

IDAHO WOLF RECOVERY PROGRAM

Restoration and Management of Gray Wolves in Central Idaho Progress Report 2004



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March 2005



Suggested citation: Mack, C. M., J. Holyan, and I. Babcock. 2005. Idaho Wolf Recovery Program: Restoration and management of gray wolves in central Idaho. Progress report 2004. Nez Perce Tribe, Department of Wildlife Management, Lapwai, ID. 50 pages.

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. Nonessential experimental population areas were established for, and wolves were actively reintroduced into, the Greater Yellowstone and Central Idaho Areas. Reintroduced wolves were designated “nonessential experimental,” under section 10(j) of the Endangered Species Act (ESA), allowing for management flexibility to address public concerns.

At the end of 2004, the Central Idaho Experimental Population Area (CIEPA) was home to an estimated 452 wolves including 51 known wolf packs. Thirty-seven of those produced litters, thirty of which met the recovery requirement for a breeding pair – “an adult male and an adult female wolf that have produced at least 2 pups that survived until December 31 of the year of their birth, during the previous breeding season.” The population recovery goal for the Northern Rocky Mountain Recovery Region (NRMRR), to maintain 30 breeding pairs equitably distributed across the 3 restoration areas for 3 years, was achieved at the end of 2002.

Wolves were well distributed throughout the CIEPA at the end of 2004. Territories of all known packs and pairs were completely or predominately within National Forest lands, twenty-one of which included federally designated wilderness areas.

Six new breeding pairs were documented in 2004 and a minimum of 123 wolf pups was produced in 37 litters. Minimum average litter size, for packs where counts were believed complete, was 3.8 pups.

Documented wolf mortalities during 2004 more than doubled from the previous year. Of 47 wolf mortalities with known cause, all (100%) were human-related. An additional 6 deaths of undetermined causes and 1 suspected mortality were recorded.

Seven radio-collared Idaho wolves were documented to have dispersed during 2004. Tracking the movements of dispersing wolves between recovery areas lends credence to the notion that the NRMRR is a single, interconnected metapopulation.

During 2004, 70 individuals were captured, which resulted in the deployment of 56 new radio-collars and the recollaring of 3 individuals. Seven pups and 2 adults were captured but not radio-collared, and 2 adults were euthanized at the times of their capture.

Confirmed and probable wolf-caused livestock kills during 2004 amounted to 25 cattle and 182 sheep in the CIEPA. As a result of agency control actions, 30 wolves were lethally controlled and 6 were radio-collared and released on site.

Scientific information collected through peer-reviewed research will foster a better understanding of wolf ecology and the effects of wolves within the ecosystems they inhabit, leading to effective wolf conservation and management. The Idaho Wolf Recovery Program continued to initiate and support ongoing research.

Gray wolf population recovery goals have been met in the NRMRR and the USFWS will initiate a proposal to delist wolves when Idaho, Montana, and Wyoming have USFWS-approved wolf management plans. As of 2004, Idaho and Montana have approved plans, while Wyoming has legally challenged the USFWS’ decision not to approve their management plan. Consequently, delisting will not proceed until this litigation is completed. As an interim measure, the USFWS adopted a new Final Rule for the experimental population areas that liberalizes take provisions for wolves, and enable states and tribes with USFWS-approved wolf management plans to petition the Department of Interior for increased management authority while wolves are still listed under the ESA. During 2004, the State of Idaho and the Nez Perce Tribe continued efforts to develop a Memorandum of Agreement outlining a partnership of shared roles and responsibilities for the continued recovery and management of wolves.

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 (BIA), 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 continued to make the Recovery Program a success. We thank the Nez Perce Tribe's 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 Jeff Foss, Carter Niemeyer, Ed Bangs, Joe Fontaine, Tom Meier, Mike Jimenez, Diane Boyd, Jon Trapp, Jack Bucklin, and Liz Bradley. The USFWS Law Enforcement division's efforts in investigating wolf mortalities continued to aid wolf recovery. Our thanks to Senior Agent Craig Tabor, and Special Agents Rick Branzell, Scott Bragonier, and Scott Kabasa. 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 Todd Grimm of the Idaho State Office and Larry Handegard and Colleen Jensen of the Montana State Office, District Supervisors, and all of the dedicated Wildlife Specialists that conducted field investigations. Rick Williamson, Wolf Specialist for WS Idaho, continued his tireless efforts to minimize wolf-livestock conflicts. Doug Smith, Dan Stahler, and Deb Guernsey, Yellowstone National Park, have given advice and exchanged information that has helped our efforts in Idaho. Idaho Department of Fish and Game personnel Steve Nadeau, Jason Husseman, and Michael Lucid were welcomed as cooperators and partners in wolf recovery and management. We expect to have a long working relationship with them, and the rest of the biologists and conservation officers throughout the state. Our sincerest gratitude to Brent Thomas for his cooperation in producing Figure 3 and Appendix A of this report. The U.S. Forest Service is recognized for its assistance in providing logistical support, wolf sighting reports, and friendship at the many districts within wolf range. A very special thanks to Dave Renwald, BIA, for his continued support over the years.

We appreciate the continued dedication of Nez Perce Tribal biologists Kent Laudon, Adam Gall, and Anthony Novack. Their individual and collective skills made for another safe and productive field season. Kent Laudon deserves special recognition for his 8 seasons of service to wolf recovery in Idaho. We wish him the best of luck as one of Montana's new wolf biologists. We benefited tremendously from the volunteers who graciously assisted; Mischa Connine, Jonathan Derbridge, Jennifer Donovan, Janeen Hetzler, Tyler Hollow, Anastacia Kampe, and Doug Noel- we hope you gained from your experiences. We appreciate the help and support received from Administrative Assistant Consuelo Blake, who also moved on to a new job, and the Wildlife staff in Lapwai.

The pilots and staffs of McCall Aviation, Stanley Air, and North Star Aviation continued to support our often-demanding requests with courtesy. We specifically recognize Bob Danner and Dia Terese, Pat and Mike Dorris, Rod Nielson, and Steve and Michele Wolters. We truly appreciate your expertise, patience, and skill. Winter helicopter capture was conducted efficiently and safely due to the outstanding capabilities of Gary Brennan and the support crew of Hawkins and Powers Aviation.

Dr. Clarence Binninger, Recovery Program veterinarian, continues to work with us in seeking ways to make wolf capture as safe as it can be. We would like to thank Suzanne Stone of Defenders of Wildlife for her assistance in developing and applying non-lethal techniques to address wolf-livestock conflicts. Thanks also to Jim and Holly Akenson, University of Idaho Taylor Ranch; Wolf Education and Research Center; Ed Levine, Merlin Systems; Ralph Maughan and Salle Engelhardt, Wolf Recovery Foundation; Gabe Spence, Wilderness Awareness School; Carol Williamson; Bob and Judy Griswold; Mike Schlegel; John and Nina Hafner; Sheriff Ray Payton, and Kyran Kunkel and Wayne Melquist for their assistance.



DEDICATION

The Recovery Program dedicates this Progress Report to the memory of Robert “Bob” Danner. Bob was the owner and primary pilot of Stanley Air, operated out of Stanley, Idaho. He was involved in the Recovery Program conducting telemetry monitoring flights, performing as spotter airplane during helicopter capture operations, and transporting field crews since 1996. Bob was a first-class back-country pilot and the Recovery Program will miss his skills and friendship. Bob, along with his wife Dia, welcomed biologists and other participants in the Recovery Program into their home with open arms and the warmest hospitality.

TABLE OF CONTENTS

Executive Summary.....	ii
Acknowledgements.....	iii
Dedication.....	iv
Introduction.....	1
The Central Idaho Experimental Population Area.....	2
Status of Idaho Wolves.....	2
Distribution.....	3
Reproduction.....	5
Mortality.....	5
Dispersal.....	7
Wolf Management.....	9
Capture and Radio-collaring.....	9
Livestock Depredation.....	9
Livestock Conflict Resolution.....	11
Litigation.....	12
Research.....	13
Wolf Recovery, Interim Management & Delisting.....	15
Idaho Wolf Packs.....	17
Other Wolf Groups Monitored.....	28
Areas of Suspected Wolf Activity.....	29
End of an Era.....	33
Citations for Publications.....	34
Contacts.....	39
Idaho Wolf Pack Profiles.....	40
Appendix A.....	44

INTRODUCTION

Wolf recovery in the northern Rocky Mountains began in the early 1980s when dispersing individuals from Canada recolonized Montana's Glacier National Park (GNP). The return of wolves to GNP provided the impetus for heightened discussions of reintroductions into Yellowstone National Park (YNP) and the large wilderness areas of central Idaho. Those discussions ultimately led to preparation of an Environmental Impact Statement (EIS) addressing wolf recovery in the northern Rocky Mountains. Because support for wolf restoration was widespread nationally, the Secretary of Interior approved the Final EIS in 1994. The U. S. Fish and Wildlife Service (USFWS) captured wolves in Alberta and British Columbia, Canada, in 1995 and 1996 respectively, and translocated them to YNP and central Idaho. Those wolves became the founders of what have become robust populations in Idaho and Wyoming.

The recovery effort was viewed by many throughout the country as a way of correcting the "wrongs" of previous generations of U.S. citizens, who conducted extermination campaigns to rid the nation of wolves. In the 1960s, pioneering research emphasized the important role wolves, and other predators, played in the ecological community. Eventually this groundswell of environmental awareness led to passage of the ESA in 1973, where the gray wolf was one of the first species listed.

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 Endangered Species Act (ESA), and transfer wolf management authorities back to states and tribes. The population recovery goal for the Northern Rocky Mountain Recovery Region (NRMRR) is to maintain 30 breeding pairs equitably distributed across the 3 restoration areas of northwest Montana, central Idaho, and the greater Yellowstone area, for 3 years. The Final EIS designated nonessential experimental population areas for the Central Idaho Restoration Areas and Greater Yellowstone (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

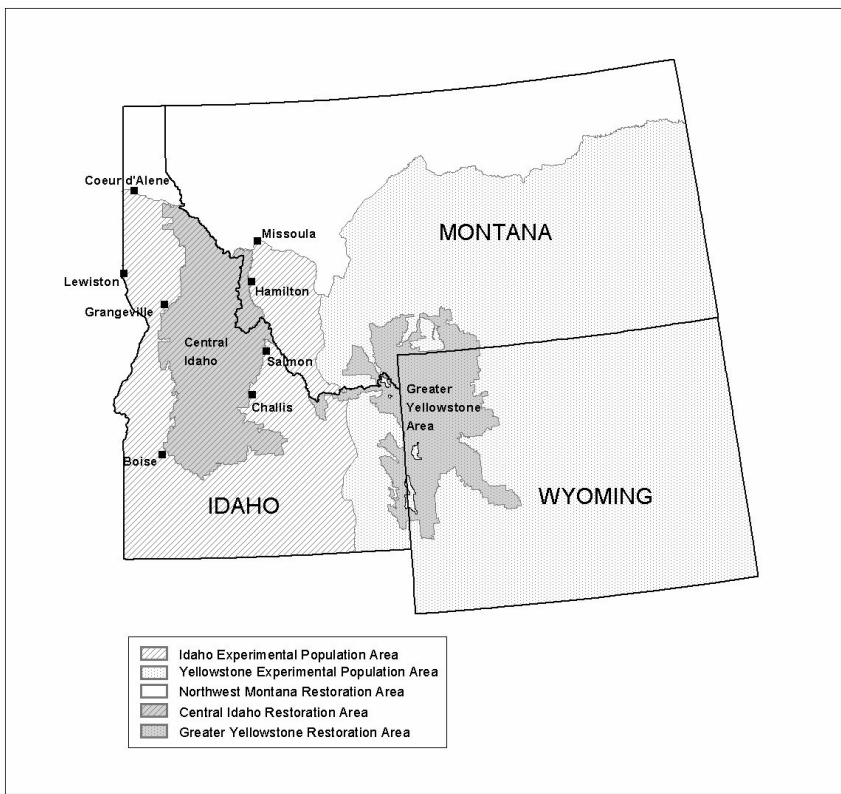


Figure 1. Northwest Montana, Central Idaho, and Greater Yellowstone gray wolf restoration and experimental population areas.

