Date paired	??
Years produced (minimum litter size)	2000 (2), 2001 (7), 2002 (3)
Recovery status in 2002	Breeding pair
<b><i>Jureano Mountain pack</i></b>	
Alpha pair (male, female)	B106, B46*
Date paired	Jan. 2000
Years produced (minimum litter size)	1997 (6), 1998 (4), 1999 (9), 2000 (6), 2001 (3), 2002 (5)
Recovery status in 2002	Non-breeding pair
<b><i>Kelly Creek pack</i></b>	
Alpha pair (male, female)	Unknown, B42
Date paired	??
Years produced (minimum litter size)	1997 (5), 1998 (6), 1999 (4), 2000 (2), 2002 (6)
Recovery status in 2002	Breeding pair
<b><i>Landmark pack</i></b>	
Alpha pair (male, female)	B33, B91
Date paired	??
Years produced (minimum litter size)	1996 (5), 1997 (4), 1999 (5), 2000 (8), 2001 (6), 2002 (11)
Note	11 pups represent double litter
Recovery status in 2002	Breeding pair
<b><i>Marble Mountain pack</i></b>	
Alpha pair (male, female)	B48*, Unknown
Date paired	Jan. 2000
Years produced (minimum litter size)	2000 (2), 2001 (3), 2002 (3)
Recovery status in 2002	Non-breeding pair
<b><i>Moyer Basin pack</i></b>	
Alpha pair (male, female)	B97, B145
Date paired	??
Years produced (minimum litter size)	1997 (4), 1998 (4), 1999 (7), 2000 (5), 2001 (5), 2002 (4)
Recovery status in 2002	Breeding pair
<b><i>Orphan pack</i></b>	
Alpha pair (male, female)	B28, B61
Date paired	Jan. 2000
Years produced (minimum litter size)	2000 (1), 2001 (1)
Recovery status in 2002	Non-breeding pair
<b><i>Scott Mountain pack</i></b>	
Alpha pair (male, female)	B115, B78
Date paired	??
Years produced (minimum litter size)	2001 (4), 2002 (2)
Note	2 pups did not survive to December 31, 2002
Recovery status in 2002	Non-breeding pair

<b><i>Selway pack</i></b>	
Alpha pair (male, female)	B05, B10
Date paired	Aug. 1995
Years produced (minimum litter size)	1996 (2), 1999 (2), 2000 (4), 2001 (3), 2002 (3)
Recovery status in 2002	Breeding pair
<b><i>Snow Peak pack</i></b>	
Alpha pair (male, female)	R132*, B20*
Date paired	Sept. 1999
Years produced (minimum litter size)	1998 (5)
Note	No contact with pack since February 2000
Recovery status in 2002	Extirpated
<b><i>Stanley Basin pack</i></b>	
Alpha pair (male, female)	B27*, B23*
Date paired	Jun. 1996
Years produced (minimum litter size)	1997 (6), 1998 (6), 1999 (7), 2000 (7)
Note	Pack disrupted by lethal control/ dispersal late 2000
Recovery status in 2002	Extirpated
<b><i>Thunder Mountain pack</i></b>	
Alpha pair (male, female)	Unknown, B22*
Date paired	Dec. 1996
Years produced (minimum litter size)	1998 (6), 1999 (7), 2000 (3), 2001 (9)
Note	Pack status uncertain after death of B22 in 2002
Recovery status in 2002	Non-breeding pair
<b><i>Twin Peaks pack</i></b>	
Alpha pair (male, female)	B59*, Unknown
Date paired	??
Years produced (minimum litter size)	1998 (3), 1999 (4), 2001 (7),
Note	Pack status uncertain after death of B59 in 2001
Recovery status in 2002	Non-breeding pair
<b><i>White Cloud pack</i></b>	
Alpha pair (male, female)	B85*, B36
Date paired	Feb. 1998
Years produced (minimum litter size)	1998 (9), 1999 (7), 2000 (2)
Note	Pack disrupted by relocation/ lethal control in 2000
Recovery status in 2002	Extirpated
<b><i>Whitehawk pack</i></b>	
Alpha pair (male, female)	B101*, B119*
Date paired	Apr. 99
Years produced (minimum litter size)	2000 (1), 2001 (9)
Note	Pack removed by lethal control for chronic depredations
Recovery status in 2002	Extirpated
<b><i>Wildhorse pack</i></b>	
Alpha pair (male, female)	B2, B66*
Date paired	Feb. 2000
Years produced (minimum litter size)	2000 (2), 2001 (5)
Recovery status in 2002	Non-breeding pair



***Wolf Fang pack***

Alpha pair (male, female)

Date paired

Years produced (minimum litter size)

Recovery status in 2002

B132?, B38

Jan. 2000

2000 (5), 2001 (8)

Non-breeding pair

\* Deceased

## CONTACTS

The Nez Perce Tribe's Idaho Wolf Recovery Program can be reached by the following:

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For information about the Nez Perce Tribe's Wildlife Program and to view the previous Progress Report, please visit the following website:

[http://www.nezperce.org/Programs/wildlife\\_program.htm](http://www.nezperce.org/Programs/wildlife_program.htm)

For information about wolf recovery in the Northern Rocky Mountains, please visit the following website:

<http://www.westerngraywolf.fws.gov/>

### To report wolf sightings within Idaho:

Nez Perce Tribe's Idaho Wolf Recovery Program, McCall, ID	(208) 634-1061
Nez Perce Tribe's Wildlife Department, Lapwai, ID	(208) 843-2162
U.S. Fish and Wildlife Service, Boise, ID	(208) 378-5639

### To report livestock depredations within Idaho:

USDA/APHIS/Wildlife Services, State Office, Boise, ID	(208) 378-5077
USDA/APHIS/Wildlife Services, District Supervisor, Boise, ID	(208) 378-5077
USDA/APHIS/Wildlife Services, District Supervisor, Gooding, ID	(208) 934-8129
USDA/APHIS/Wildlife Services, District Supervisor, Pocatello, ID	(208) 237-8640
USDA/APHIS/Wildlife Services, Wolf Specialist, Arco, ID	(208) 681-3127

### To report information regarding the illegal killing of a wolf or a dead wolf within Idaho:

U.S. Fish and Wildlife Service Senior Agent, Boise, ID	(208) 378-5333
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