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. A new Final Rule (10(j) amendment) was adopted for the experimental population areas in 2005. This 10(j) amendment liberalized conditions under which wolves can be taken, and allowed states and tribes to petition the Department of Interior for increased wolf management authorities prior to delisting.

In Idaho, the USFWS, the Nez Perce Tribe (Tribe), USDA Wildlife Services (WS), and the Idaho Department of Fish and Game (IDFG) 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. The population recovery goal for the NRMRR was achieved in 2002; the NRMRR supported an estimated 835 wolves and 66 breeding pairs in 2004. The ultimate success of the recovery program will hinge on social tolerance for wolves and public support for recovery and delisting. The true measure of success will be to effectively address social concerns surrounding wolf recovery and reduce wolf-human conflicts.

THE CENTRAL IDAHO EXPERIMENTAL POPULATION AREA

The Central Idaho Experimental Population Area (CIEPA) extends from Interstate 90 south to Idaho's southern border, excluding that portion of the state east of Interstate 15, and also includes a portion along the eastern slope of the Bitterroot Divide in Montana (Figure 1). The CIEPA encompasses approximately 77,782 square miles (201,457 square km) of contiguous National Forest lands administered by 14 different National Forests in Idaho and Montana.

Central Idaho, vast, mountainous, and remote, is one of the largest remaining undeveloped blocks of public land in the conterminous United States. The core of the CIEPA 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), which represents the largest block of federally-designated Wilderness in the lower 48 states.

Three major mountain chains and 2 large river systems create a very diverse landscape, ranging from sagebrush-covered flatlands in the southern part of Idaho, 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 m). Annual precipitation varies from less than 8 inches (20 cm) at lower elevations to almost 100 inches (254 cm) at upper elevations.

STATUS OF IDAHO WOLVES

The Idaho wolf population has continued to expand in both numbers and distribution since initial reintroductions (Figure 2). In 2004, 51 wolf packs (44 in the Idaho portion of the CIEPA and 7 in

the Montana portion) were documented and the population was estimated at 452 wolves (422 in the Idaho portion and 30 in the Montana portion; Table 1). Additionally, 15 different areas of suspected wolf activity in the CIEPA were identified. Eight new wolf packs (7 in the Idaho portion and 1 in the Montana portion) were documented in 2004. Five packs were retroactively added as documented packs for 2003 based on information obtained in 2004. The CIEPA harbored over half of the estimated wolf population (452 out of 835) and nearly half of the documented breeding pairs (30 of 66) in the NRMRR in 2004. Since 1999 the

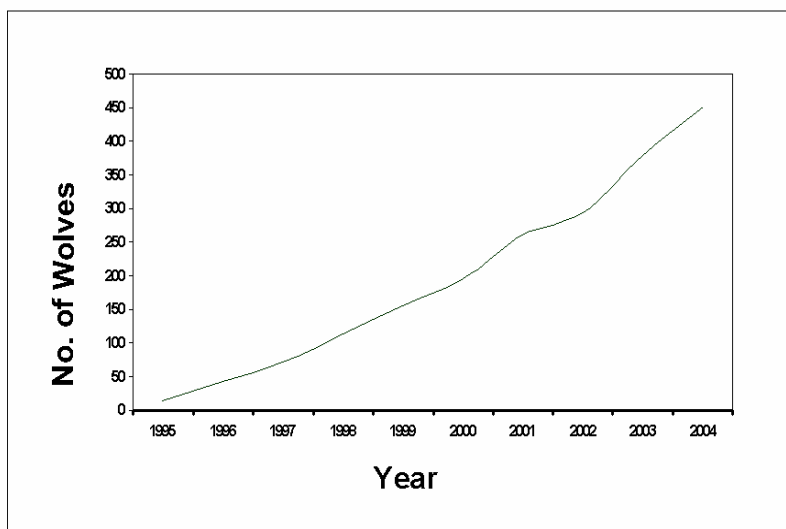


Figure 2. Fall estimates of minimum numbers of wolves in the Central Idaho Experimental Population Area, 1995-2004.

annual rate of population growth has averaged approximately 26%, and shown a somewhat decreasing trend. The rate of growth of the wolf population is expected to continue to decrease in the future as it reaches social and biological carrying capacity. The social carrying capacity for wolves will undoubtedly be below the biological carrying capacity as wolves are managed in concert with other wildlife values, livestock concerns, and management objectives. Ultimately the citizens of Idaho, not habitat, will determine the number of wolves that will persist in the state.

Table 1. Estimated population parameters for wolves in the Central Idaho Experimental Population Area, 1995-2004.

Year	No. packs	No. breeding pairs	Min. No. pups	No. mortalities ^a	Population estimate
1995	0	0	0	1	14
1996	3	3	11	4	42
1997	7	6	29	2	71
1998	12	10	52	9	114
1999	13	10	68	22	156
2000	19	10	64	23	196
2001	17	14	84	16	261
2002	24 ^b	14 ^b	62 ^b	28	294 ^b
2003	38 ^b	28 ^b	113 ^b	18	382 ^b
2004	51	30	123	54	452

^aIncludes wolves known and suspected to have died
^bIncreased based on information obtained subsequently.

Distribution

Wolves were well distributed throughout the CIEPA at the end of 2004 (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 the Snake River on the west. The first documented pack with an established territory west of Highway 95, the Cold Springs pack, was discovered in 2004. Territories of all established and documented packs were predominately or wholly within National Forest public lands. Twenty-one Idaho pack territories included, or were entirely contained within, federally designated Wilderness Areas.

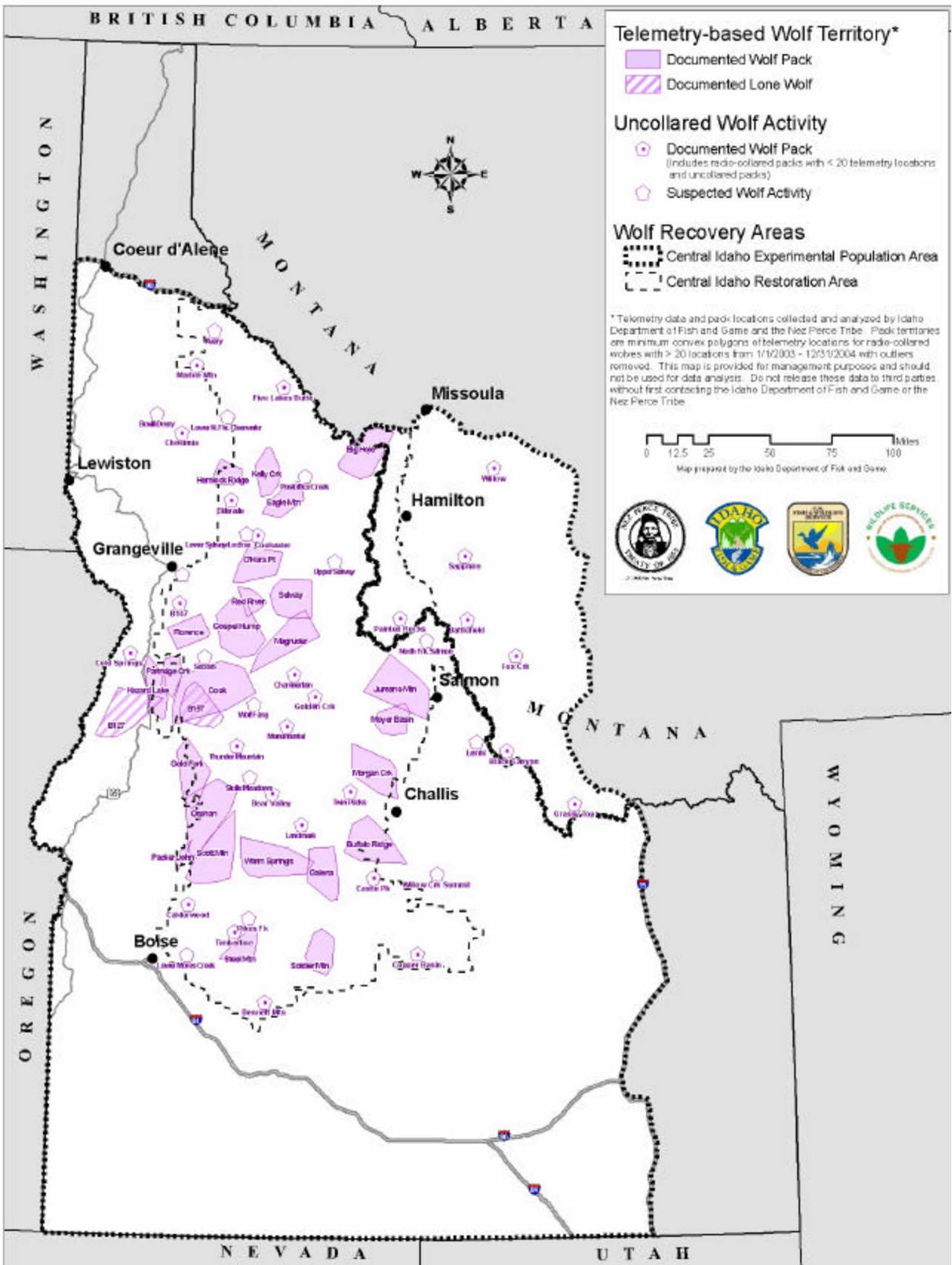


Figure 3. Locations of known wolf packs, lone wolves, and areas of suspected wolf activity in the Central Idaho Experimental Population Area, 2004.

Wolf sighting reports submitted to the IDFG website during 2004 revealed 2 areas of potential wolf activity previously unknown to the Recovery Program, both outside of the CIEPA; one north of Interstate 90 in the Northwest Montana wolf recovery area, and the second in the Greater Yellowstone recovery area near Island Park, Idaho (Appendix A). Because of their ability to occupy a large range of habitat types, it would be expected that wolves could live almost anywhere within the CIEPA where there was sufficient prey and human tolerance.

Reproduction

The status of 57 known packs, known or suspected pairs, and areas of suspected wolf activity was investigated during 2004. Of those, the Recovery Program documented 51 packs, thirty-seven (34 in the Idaho portion and 3 in the Montana portion) of which produced litters and thirty (27 in the Idaho portion and 3 in the Montana portion) qualified as breeding pairs (Table 2). Wolf pup counts were conservative estimates because some pup mortality may have occurred before being documented and some counts were incomplete. More pups, litters, and breeding pairs were documented in 2004 than in any previous year. A minimum of 123 wolf pups (112 in the Idaho portion and 11 in the Montana portion) was documented in the CIEPA in 2004. Minimum documented litter size ranged from 2-7 pups. Average minimum litter size for those packs where counts were believed complete, was 3.8 pups per litter.

Six new breeding pairs were documented in 2004; Calderwood, Chesimia, Cold Springs, Coolwater Ridge, Packer John, and Warm Springs. In addition, the Partridge Creek pack produced a litter in 2004, but was not considered a breeding pair. Five packs, Battlefield (MT), Bear Valley, Bennett Mountain, Copper Basin, and Golden Creek were retroactively counted as 2003 reproductive packs based on pack size and presence of subadult wolves, although 2004 was the first year of documented reproduction. Extant packs for which there was no evidence of reproduction were; Castle Peak, Chamberlain Basin, Cook (no evidence of pups present prior to lethal removal), Eldorado, Landmark, Lupine, Red River, Selway, and Thunder Mountain.

Mortality

Fifty-three documented, and 1 suspected, wolf mortalities were recorded in 2004 (38 in the Idaho portion and 15 in the Montana portion; Table 3). All confirmed mortalities of known cause ($n = 47$) were human-related (control [$n = 30$], illegal take [$n = 11$], and other human causes [$n = 6$]). The cause of death in 6 cases was unknown. These figures are underestimates of the true amount of overall mortality occurring within the wolf population, as documenting mortalities of uncollared wolves that are not lethally controlled is difficult. No wolf deaths due to natural causes were recorded, another indication that mortality was underestimated, as individuals undoubtedly succumbed to non-human-related factors. Also, mortality estimates do not include pups less than 4 months of age.

More wolves ($n = 30$) were lethally controlled in the CIEPA in 2004 than in the 3-year period of 2001-2003 combined. This mortality stemmed from removals in 6 packs: the Cook (9 individuals), Hazard Lake (3 individuals), and Partridge Creek (2 individuals) packs north of McCall, Idaho; the Bennett Mountain pack (3 confirmed deaths and 1 suspected) northeast of Mountain Home, Idaho;

Table 2. Estimated minimum numbers of pups produced and mean litter sizes of documented wolf packs for the Central Idaho Experimental Population Area, 1996-2004.

Pack	Minimum number of pups											
	1996	1997	1998	1999	2000	2001	2002	2003	2004	Total	Mean ^f	
Battlefield								2 ^{c,g}	4	6	3	
Bear Valley								4 ^h	5	9	4.5	
Bennett Mountain								1 ^{a,c}		1		
Big Hole			5	3	0	6	3	3	2 ^c	22	3.7	
Black Canyon (MT)												
Buffalo Ridge							7	6	2 ^c	15	5.0	
Calderwood									3	3		
Castle Peak								4		4		
Chamberlain Basin	4	4	4	5	8 ^b	4	0	2		31	4.4	
Chesimia									4	4		
Cold Springs									4	4		
Cook							2 ^{c,e}	2	0	4	2.0	
Coolwater Ridge									3 ^c	3		
Copper Basin								2 ^{c,g}	2 ^c	4	2.0	
Eagle Mountain								2 ^c	3	5	2.5	
Eldorado								2 ^{c,e}	2 ^c	4	2.0	
Five Lakes Butte								2 ^c		3 ^c	5	2.5
Florence								2	7 ^c	9	4.5	
Fox Creek (MT)								6		6		
Galena								5	3	8	4.0	
Gold Fork					2 ^c	2 ^c	0	0	3	7	2.3	
Golden Creek								2 ^g	2	4	2.0	
Gospel Hump						7	3 ^c	4	4	18	4.5	
Grassy Top (MT)												
Hazard Lake								5	3 ^c	8	4.0	
Hemlock Ridge								5	3 ^c	8	4.0	
Jureano Mountain		6	4	9 ^a	6	3	5 ^a	3	3	39	4.9	
Kelly Creek		5	6	4	2	0	6	2 ^c	2 ^c	27	3.9	
Landmark	5	4	0	5	8	6	11 ^b	2		41	5.9	
Lupine						2				2		
Magruder								6	5	11	5.5	
Marble Mountain					2 ^c	3 ^c	3 ^{a,c}		2	10	2.5	
Monumental								a,d	3	3		
Morgan Creek							2 ^{c,e}	2 ^c	2	6	2.0	
Moyer Basin		4	4	7	5 ^a	5	4	2	3 ^c	34	4.3	
O'Hara Point							2 ^{c,e}	7	4	13	4.3	
Orphan					1 ^a	1 ^a	0	1 ^a	4 ^c	7	1.8	
Packer John									5	5		
Painted Rocks (MT)									4	4		
Partridge Creek									6	6		
Red River							2 ^{c,e}	4		6	3.0	
Sapphire (MT)								3 ^a	3	6	3.0	
Scott Mountain						4	2 ^{a,c}	5	4	15	3.8	
Selway	2	0	0	2	4	3	3 ^c	3		17	2.8	
Soldier Mountain								4	5	9	4.5	
Steel Mountain								6	3 ^c	9	4.5	
Thunder Mountain			6	7	3	9	0			25	6.3	
Timberline								4	1 ^c	5	2.5	
Twin Peaks			3	4	0	7 ^a		a,d	1 ^c	15	3.8	
Warm Springs									3	3		
Willow (MT)								0				
Total pups	11	29	52	68	64	84	62	113	123	606		
No. of litters	3	6	10	12	16	17	17	33	37	151		
Mean litter size ^f	3.7	4.8	5.2	5.7	4.0	4.9	3.6	3.4	3.3	4.0		

^a Did not meet requirements for breeding pair.

^b Includes 2 litters born into this pack

^c Suspected incomplete counts.

^g Added retroactively based on information obtained in 2003, with min. 2 pups required for breeding pair status

^h Means calculated using incomplete counts, therefore should be viewed as minimums.

^d Added retroactively based on information obtained in 2004, with min. 2 pups required for breeding pair status

and the Fox Creek (8 individuals) and Battlefield (5 individuals) packs in the Montana portion of the CIEPA.

Since 1995, mortality related to human factors was the greatest source of documented mortality for wolves that died of known causes in the CIEPA ($n = 133$, 94%).

Wolves lethally controlled and legally taken, both radio-collared and uncollared, were well documented. Illegal take, especially of uncollared animals, was difficult to document. The number of radio-collared wolves documented or suspected to have been illegally killed, in proportion to the total number of radio-collared wolves monitored in the CIEPA during 2004, was used to generate an estimate of illegal take population-wide. This is a minimum estimate in that some radio-collars are likely destroyed when wolves are illegally killed, precluding documentation. This computation suggests that 44-65 wolves were illegally killed in 2004. This represented 9-13% of the pre-mortality population estimate and would be additive to other sources of mortality. Other sources of mortality (other human causes [5%], lethal control [6%], and other/unknown [8%]) represented 19% of the pre-mortality population estimate. Total mortality for the CIEPA was estimated at 28% of the pre-mortality population estimate.

Exploited wolf populations are capable of sustaining an overall mortality rate, from all causes, of approximately 30% of fall population levels and remain stable. Estimated total mortality for the CIEPA during 2004 approached the level at which some wolf populations may no longer increase.

Dispersal

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. The number of dispersals recorded is an underestimate of true dispersal, as the Recovery Program can monitor only those wolves with radio-collars. Seven dispersal events for Idaho wolves were observed in 2004.

Male B117, the suspected alpha of the Gold Fork pack, was aerially located with the Orphan pack (male B116 and female B61) for the first time on 9 January 2004; B117 was presumed to be B116's father. B117 remained with them until 5 May 2004, at which time his radio-signal was no longer detected.

Female B141, now a 2-year-old, was born into the Scott Mountain pack. She separated from her natal pack in November 2003 and was accompanied by a black wolf in January 2004. She crossed to the south side of the South Fork of the Payette River and exhibited denning behavior in April 2004. She was subsequently observed with an adult gray wolf and 3 gray pups, establishing the Calderwood pack.

Table 3. Numbers and causes of documented and suspected wolf mortalities in the Central Idaho Experimental Population Area, 1995-2004.

Year	Cause of mortality						Suspected	Total
	Human-related				Natural	Unknown		
	Control	Illegal	Legal	Other				
1995	-	1	-	-	-	-	-	1
1996	1	-	-	-	2	-	1	4
1997	-	1	1	-	-	-	-	2
1998	-	3	-	1	-	5	-	9
1999	5	3	-	5	2	3	4	22
2000	10	8	-	2	1	2	-	23
2001	6	2	1	-	1	5	1	16
2002	14	4	-	1	2	4	3	28
2003	6	8	1	2	-	1	1	19
2004	30	11	-	6	-	6	1	54
Total	72	41	3	17	8	26	11	178

A report from a bear hunter in the spring led to the discovery of B147, a female missing from the Jureano Mountain pack since October 2003. The hunter observed a black, radio-collared wolf in the vicinity of Gabe Ridge southwest of White Bird, Idaho. The Recovery Program aerially searched for all missing black wolves in this vicinity on the next monitoring flight and located B147's radio-signal. She seemed to have restricted her movements since then and established a territory in this area.

Female B163, a subadult when captured with the O'Hara Point pack in 2003, dispersed a short distance to the north and founded the Coolwater Ridge pack. She was aerially located on the north side of the Selway River initially in January 2004, prior to breeding season. Monitoring during the spring indicated that she had probably denned, and subsequent ground tracking verified that she had produced her first litter of pups.

Partridge Creek male B181 was captured just before his dispersal from this pack. He was radio-collared in late January 2004 during helicopter capture operations, and then aerially located only once with other members of that pack. In February 2004 he was found on the north side of the main Salmon River near the mouth of Bargamin Creek, and he remained in this general area until October 2004; he has not been located since then.

B196, captured as a 9-month-old Morgan Creek pup in January 2004, was aerially located in the Sawtooth Valley during the summer. He spent some time in the Wood River drainage before returning to the Salmon River side of Galena Summit. Because the Galena pack inhabits the Sawtooth Valley, the Recovery Program believed that B196 wouldn't be able to establish a home range in this area, though it is possible that he could join the Galena pack. B196 has not been located since November 2004.

At the time of her capture in early August 2004, the Recovery Program believed that subadult female B218 was a member of the Monumental pack; she was trapped at a rendezvous site recently vacated by that pack. She was aerially located on the north end of Payette Lake (north of McCall, Idaho) within a few weeks, so she may have been dispersing at the time of her capture. Subsequently, B218 was located in the vicinity of Brundage Mountain and south along Red Ridge toward Cascade Reservoir.

A wolf from Wyoming, Y239 of the Washakie pack, was captured during a control action north of McCall, Idaho in late August 2004. His radio-signal was detected only 2 times in the area of his capture and was lost until mid-October 2004. At that time he was aerially located approximately 35 miles (56 km) to the east in the Frank Church-River of No Return Wilderness near Wolf Fang Peak. Subsequently, Y239 was observed with a black wolf 36 miles (58 km) farther east on the east side of the Middle Fork of the Salmon River.

Because wolves are capable of traveling long distances and locating mates, the animals dispersing from the CIEPA and other recovery areas are likely to provide founding individuals for neighboring states. Documented long-distance dispersals within the NRMRR, and between other areas of study in the Rocky Mountain chain, provide evidence that wolves in this region represent 1 continuous and connected population. At least 3 dispersing wolves have been documented in Oregon, one in Utah, one in Colorado, and one in Washington.

WOLF MANAGEMENT

Capture and Radio-collaring

Seventy wolf captures (67 in the Idaho portion and 3 in the Montana portion) were made in 2004 that resulted in the initial radio-collaring of 56 individuals and the re-collaring of 3 individuals within the CIEPA. Also, 2 adults that were recaptured did not have their radio-collars replaced, 2 wolves captured during a control action were euthanized, and 7 pups were not radio-collared because they were too small at the times of their capture (Table 4).

Ground trapping and darting occurred throughout the summer and yielded 43 captures from 23 different wolf groups. A pup from the Chesimia pack was ground darted in 2004; this is only the second time this technique has been successfully employed to capture a free-ranging wolf.

Helicopter capture, conducted in mid-January 2004, resulted in 27 captures from 10 packs. Eighteen wolves were caught by net-gunning, five were darted, and four were captured with a combination of darting and net-gunning.

The number of wolves monitored throughout the year varied from a high of 73, following the summer/fall trapping season, to a low of 55 in May 2004 (prior to the initiation of trapping). On average, 64 wolves were actively monitored each month. As of December 2004, the Recovery Program was monitoring 34 packs; 62 radio-collared individuals with known whereabouts (pack members, potential pairs, and dispersers), and searching for 17 missing wolves whose radio-collars should still be functional, including 7 whose last known locations were within the Montana portion of the CIEPA. Two wolves were not transmitting due to non-functioning radio-collars. In addition, 16 wolves were unaccounted for and their radio-collars have likely expired; at least 3 of those wolves were known to be alive, while the fates of the others were not known. Personnel from the Montana wolf recovery program were monitoring 2 other wolves in the CIEPA.

Livestock Depredation

Resolving wolf-livestock conflicts is one of the defining social challenges of wolf recovery. Livestock depredations by wolves are 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 in chronic problem areas. The original Final Rule, which governs the management of nonessential experimental wolves in the CIEPA, allowed agency control of wolves to resolve wolf-livestock conflicts. Under this Final Rule wolves could be harassed, relocated, or lethally controlled in response to confirmed depredations on livestock. The new 10(j) amendment increased management flexibility to more effectively address wolf-livestock conflicts by liberalizing conditions under which wolves could be taken on private and public lands. Despite these mitigating efforts, live-

Table 4. Numbers of wolves captured by helicopter and ground trapping in the Central Idaho Experimental Population Area, 1997-2004.

Year	Helicopter	Trapping	Total ^a
1997 ^b	6	5	11
1998	0	27	27
1999	5	25	30
2000	9	16	25
2001	13	17	30
2002	16	9	25
2003	14	32 ^c	46
2004	27	43 ^c	70
Total	90	174	264

^aIncludes recaptures of previously radio-collared wolves.
^bIncludes 4 wolf pups from the Boulder Pack in Montana outside of the CIEPA.
^cIncludes 1 wolf captured via ground darting.

stock 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.

Sixteen groups of wolves (packs, pairs, or individuals) were implicated in confirmed and/or probable depredations on livestock in the CIEPA during 2004; Battlefield, Bennett Mountain, Castle Peak, Chesimia, Cook, Copper Basin, Fox Creek, Gold Fork, Hazard Lake, Landmark, Jureano Mountain, Moyer Basin, Partridge Creek, Steel Mountain, and suspected lone/status unknown wolves B45/Y239 and B196. In addition, WS confirmed 4 instances of unknown wolves killing livestock. Confirmed wolf depredations on livestock in the Idaho portion of the CIEPA resulted in the outright deaths of 17 domestic cattle and 161 domestic sheep. Twelve sheep and 2 cattle were classified as probable wolf kills. As in 2003, most ($n = 85$, 53%) of the verified sheep losses in the Idaho portion of the CIEPA in 2004 were the result of multiple depredations by the Cook pack. Additional cattle and sheep were injured during wolf depredations and may have subsequently perished. Confirmed wolf depredations on livestock in the Montana portion of the CIEPA resulted in the outright deaths of 5 domestic cattle and 9 sheep; with 1 calf classified as a probable wolf kill. Twenty-four wolf packs, pairs, or individuals that used areas in common with livestock but were not implicated in confirmed and/or probable depredations were; Black Canyon (MT), Buffalo Ridge, Calderwood, Cold Springs, Eldorado, Florence, Galena, Grassy Top (MT), Hemlock Ridge, Landmark, Marble Mountain, Morgan Creek, O'Hara Point, Orphan, Packer John, Painted Rocks (MT), Red River, Sapphire (MT), Soldier Mountain, Timberline, Willow (MT), B127, B147, and B157.

Despite an increased level of sheep losses north of McCall, Idaho, during the past 2 years, the level of wolf-livestock conflicts overall has remained manageable in Idaho as annual numbers of livestock lost and livestock producers affected has remained fairly constant at relatively low levels (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 statewide. Since 1999, confirmed and probable livestock losses to wolves have averaged 20 cattle and 84 sheep per year, affecting an average of 16 producers per year in the Idaho portion of the CIEPA.

During 2004, 30 wolves were lethally controlled (17 in the Idaho portion and 13 in the Montana portion), 6 wolves were radio-collared and/or released on site in the Idaho portion of the CIEPA,

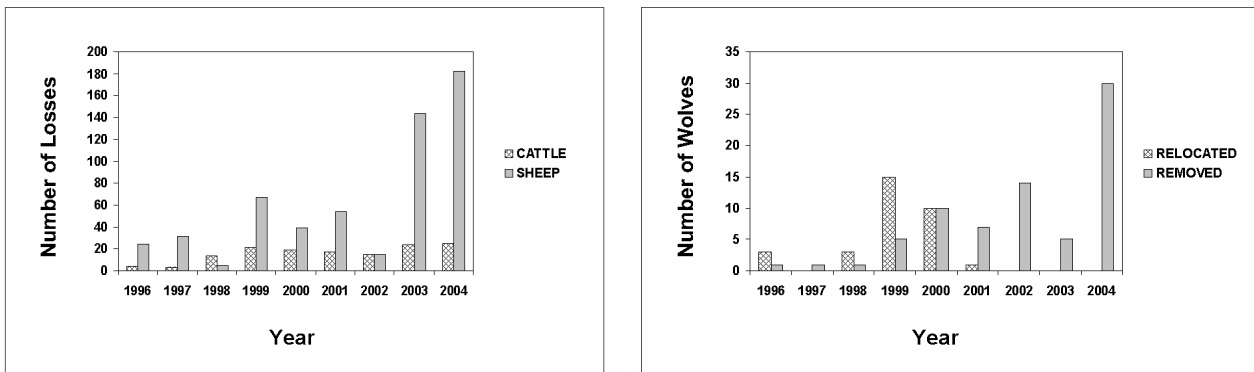


Figure 4. Numbers of confirmed and probable livestock losses and numbers of wolves managed in response to verified depredations in the Central Idaho Experimental Population Area, 1996-2004.

and none were relocated as a result of agency control in response to verified conflicts with livestock (Figure 4). Relocation, as a tool to minimize or prevent further depredations, was not employed in the CIEPA because wolves already occupied most suitable sites.

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 addition, Defenders of Wildlife provides monetary compensation to livestock producers for losses to wolves. Also, the State of Idaho, using federal funds, provides producers compensation for indirect losses not paid by Defenders of Wildlife. Wolf control and compensation for losses has generated tolerance and patience among many livestock producers.

Current levels of wolf mortality associated with agency control are not anticipated to adversely affect the Idaho wolf population. The 30 wolves lethally removed during agency control actions in 2004 accounted for 6% of the estimated CIEPA pre-mortality wolf population (unexploited).

Livestock Conflict Resolution

Wildlife Services, under a cooperative agreement with the USFWS, holds the primary responsibility to investigate and verify reported wolf depredation, and implement wolf control actions. The Recovery Program 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.

Proactive measures to minimize wolf-livestock conflicts have included radio-activated guard (RAG) boxes, fladry, hazing wolves, using less-than-lethal munitions, using additional guard dogs, purchasing hay or alternate pastures to separate wolves and livestock, modifying grazing patterns, and providing potentially affected producers with monitoring equipment. Used in sequence or combination, these non-lethal methods have proved 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 interactions.

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. In 2002, the State of Idaho initiated a compensation program using federal funds that addresses such indirect losses as reduced weight gain, lower pregnancy rates, and missing livestock that are difficult to verify.

Litigation

Case: Western Watersheds Project vs. Sawtooth National Forest, United States Court of Appeals, Ninth Circuit. No 03-35478, late 2003.

This case involved a complaint against the U.S. Forest Service and their alleged failure to properly complete National Environmental Policy Act analysis regarding livestock grazing in the Sawtooth National Recreation Area and the agency wolf control that might result because of livestock depredation. The court ordered the USFWS to withhold all lethal wolf control pending resolution of the issues. The case was resolved and the injunction against the USFWS expired.

Case: National Wildlife Federation et al. vs Gale Norton et al., United States District Court of Vermont, Civil No. 1:03-CV-340.

This case involved the April 2003 reclassification of the gray wolf to threatened status and the USFWS' establishment and listing of 3 gray wolf Distinct Population Segments (DPS) [Eastern, Western and Southwestern]. This litigation was ongoing but primarily involved the Eastern DPS, and claimed the USFWS should have established a fourth DPS for the northeastern United States.

Case: Defenders of Wildlife et al. vs. Gale Norton et al., United States District Court of Oregon, Civil No. 03-1348 JO.

This case also involved the April 2003 reclassification of the gray wolf, the USFWS' establishment and listing of 3 gray wolf DPS (Eastern, Western and Southwestern), and the special 4(d) rules within the Western and Eastern DPS. This litigation primarily involved the Western DPS. Oral argument was heard in Portland, Oregon, on 19 January 2005. On 31 January 2005, the U.S. District Court in Portland, Oregon, issued a decision that apparently reversed the USFWS' April 2003 reclassification of the gray wolf to threatened status throughout the northern U.S. and eliminated all 3 DPS and the 4(d) rules that authorized problem wolf management. Under that ruling wolves outside the nonessential experimental areas are now considered endangered and will be managed according to the rules in place prior to April 2003. This court order eliminated the special 4(d) rule that allowed landowners outside of the nonessential experimental areas in the northwestern U.S. to legally kill or harass wolves that were seen physically attacking their livestock and dogs on their private land. No wolves had been taken under those provisions in the nearly 2 years they had been in effect. As a result of the court order, wolf control outside the experimental population areas can only be implemented by the USFWS or its designated agents. Outside the experimental population areas private citizens cannot harm or kill wolves. The USFWS is consulting with Department of Justice attorneys to analyze the court's order and weigh legal options and potential remedies.

Case: State of Wyoming, et al. vs. United States Department of the Interior, et al., United States District Court for the district of Wyoming, Civil Action No. 04CV01123J.

This case involved the USFWS not approving Wyoming's state wolf management plan. The case was expanded by interveners to include alleged failure to properly manage wolves in Wyoming and failure to conduct additional National Environmental Policy Act compliance. A related legal issue between Wyoming and the Department of the Interior involved Freedom of Information Act issues about the USFWS' withholding of certain internal documents because they were related to internal deliberations and attorney-client privilege. Oral arguments for the Wyoming state wolf plan case were scheduled to be heard in Wyoming District Court on 4 February 2005.

Case: State of Wyoming vs. Michael D. Jimenez, United States District Court for the District of Wyoming, Case No. 04-CR-98J and State of Wyoming vs. Michael D. Jimenez, United States Court of Appeals for the Tenth Circuit.

This case involved Park County, Wyoming, allegations that a USFWS biologist violated state law by trespassing and littering (leaving immobilized radio-collared wolves) on private property during a routine wolf capture and radio-collaring operation near Meeteete, Wyoming, in early 2004. The District Court ruled that Mr. Jimenez was immune from such state charges because he was only carrying out his official duties as a federal employee. Wyoming appealed to the 10th circuit court and the matter is still under consideration.

RESEARCH

The Recovery Program continued to support research to benefit future wolf management. Studies investigating wolf den-site characteristics and wolf-livestock conflicts and management were concluded in 2004. In addition, a literature review and questionnaire of worldwide wolf censusing techniques provided the groundwork for a grant that will evaluate, test, and implement those techniques that may have application in the NRMRR.

Nine research studies have been initiated in Idaho since 1999. Two addressed winter predator-ungulate relationships, one examined den ecology, four dealt with wolf-livestock interactions, and one analyzed wolf survival in the NRMRR. The studies detailed below were in progress or in the planning stage during 2004.

Literature Review of Worldwide Wolf Monitoring Techniques.

Principal Investigators: Curt Mack (Tribe), Kyran Kunkle (Montana State University), and Wayne Melquist (University of Idaho).

Cooperators: IDFG and the USFWS.

The investigators worked to synthesize the current worldwide state of knowledge regarding wolf monitoring techniques. This effort included a review of published and grey literature, as well as a questionnaire survey designed to collect unpublished information from current wolf managers. Results of the literature reviews and questionnaire are being analyzed. This was the initial stage of, and will provide the foundation for, a proposed research study to develop post-delisting monitoring protocols for wolves in Idaho. Results of this study will also be useful to other states developing wolf survey and monitoring protocols.

Developing Monitoring Protocols for the Long Term Conservation and Management of Gray Wolves in Idaho.

Principal Investigators: Curt Mack (Tribe).

Cooperators: IDFG and the USFWS.

The Tribe received a grant from the USFWS' Tribal Wildlife Grants Program to fund the following proposed research, which will be an extension of the literature review described above.

As part of the USFWS' efforts to restore endangered populations of gray wolves to the northern Rocky Mountains of the conterminous United States, 35 wolves were reintroduced into Idaho during 1995 and 1996. The Tribe has supported wolf recovery efforts, in part, because of the cultural and religious significance of this species. The Tribe, working through a cooperative agreement with the USFWS, has been charged with the responsibility of monitoring and documenting the status of the recovering wolf population in Idaho. Wolves in the northern Rocky Mountains have recovered more rapidly than anticipated and the USFWS is intending to initiate the delisting process in the future.

To date, wolf population estimation has relied on time intensive and expensive radio telemetry techniques. Although this approach worked well with initial small population sizes, these techniques are no longer appropriate or cost-effective given the current, much larger recovered population size and nearly statewide distribution.

The Tribe, USFWS, and State of Idaho are interested in a collaborative partnership effort to develop a less intensive and more cost-effective approach for estimating wolf population numbers across the varied landscapes of Idaho. We are proposing a 3.5-year research effort to develop standardized protocols for estimating wolf population parameters appropriate for meeting post-delisting monitoring and management needs.

Standardized monitoring protocols will be important in satisfying the USFWS' 5-year post-delisting monitoring requirements and is crucial to insure sustainability of the population through effective post-delisting conservation and management of wolves. Results of this effort will also be useful to other states, particularly Montana and Wyoming, developing monitoring protocols for wolves across the northern Rocky Mountains.

Survival of Colonizing Wolves in the Northern Rocky Mountains of the United States, 1982-2004.

Investigators: Douglas W. Smith (Yellowstone Center for Resources), Dennis Murray (Trent University), Edward E. Bangs (USFWS), Curt Mack (Tribe), John Oakleaf (University of Idaho), Joe Fontaine (USFWS), Diane Boyd (Teller Wildlife Refuge), Michael Jimenez (USFWS), Daniel Pletscher (University of Montana), Carter Niemeyer (USFWS), Thomas J. Meier (USFWS), Daniel Stahler (Yellowstone Center for Resources), and Jim Holyan (Tribe).

The main hypothesis of this study was that wolf survival would not be equal among the 3 recovery areas – central Idaho (CI), northwest Montana (NWMT), and the Greater Yellowstone Ecosystem (GYE) – and that this difference would be due to land status/ownership (e.g., park, wilderness, private, etc). We expected these differences because the CI and GYE recovery areas had large, core, protected areas either in wilderness or national park status that reduced wolf-human conflicts and reduced mortality. No such area in NWMT existed, as a large wolf population did not reside in GNP and many packs lived on or close to private land.

Another objective of this study was to determine where management attention was warranted by the USFWS before delisting to facilitate transfer to the state governments, and ensure that survival was high enough to assure wolf population subsistence into the foreseeable future – a requirement for state management post-delisting. Other objectives were to analyze demographic, behavioral, and habitat factors important to wolf survival. Results of these analyses would be used in future management decisions.

From 1982 through 2002, 478 wolves were collared in the 3 recovery areas; 263 of these died, while the other wolves were still alive at the end of data collection. Number of wolves collared in each area was 188, 138, 152 for GYE, CI, and NWMT, respectively. Average annual survival for all wolves was 0.73. Annual survival by recovery area was 0.80 for GYE, 0.79 for CI, and 0.56 for NWMT. Northwest Montana had the lowest survival of the 3 recovery areas all years studied. Annual survival varied from 0.37 for NWMT in 1987 and 2000 to 1.00 for Idaho in 1997. Survival for the GYE and CI was most similar all years except for 1997 where survival for the GYE was lowest for any year (0.62) but the highest of any year for Idaho (1.00).

Overall, males survived at a slightly lower rate (0.70) than did females (0.74). Overall survival increased by age class, but this was not consistent by recovery area. Alpha wolves survived at a slightly higher rate (0.80) than did subordinates (0.73). Breeders, which were typically, but not always alphas, survived at a higher rate (0.79) than non-breeders (0.71). Resident wolves survived at a much higher rate (0.75) than did wolves that were dispersing (0.60). Wolves living in larger packs had a higher survival rate.

The leading cause of death for all wolves in all areas was human-caused mortality. Of 263 wolves that died, 174 (67%) deaths were human-caused. The leading human mortality factor was agency lethal control (26%), followed by illegal take (23%), and then other human mortality sources (17%; vehicles, capture mortalities).

After human-caused mortality, intraspecific and interspecific killing were the leading causes of death. Mortalities due to unknown causes averaged about 10% for the GYE and CI, but for NWMT were over 25% of the sample.

Analyses for 2003-2004 have not been completed at this time.

Statewide Elk and Mule Deer Ecology

Principal Investigators: IDFG

During 2005, IDFG will begin conducting research on elk and deer, specifically looking at ecological factors and impacts that help predict ungulate population performance. The research will analyze the impacts of large carnivores, including wolves, on the performance of elk and deer populations within several study areas across the state. Other variables analyzed will include habitat, ecological region, weather events, and hunting. Research will be conducted over several years to monitor changes in populations, variables, and impacts.

WOLF RECOVERY, INTERIM MANAGEMENT & DELISTING

In the NRMRR, 2004 marked the fifth consecutive year that 30 or more breeding pairs of wolves were documented. Wolves in the northern Rockies are biologically recovered. In 2004, an estimated 835 wolves and 66 breeding pairs inhabited the NRMRR.

Prior to proposing delisting, the USFWS is mandated to examine 5 broad threat factors and determine that they no longer are likely to threaten species viability. For wolves, regulating the level of human-caused mortality is the primary threat factor that must be resolved before delisting can be

proposed. The ESA requires the USFWS to determine that adequate regulatory mechanisms, other than the ESA, are in place to prevent unchecked human-caused mortality from once again driving wolves toward extinction. State fish and wildlife management agencies typically regulate wildlife mortality. The USFWS requested that Idaho, Montana, and Wyoming develop state wolf management plans so that wolves would be adequately conserved under state management. State laws, as well as state management plans, must be consistent with long-term conservation of the wolf population.

Idaho, Montana, and Wyoming completed their respective state wolf plans by September 2003. The plans were sent out for review to 12 North American wolf management and research experts. Their comments were provided to the states, giving them the opportunity to modify their plans based on the reviewers' remarks. After further review at the Regional and Washington D.C. levels, recommendations were provided to the Director of the USFWS on each plan's acceptability as an adequate regulatory mechanism.

Idaho's wolf management plan was deemed adequate as a regulatory mechanism to maintain a recovered wolf population, assuming step-down planning followed through on the plan's overall policy commitments. Montana's wolf management plan was adequate as a regulatory mechanism to maintain and conserve a recovered wolf population. Wyoming's unique and complex proposed regulatory framework, and the vague direction provided by Wyoming law, did not assure the USFWS that Wyoming's plan would conserve wolves at or above a recovered level in Wyoming, and was therefore rejected by the USFWS. The USFWS will not propose that the wolf population be delisted in the NRMRR until Wyoming state laws and their state plan can assure that Wyoming's portion of the NRMRR wolf population will remain secure without ESA protections.

As an interim measure, the USFWS developed and adopted the new 10(j) amendment for wolves within the nonessential experimental population areas. This new 10(j) amendment, which took affect in early February 2005, liberalized conditions under which wolves could be legally taken and provided opportunities for states and tribes to petition for increased management authority prior to delisting. Under the 10(j) amendment, the USFWS could transfer increased management authorities for wolves to those states and tribes with approved wolf management plans, currently Idaho and Montana, and provide increased management flexibility to address wolf conflicts with livestock, pets, and big game populations. Wolf management in Wyoming would continue to be overseen by the USFWS.

The Tribe and the State of Idaho share a mutual interest in the long-term conservation and management of wolves in Idaho. During 2003, the State of Idaho and the Tribe began negotiations to develop a Memorandum of Agreement that, if adopted, would commit both governments to work cooperatively towards the conservation and management of wolves, provide agreement and understanding on shared roles and responsibilities across the state, outline joint efforts for securing needed funding, and provide guidelines for managing future harvest of wolves. This Memorandum of Agreement would take affect upon adoption prior to delisting and remain in affect after delisting. Completion of this Memorandum of Agreement is anticipated in early 2005.

IDAHO WOLF PACKS

Battlefield (Montana)

In 2004, 3 wolves were captured and radio-collared in the Big Hole Valley within the Montana portion of the CIEPA. Subsequently, 4 pups were documented. Wolf occupancy of the Big Hole Valley in the past has led to repeated conflicts with livestock, and the Battlefield pack was no exception. In mid-September 2004, 3 individuals of the 15-member pack were lethally controlled, and another two were removed in October 2004. The Battlefield pack was a breeding pair in 2004, and was retroactively counted as a breeding pair for 2003, as well.

Bear Valley

The Bear Valley pack was composed of the alpha pair, 4 subadults, and 5 pups. Two wolves, suspected alpha male B214 and female B215, were captured and radio-collared in July 2004. B214's radio-signal was detected on mortality mode during a monitoring flight in November 2004; he was illegally shot and an investigation is underway. The Bear Valley pack was not a breeding pair for 2004 due to the loss of the alpha male. They were retroactively counted as a breeding pair for 2003. These wolves were first located at a traditional rendezvous site of the uncollared Landmark pack and inhabited Landmark's known territory. However, none of the wolves observed matched the description of known Landmark individuals and concurrent wolf activity was observed near Landmark's 2003 rendezvous site. Future investigation should determine if there were distinct Bear Valley and Landmark packs.

Bennett Mountain

Three wolves were lethally controlled in March and May 2004, and a fourth was believed to have been mortally wounded, following a series of depredations on both cattle and sheep northeast of Mountain Home, Idaho. Despite hearing other wolves howling while retrieving the carcasses of the controlled animals, 2 subadults and 1 adult, no evidence of reproduction was documented in 2004. In addition, female B199 was radio-collared and released during the control actions. She was observed from the air several times, but was never seen with other wolves. A report of 4-5 wolves was received in early December 2004 from this area. This newly documented pack was not considered a breeding pair in 2004, and was retroactively added as a 2003 reproductive pack based on the presence of multiple wolves, including subadults.

Big Hole

The Big Hole pack produced a minimum of 2 black pups in 2004. Former alphas, male B7 and female B11, the founders of this pack in 1996, were still present, though their social status within the pack was unknown for 2004. The pack was estimated to be at least 10 members strong. This pack qualified as a breeding pair in 2004.

Black Canyon (Montana)

Three wolves were sighted by Recovery Program personnel from an airplane in May 2004, although no pups were observed at that time, which would not be unusual, and no further indication of reproduction was obtained. There were consistent reports from residents of the Horse Prairie region of 4 wolves during autumn 2004. The Black Canyon pack was not a breeding pair for 2004.

Buffalo Ridge

Alpha male B93 was seen with a severe leg injury in the spring, at which time he was submissive to an uncollared wolf, so there may have been a change in his dominance rank within the pack. Two to 3 gray pups were observed near the den site in the spring. Seven gray individuals were seen during November and December 2004 monitoring flights, including one with a noticeable limp, possibly B93. The pack was located in the East Fork of the Salmon River drainage in December 2004, outside of their normal home range. The Buffalo Ridge pack was a breeding pair for 2004.

Calderwood

Female B141 dispersed from the Scott Mountain pack to found the Calderwood pack just south and across the South Fork of the Payette River from her natal territory. She was seen with an uncollared black wolf after separating from her Scott Mountain pack mates in November 2003. Aerial monitoring in April 2004 indicated that she probably was denning. Recovery Program biologists observed B141, her gray mate, and 3 pups in mid-June 2004. This first year pack achieved breeding pair status for 2004.

Castle Peak

Alpha male B2 died in February 2004 at the estimated age of 13+ years, which made him one of the oldest known wild wolves on record. One of his 2003 offspring, male B195, was captured in January 2004 but soon thereafter his signal disappeared, leaving no radio-collared members of this pack. In May 2004, an inspection of one of this pack's 2003 rendezvous sites indicated that it had not been used at that time, and further investigations did not locate these wolves. Tracks of 4-6 wolves were reported after the first snowfall in late October 2004, at which time 3 gray individuals were also seen. Unless the pack was separated at this time, the number of tracks observed would indicate that the pack did not reproduce, or pups did not survive, in 2004. The Castle Peak pack was not a 2004 breeding pair.

Chamberlain Basin

The traditional den site for the Chamberlain Basin pack was not used for the first time since 1997. This might mean that the alpha female, B16, part of the initial group of wolves translocated to Idaho in 1995, was no longer present and a new breeding female selected an alternate den site.

Tracks and scats found throughout the home range indicated that wolves were still present, although no wolves were captured during trapping efforts and no evidence of reproduction was obtained. This pack did not attain breeding pair status in 2004.

Chesimia

A pup was captured and radio-collared during a control action south of Elk River, Idaho, in August 2004. A second pup was ground darted by a Recovery Program biologist 2 weeks later. At that time it was determined that this pack consisted of the alpha pair and 4 gray pups. The newly documented Chesimia pack was considered a 2004 breeding pair.

Cold Springs

In 2004 the first pack was documented on the west side of the Salmon River. A sighting of 4 pups, 2 blacks and 2 grays, by a county sheriff led the Recovery Program to a rendezvous site. The suspected alpha female, B206, was captured and radio-collared, along with 3 of the pups, although they were too small to be fitted with radio-collars. A large gray wolf, the presumed alpha male, was observed within 1 mile of the rendezvous site, but efforts to capture him were unsuccessful. This first year pack was a breeding pair for 2004.

Cook

Three additional wolves from the Cook pack were radio-collared during helicopter capture operations in January 2004, bringing the total number of radio-collared animals in the pack to 4. During a subsequent monitoring flight 13 wolves were observed. Like 2003, this pack depredated as soon as livestock became available in their territory. Five confirmed and probable depredation events on domestic sheep occurred, that resulted in the death, wounding, or loss of 90 animals. Nine members of the Cook pack were lethally controlled in July 2004 after the Recovery Program exhausted all methods of non-lethal deterrence while cooperatively working with affected livestock operators. No evidence of pups was documented prior to the lethal removals. The Cook pack was not a breeding pair for 2004.

Coolwater Ridge

Dispersing female B163 established a territory on Coolwater Ridge, which is situated between the Selway and Lochsa Rivers. B163, from the nearby O'Hara Point pack, left her natal pack in early January 2004, secured a mate, and produced her first litter in 2004. The pups were not seen due to thick vegetation at the rendezvous site, but based on howling the Recovery Program estimated a minimum of 3 pups, making this first year pack a breeding pair during 2004.

Copper Basin

In winter 2003, wolf presence was verified in Copper Basin when Recovery Program personnel located multiple sets of wolf tracks. In late August 2004, a confirmed depredation on cattle led to the capture and radio-collaring of the heaviest wolf processed in Idaho to date; suspected alpha male B224 weighed 125 pounds. Subsequent ground and aerial observations indicated 9 wolves were in this pack, including at least 2 pups. Five depredations were attributed to the Copper Basin pack, resulting in the deaths of 4 cattle and injuries to 2 others. This pack was a breeding pair for 2004, and was retroactively counted for 2003, as well.

Eagle Mountain

B136 and his uncollared mate produced their second litter of pups in 2004. A minimum of 3 pups was observed near the den site, which was located in a tributary of the Lochsa River. This second year pack was a 2004 breeding pair.

Eldorado

Wolf activity was again verified in the Eldorado pack's home range, but attempts to capture wolves and determine their reproductive status were unsuccessful. Last year's rendezvous site was investigated on 3 separate occasions during 2004 without any evidence of pups being observed, although 2 adults were heard howling there in early June 2004. Subsequent surveys located wolf sign throughout the suspected area of use by this pack, but no evidence of reproduction was obtained. The Eldorado pack was not considered a breeding pair in 2004.

Five Lakes Butte

Two wolves from the Five Lakes Butte pack, females B212 and B213, were radio-collared in July 2004. In September 2004, a minimum of 3 gray pups was observed. Nine gray wolves were photographed near Simmons Peak during the fall hunting season, affirming the Recovery Program's estimate of 10+ members in this pack. The Five Lakes Butte pack qualified as a breeding pair for 2004.

Florence

Three members of this second-year pack were captured and radio-collared in mid-June 2004 after the location of their rendezvous site was discovered via howling surveys. Seven to 8 gray pups were seen, and a minimum of 4-6 adults was estimated based on howling. Fifteen gray wolves were seen from the air during the November 2004 monitoring flight. The Florence pack, which was involved in 3 confirmed depredations on sheep in 2003, was implicated in a single depredation in December 2004. This pack was a 2004 breeding pair.

Fox Creek (Montana)

All 8 members of this pack were lethally controlled in early 2004 due to depredations on domestic cattle. The alpha pair and 5 of their 6 pups from the 2003 litter were removed in January 2004, and the remaining 11-month-old pup was taken soon after. This pack, first documented in 2003, did not qualify as a breeding pair in 2004.

Galena

Female B107 produced her second litter, consisting of 3 pups, in the Sawtooth Valley. Yearling B167 died in 2004, possibly the result of a trapping accident. Because of past interactions with livestock, wolves in this area have been repeatedly lethally controlled or relocated to other areas of the state. To date, the Galena pack has not been implicated in the loss of any livestock, although they were confirmed to have killed 1 sheep-guarding dog and injured another. This pack was a breeding pair for the second time in 2004.

Gold Fork

Reproduction was verified for the Gold Fork pack when the natal den was discovered in early May 2004. Alpha female B130, the sole radio-collared wolf in the pack, produced her first litter of 3 black pups. This pack was implicated in a single depredation on sheep in 2004. The Gold Fork pack was a breeding pair for 2004.

Golden Creek

With the assistance of University of Idaho researchers located at Taylor Ranch within the Frank Church-River of No Return Wilderness, Recovery Program biologists radio-collared members of this newly documented pack. Two wolves, female B203 and male B204, were captured in June 2004. Two gray pups were observed, qualifying the Golden Creek pack as a 2004 breeding pair. Based on the number of subadults present, this pack was retroactively counted as a 2003 breeding pair as well.

Gospel Hump

Contact with both radio-collared wolves, 2-year-old females B138 and B139, was lost during 2004, making monitoring of this pack difficult. Prior to B139's disappearance, Recovery Program personnel were able to track her to a rendezvous site and determine that 4 pups had been produced. She was shot during hunting season, within her normal home range, and it was learned at that time that her radio-collar had previously malfunctioned. Female B50, the former alpha female, was not seen in 2004, and evidence indicated that only 2-3 adults were present. This pack may have split into 2 potential breeding units. Because B139, suspected alpha female, died, the Gospel Hump pack was not considered a breeding pair during 2004.

Grassy Top (Montana)

Evidence suggested that at least 2 wolves inhabited this area southwest of Monida Pass. No pups were documented, so this group was not a breeding pair for 2004.

Hazard Lake

Members of this pack again depredated on domestic sheep that entered their territory in 2004, leading to 2 control actions. Alpha male B105 and 2 yearlings, females B182 and B185, were lethally removed in late August 2004. Recovery Program personnel believed that at least 1 uncollared adult, probably the alpha female, and B183 remained, in addition to 2004's pups. An estimated 5 pups were present based on howling, although only 3 were actually observed. Because B105 was lethally controlled, this pack did not qualify for breeding pair status in 2004.

Hemlock Ridge

Two wolves from this pack, including the only radio-collared individual, were illegally killed in 2003, making monitoring of this pack difficult. Fortunately for the Recovery Program in 2004, the pack used a rendezvous site located in the same area where they dened last year. A U. S. Forest Service employee reported wolf activity there in July 2004, enabling Recovery Program biologists to document 3-4 gray pups. In addition, subadult female B207 and probable alpha male B210 were captured and radio-collared. The Hemlock Ridge pack was a breeding pair during 2004.

Jureano Mountain

Following the disappearances of all radio-collared wolves by early summer 2004, Recovery Program personnel had difficulty determining the status of this long-standing pack. A pup, B223, was trapped and radio-collared in late August 2004, confirming reproduction. Subsequent investigations determined that a minimum of 3 pups was present. In late September 2004, 2 more wolves were captured, females B225 and B226, bringing the total of radio-collared wolves to 3. Alpha male B106's radio-signal was not detected after August 2004, but in December 2004 it was determined that his radio-collar was malfunctioning and that he was still with the pack. The Jureano Mountain pack was a breeding pair for 2004.

Kelly Creek

The radio signal of female wolf B42, the sole radio-collared member of this pack, was detected on mortality in late April 2004. An effort was made to investigate in late May 2004, but high flows in Kelly Creek prevented access to the scene. Fortunately the radio-collar continued working until the site could be reached and B42's remains were recovered. At least 2 wolf pups were heard howling at a rendezvous site used by this pack since 2002. B220, possibly the alpha male, was trapped and radio-collared in August 2004 on Weitas Ridge. The Kelly Creek pack was a 2004 breeding pair.

Landmark

With the premature failure of alpha female B91's radio-collar in 2003, the sole radio-collared member of the Landmark pack, the Recovery Program had a difficult time monitoring this pack. The traditional den site, used since 2000, was investigated in early June 2004. Wolves did not den there, but there was track and scat evidence to indicate that the pack was using the area. Examination of rendezvous sites previously used by this pack also showed wolf activity, but the presence of pups was not verified, therefore the Landmark pack was not considered a breeding pair in 2004 (See *Bear Valley*).

Lupine

Male wolf B79's radio-signal was detected on mortality in late January 2004. B79 roamed widely prior to his death, and his mortality location was in an area where he had previously not been located. Without any other radio-collared wolves to monitor in this pack, the Recovery Program was unable to determine pack and reproductive statuses for these wolves. The Lupine pack was not a breeding pair in 2004.

Magruder

Five gray pups were observed at a rendezvous site in the Sabe Creek drainage in July 2004. A second wolf, female B219, was captured, joining suspected alpha male B110 as radio-collared members of this pack. For an unknown reason B110's radio-signal was not detected during monitoring flights after July 2004, although his radio-collar appeared to be working normally when biologists located the pack's rendezvous site. A visual of 10 gray wolves was made during the November 2004 monitoring flight. Breeding pair status was achieved in 2004 by the Magruder pack.

Marble Mountain

Contact with the Marble Mountain pack was regained in 2004 with the captures and radio-collaring of male B216 and female B217. The Marble Mountain pack was last monitored in 2002 when they were located on the north side of Dworshak Reservoir; a shift from their namesake area. Recovery Program biologists quickly investigated a sighting report made by U. S. Forest Service personnel and organized a capture effort. In addition to the 2 adult-sized wolves, 2 pups were also caught, although they were too small to be radio-collared. Observations indicated that there were likely just 2 pups, thereby making this pack a breeding pair for 2004.

Monumental Creek

Following a report of wolf activity in the Monumental Creek drainage, the Recovery Program was able to document the presence of pups at a den site previously used by the Thunder Mountain pack. The Monumental Creek pack used this site for a rendezvous in 2003 and 2004. A minimum of 3

pups and 3 adults was heard howling, and a subadult female, B218, was trapped and radio-collared there. B218 soon dispersed from the area and was subsequently located north of McCall, Idaho; she may not have belonged to the Monumental Creek pack. This pack was a breeding pair during 2004.

Morgan Creek

A minimum of 2 pups was documented in the Camas Creek drainage within the Frank Church-River of No Return Wilderness. Yearling male B196, one of 3 wolves radio-collared during helicopter capture efforts in January 2004, dispersed in April 2004, and has since been located in the Sawtooth Valley. An adult wolf, B228, was captured by a coyote trapper in November 2004 and radio-collared by the Recovery Program, bringing to four the number of radio-collared wolves being monitored in this pack. The Morgan Creek pack was a breeding pair in 2004.

Moyer Basin

Moyer Basin pack alpha male B97's signal was last heard reliably in October 2003, so the status of this individual was unknown during 2004. An unusual radio-signal, at B97's frequency, was heard on 2 occasions in the East Fork of Moose Creek, a tributary of the Selway River, far to the north of the Moyer Basin pack territory. The Recovery Program has been unable to verify whether this signal belonged to B97 or another source. At least 4 pups were present in mid-June 2004 at a rendezvous site, along with 2-year-old female B140 and alpha female B145. B140 was illegally shot in September 2004; USFWS Law Enforcement is investigating. Breeding pair status was achieved by the Moyer Basin pack for 2004.

O'Hara Point

The O'Hara Point pack produced its second documented litter of pups in 2004. Suspected alpha male B111 and yearling male B162 remained as radio-collared individuals, following the dispersal of female B163. Four black pups were observed in mid-June 2004 near the presumed natal den site. During a capture effort in late August 2004, a dead pup was recovered from a rendezvous site; the carcass was sent to the National Fish and Wildlife Forensics Laboratory to determine the cause of death. Because a minimum of 3 pups remained, the O'Hara Point pack was a 2004 breeding pair.

Orphan

This pack, composed of alpha pair B61 (female) and B116 (male), was joined by B117 in January 2004. B117 was likely B116's father and both were originally members of the neighboring Gold Fork pack. B117 was not located after 5 May 2004, and may have disassociated from the pack. In late May 2004, B61 was tracked to her den near Horsethief Reservoir, where 4-5 black pups were observed. That same day B116's radio-signal was detected on mortality. His carcass was located the next day in a pasture near Cascade, Idaho. An investigation by USFWS Law Enforcement

agents determined that B116 had been illegally shot; fines were levied against 2 individuals. This was the first time that B61 had given birth to more than a single pup, and the loss of her mate put the survival of this litter in jeopardy. In early June 2004 a second adult wolf was present at a rendezvous site, possibly the lone pup from 2003, making B61's pup-rearing chores somewhat easier. Due to the loss of the alpha male the Orphan pack was not a breeding pair for 2004.

Packer John

Reports from the public and a livestock operator in the area aided the Recovery Program in documenting this first-year pack. Alpha female B205 was radio-collared near where 3 gray pups had been observed a few days earlier. Subsequent sightings indicated that 2 black pups were also present. Despite the presence of domestic sheep near the den site, no depredations were reported. The Packer John pack was a 2004 breeding pair.

Painted Rocks (Montana)

A sighting by a U. S. Forest Service biologist during the fall hunting season verified wolf occupancy and reproduction in the West Fork of the Bitterroot River drainage. He observed 6 individuals, 2 adults and 4 pups. These wolves were a breeding pair for 2004.

Partridge Creek

Recovery Program personnel radio-collared B172 in 2003 during a control action in what was believed to involve the Hazard Lake pack. During the January 2004 helicopter capture operations, 2 wolves accompanying B172 were radio-collared, suspected alpha female B180 and male B181. In March 2004, B172's radio-signal went on mortality, and it was discovered that pack mates had chewed off his radio-collar. Locations for B180 during April 2004 indicated that she was probably at a den site in a tributary to the main Salmon River. Pup production was verified in late July 2004 when 6 gray pups were seen at a rendezvous site in the French Creek drainage. Two confirmed depredations on domestic sheep were attributed to the Partridge Creek pack during the livestock-grazing season. Control actions led to the lethal removal of 2 members of this pack in late July 2004. Hazard Lake pack wolves were also in the vicinity at that time, but based on the more certain knowledge of that pack's make-up, it was likely that the wolves that were killed belonged to the Partridge Creek pack. B181 dispersed from the pack in February 2004 and has been located at the mouth of Bargamin Creek, approximately 36 miles (58 km) from the pack's main rendezvous site. The suspected alpha male of the Partridge Creek pack, B211, was captured and radio-collared in mid-July 2004. B211 was illegally shot in early November 2004 and USFWS Law Enforcement is conducting an investigation of this wolf's death. Due to B211's death, the Partridge Creek pack was not considered a breeding pair for 2004.

Red River

One of the 3 pups captured and radio-collared in 2003, male B165, was illegally shot near Elk City, Idaho, in late April 2004, when they had shown signs of localizing at a den site. Despite intensive efforts to determine the reproductive status of this pack, no pups were found and only 3-4 wolves could be accounted for throughout the summer. In September 2004, the Recovery Program received a report of what was estimated to be at least 8 wolves, including pups, heard howling near the Red River Wildlife Management Area. Another investigation of the area failed to provide evidence of reproduction, so the Red River pack was not counted as a breeding pair in 2004. An un-collared black wolf was found dead by hunters in this pack's territory in late October 2004; its death is under investigation.

Sapphire (Montana)

Three pups were documented, confirming reproduction for the first time for this pack, even though it was believed they had reproduced in 2003. The Sapphire pack was a breeding pair for 2004.

Scott Mountain

Three additional members of the Scott Mountain pack, all pups, were radio-collared during January 2004 helicopter capture operations. The alpha pair, male B115 and female B78, has been radio-collared since 2001. Female B141 dispersed in November 2003 and subsequently founded the Calderwood pack. Subadult male B179 was killed in October 2004; USFWS Law Enforcement is conducting an investigation. Four gray pups were seen at a rendezvous site used since 2001, which qualified the Scott Mountain pack as a 2004 breeding pair.

Selway

After a wildfire burned very near the traditional den site in 2003, the Recovery Program waited to see if the pack would continue to use this area in 2004. The den area was not used and aged male B5, the only radio-collared wolf in this pack, did not lead biologists to pups. B5 was observed in June 2004 in the company of 2 other wolves, but no evidence of reproduction was detected, and the movements of B5 did not indicate that he might be visiting a rendezvous site. B5's radio-signal was detected on mortality mode during an October 2004 monitoring flight and shortly thereafter a USFWS Law Enforcement agent investigated the scene. B5 had been dead for several weeks, so no cause of death could be determined at the site. The remains were sent to the National Fish and Wildlife Forensics Laboratory for necropsy. B5 was the last of the original wolves translocated from Canada that was being actively monitored. At the time of his death he may have been 12.5 years old. The Selway pack was not a breeding pair in 2004.

Soldier Mountain

Two of this pack's pups were net-gunned during January 2004 helicopter capture efforts, bringing the number of radio-collared individuals to four. Three black and 2 gray pups were documented, therefore this second-year pack was a breeding pair for 2004.

Steel Mountain

Steel Mountain pack alpha male R241, who immigrated to the CIEPA from the Greater Yellowstone Recovery Area, and his pack mates were implicated in 4 confirmed depredations on domestic sheep in the Middle Fork of the Boise River drainage in 2004. The pack denned in the same area as 2003, where 3-4 pups were observed. During a control action in August 2004, a pup was captured, although it was not radio-collared. The Steel Mountain pack was a breeding pair in 2004.

Thunder Mountain

Sporadic reports of wolf activity indicated that wolves probably still occupied the Thunder Mountain pack's territory. Recovery Program personnel found wolf tracks and scats throughout this pack's home range, but investigations of all previously known rendezvous sites failed to document reproduction. This pack was not considered a breeding pair for 2004.

Timberline

As in 2003, wolf pack status east of Idaho City, Idaho, remained unclear. Two wolves, male B155 and female B158, were radio-collared in 2003, but B158 was illegally shot, leaving only 1 radio-collared wolf in this area. Prior to 2004 helicopter capture operations, B155 was observed in the company of 4 other wolves, providing hope that additional wolves could be outfitted with radio-collars helping to clarify wolf activity in this area. But on the day this group of wolves was targeted for capture, B155 was alone. Aerial monitoring did not locate B155 from April to August 2004, adding to the difficulty in determining the number and status of wolf packs. In June 2004, wolf activity was verified in the Pikes Fork region, but unlike 2003 no wolf sign was detected in the Rabbit Creek drainage. In September 2004, B154, a wolf that was trapped twice as a pup in 2003, was caught again and fitted with a radio-collar. Also, B155 was discovered with B154. It was not known whether there are multiple packs in this area, or if the observations in the Pikes Fork area represented the Timberline pack. An uncollared pup was found dead near Highway 21 in October 2004. It had been illegally shot and an investigation was initiated. The discovery of this pup verified reproduction for the Timberline pack, but they were not a breeding pair during 2004.

Twin Peaks

A minimum of 1 wolf pup was heard howling from the same suspected den site as 2003. But like last year the wolves moved away before a capture effort could be conducted. Based on the detec-

tion of at least 1 pup, this pack reproduced, but was not a breeding pair in 2004. The last time this pack attained breeding pair status was in 2001.

Warm Springs

Founded by female B109, a disperser from the Wolf Fang pack, the Warm Springs pack denned along the South Fork of the Payette River between Banner Summit and Lowman, Idaho. B109's radio-collar was replaced, and her mate, B190, was initially radio-collared during January 2004 helicopter capture operations. Three gray pups were seen near the den site in mid-June 2004. An aerial sighting in December 2004 of 6 gray wolves indicated that a fourth pup or unknown older wolf was missed during previous observations or subsequently joined the pack. This newly documented pack was a breeding pair in 2004.

Willow (Montana)

Sole radio-collared wolf, female B103, has been missing for some time, but wolf activity was still present in this pack's home range. An automobile killed a yearling wolf in June 2004, though it is unknown if that individual was a pack member or a lone wolf moving through this territory. During the fall hunting season, Recovery Program personnel saw tracks of at least 2 wolves in this pack's home range. No evidence of reproduction was detected, so this pack was not a breeding pair in 2004.

OTHER WOLF GROUPS MONITORED

B127

A disperser from the Wildhorse pack in Copper Basin, B127 had settled in the Price Valley area outside of New Meadows, Idaho. During the winter he moved southwest to Cuddy Mountain, where a Recovery Program pilot believed he saw B127 with another wolf during a monitoring flight. B127 returned to the Price Valley area in the spring, but no evidence was obtained to indicate that he was with other wolves. As in 2003, the Recovery Program received reports during the hunting season of multiple wolves, including pups, in B127's home range. A mortality signal was detected during a monitoring flight in early November 2004. It was determined that B127 had been illegally shot; USFWS Law Enforcement is investigating this wolf's death.

B147

This wolf dispersed from the Jureano Mountain pack in November 2003, and was aerielly located in the Skookumchuck Creek drainage between Lucile and White Bird, Idaho, following a report from a bear hunter during spring 2004. Limited ground surveys did not indicate that B147 was accompanied by other wolves.

B157

Recovery Program personnel captured this male wolf during a control action in Pearl Creek, north of McCall, Idaho, in mid-August 2003. B157 was seen with another wolf in February 2004 during an aerial monitoring flight near the confluence of the Secesh and South Fork of the Payette Rivers. His somewhat restricted movements during the spring seemed to indicate that he may have paired and been attending a female on a den. However, all ground efforts throughout the field season provided no evidence that B157 associated with other wolves, although reports of multiple wolves within his territory were received. A sighting during a monitoring flight in October 2004 showed B157 with 2-3 other wolves. The ages of the wolves accompanying B157 at that time were unknown.

Y239/B45

Wolf Y239, a dispersing male from the Washakie pack in Wyoming, was captured and re-collared during a control action in late August 2004 north of McCall, Idaho. He was trapped at the same site where female B45 had been captured several days earlier. At the time it was hoped that Y239 was paired with B45 and that he would lead Recovery Program biologists to a litter of pups and help clarify the confusing situation that occurred in this area. Unfortunately Y239 left the area, and in October 2004 was located east of Wolf Fang Peak approximately 35 miles (56 km) from his capture site. Y239 was seen with another wolf in December 2004 in the Middle Fork of the Salmon River drainage, 36 miles (58 km) farther east than his October 2004 location.

AREAS OF SUSPECTED WOLF ACTIVITY

Wolf 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 many of these areas in an effort to document wolf status. The status of wolf activity in these areas, including the presence of resident wolf packs, was unknown. Future efforts will be made to capture and radio-collar wolves in each of the following areas.

Avery

Field investigations by Recovery Program personnel verified that there was a probable rendezvous site in the vicinity of Cemetery Ridge north of Calder and Avery, Idaho. Recovery Program biologists also saw a wolf, but capture efforts were not successful.

Bovill/Deary

The Chesimia pack inhabited the area southeast of this region, but the Recovery Program has also received reports of wolf activity north of this area, as well. Tracks of multiple wolves were observed in the winter of 2003/2004.

Carey Dome/Marshall Mountain

Sightings of as many as 9 wolves were received from this area near the breaks of the Salmon River east of Riggins, Idaho. Recovery Program biologists located wolf tracks and scats near Marshall Meadow late in the summer, though this sign was several weeks old. In addition, 2-3 wolves were heard howling in Willow Creek, only a few miles from Marshall Meadow. A trapping operation did not result in the captures of any wolves.

Grangeville

Sighting information indicated wolf activity in an area southeast of Grangeville, Idaho, though ground investigations did not locate any definitive wolf sign. Dispersing wolf B147, a female from the Jureano Mountain pack near Salmon, Idaho, seemed to have settled in the general area of the headwaters of Skookumchuck Creek, a tributary that flows into the Salmon River about 3 miles (5 km) south of White Bird, Idaho. The October 2004 aerial location for B147 was within 5 miles (8 km) of one of the reports.

Lemhi

Based on the locations of reports, more than 1 group of wolves may inhabit this geographic region. There were fewer wolf sighting reports received from this area in 2004 than in previous years.

Lower Mores Creek

Sightings in this area have ranged from Bogus Basin to Arrowrock Reservoir. This is an area south and west of documented wolf packs, Timberline and Steel Mountain, though many of the sighting reports originated prior to establishment of those packs.

Lower Selway

This geographic area may be inhabited by more than 1 group of wolves. Recovery Program personnel located the tracks of multiple wolves in the Pete King Creek drainage in the spring of 2003, although the undefined territory of the Eldorado pack might account for these wolves. In addition, several reports of wolf activity were received from the north side of the Selway River near the Fenn Ranger Station, which is now the territory of the Coolwater Ridge pack. It was not known if the Selway and Lochsa Rivers served as a territorial boundary for wolves.

Mount Haggin (Montana)

Recovery Program and Montana Fish, Wildlife and Parks personnel provided information that a pack, possibly as many as 6 animals, inhabited this area southwest of Anaconda, Montana. The

alpha pair of the former Twin Peaks pack, male B18 and female B35, was translocated to the Selway-Bitterroot Wilderness in April 2000, but was eventually found near Anaconda that summer. Their radio-signals disappeared that fall, but it's possible that the wolves currently believed inhabiting this area are descendants of B18 and B35.

North Fork of the Salmon River

This geographic area may be occupied by more than 1 group of wolves. Reports have been received on both the west and east sides of the river. In 2002, wolves on the east side of Highway 93 killed a Jureano Mountain wolf, female B118. A photograph of 5 gray wolves was taken in the headwaters of Sheep Creek near the Idaho/Montana border during the fall hunting season; this could have been members of the Battlefield pack from the Big Hole Valley in Montana, that are all gray and had a rendezvous site within approximately 10 miles (16 km) of the sighting. Radio-collared members of the Jureano Mountain pack have been located on the west side of the river in the past, but have not stayed there long. Wolf sign was located in the Hughes Creek/Hull Creek drainages, west of Highway 93, but capture operations were unsuccessful. This may also be winter range for the Painted Rocks pack that inhabits the West Fork of the Bitterroot River drainage in Montana.

Pikes Fork

Despite the Timberline pack having been very near this area, there was speculation that at least a pair of wolves not affiliated with that pack was using this area. A wolf was captured here, but it escaped from the trap before it could be radio-collared.

Postoffice Creek

Wolf tracks and scats were found in this drainage, which flows south into the Lochsa River, in 2003. No wolf sign was located in the same area in 2004.

Stolle Meadows/Warm Lake

An outfitter operating out of this area reported that through most of June and July 2004 an estimated 6-8 wolves were regularly heard howling, and their tracks and scats frequently observed on trails near Stolle Meadows. Recovery Program personnel did find what appeared to be wolf scats in the road near the headwaters of the South Fork of the Salmon River, but they were not fresh, so no capture operation was undertaken. Reports of wolf activity near Warm Lake would most likely represent these same individuals.

Upper Selway

This geographic area may be occupied by more than 1 group of wolves. In November 2003, a report of 8 wolves, including a large white wolf wearing a radio-collar, was received from a U.S. For-

est Service wildlife biologist hunting in the Running Creek area. This is the extreme upper end of the Selway River drainage and the sighting most likely involved the suspected pack that has been reported between Moose Creek and White Cap Creek. During ungulate surveys a large group of black wolves was observed in this area in February 2004. The Recovery Program detected the radio-signal of missing wolf female B99 at the Running Creek airstrip in March 2004, although that was the only location for her in 2004. The Selway pack has used this area in the past and that pack was composed entirely of black wolves. Sightings have also been received from the vicinity of Hells Half Acre Mountain.

Willow Creek Summit

A sighting of multiple wolves near Highway 93 between Challis and Mackay, Idaho, indicated potential occupation by wolves of this area. The Buffalo Ridge pack was aurally located about 7 miles (11 km) from Willow Creek Summit in December 2004, though they subsequently returned to their normal home range. A female wolf was lethally controlled at Willow Creek Summit, and a male was removed near Chilly Slough approximately 10 miles (16 km) from there in 2003.

Wolf Fang

Without any radio-collared members this pack could not be readily monitored, so Recovery Program personnel did not document pack status and reproduction in 2004, despite several efforts. Tracks were seen within their home range, but wolf sign was not concentrated enough to warrant a capture operation.

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END OF AN ERA

On a brilliant February day in 2004, the Recovery Program heard a radio-signal that they had been dreading for a long time. The radio-signal for male B2, the initial wolf tabbed for translocation to Idaho in 1995, was on mortality mode. Because of its remoteness, the mortality site was not investigated until April 2004. At that time B2's fully intact remains were located near the carcass of a rag-horn bull elk; though cause of death was unknown, the Recovery Program suspected that B2 was either killed during his pack's attack on the elk, or that he died of complications from his advanced age. When B2 was initially captured in Canada for his eventual translocation to Idaho, he was estimated to be 4 years old; depending upon the accuracy of this initial estimate, B2 would have been nearly 14 years old at the time of his death, making him one of the oldest wild wolves known.

B2 was released at Corn Creek, on the edge of the Frank Church-River of No Return Wilderness, on 14 January 1995. He wandered from the Middle Fork of the Salmon River to just west of the town of Salmon, Idaho, during 1995. After that not much was known of B2's whereabouts; he was located only 3 times in 1996, not at all in 1997, 4 times in 1998, and twice in 1999. He reappeared regularly again in June 2000 when he was found associating with B66, a female that had dispersed from the Stanley Basin pack. These 2 wolves became the alpha pair of the Wildhorse pack. This pack produced 2 litters of pups (2000 and 2001) before disbanding. B2, along with 2 of his radio-collared offspring, wandered extensively outside of their territory following B66's death. During the Recovery Program's helicopter capture efforts in 2003, B2 was accompanying another wolf, presumably a female, in the East Fork of the Salmon River drainage. This newly formed pair produced their first litter (4 pups) in 2003, and became the Castle Peak pack.

Because of his old age and the fact that he was the "first" wolf released in Idaho (there was no B1), B2 had a special place in the hearts of Recovery Program biologists. The last time he was captured, 13 February 2001, his eyes were clouded over by cataracts and it was believed that he was at least partially, if not completely, blind. An ailment like that would seemingly handicap his ability to survive, but survive he did for 3 more years. B2 sired at least 11 pups while in Idaho, some of which have themselves founded new packs, hopefully passing on B2's genes for longevity.

Another elderly wolf passed in 2004; B5, the founding alpha male of the Selway pack, was detected on mortality during a monitoring flight in mid-October 2004. At the time of his death B5 was estimated to be 12.5 years old. Unlike B2, the Recovery Program had a consistent set of locations on B5. After his release at Corn Creek, the same date as B2, he moved into the Montana portion of the CIEPA where he was located regularly west of Painted Rocks Reservoir. From there he moved west, eventually establishing a home range with his mate, B10, centered more or less on Bargamin Creek. The Selway pack was 1 of the first packs, along with Chamberlain Basin and Landmark, established in Idaho (remarkably, they all are probably still intact). The Selway pack produced at least 6 litters (1996, 1999-2003) totaling a minimum of 17 pups, although B5's status as the breeding male beyond 2002 is not certain. Cause of death for B5 could not be determined.

CITATIONS FOR PUBLICATIONS

- Asher, V., J. A. Shivik, K. Kunkel, M. Phillips, and E. Bangs. 2001. Evaluation of electronic aversive conditioning for managing wolf predation. Proceedings of the International Theriological Congress People and Predators Conference, South Africa.
- Ballard, W. B., D. Lutz, T. W. Keegan, L. H. Carpenter, and J. C. Devos Jr. 2001. Deer-predator relationships: a review of recent North American studies with emphasis on mule and black-tailed deer. *Wildlife Society Bulletin* 29(1):99-115.
- Bangs, E., S. H. Fritts, J. A. Fontaine, D. W. Smith, K. M. Murphy, C. M. Mack, and C. C. Niemeyer. 1998. Status of gray wolf restoration in Montana, Idaho, and Wyoming. *Wildlife Society Bulletin* 26:785-798.
- _____. 2001. Wolf management by zoning. *International Wolf* 11(3):21.
- _____, and J. Shivik. 2001. Managing wolf conflict with livestock in the northwestern United States. *Carnivore Damage Prevention News* No. 3:2-5.
- _____, J. Fontaine, M. Jimenez, T. Meier, C. Niemeyer, D. Smith, K. Murphy, D. Guernsey, L. Handegard, M. Collinge, R. Krischke, J. Shivik, C. Mack, I. Babcock, V. Asher, and D. Domenici. 2001. Gray wolf restoration in the northwestern United States. *Endangered Species Update* 18(4):147-152.
- _____. 2002. Wolf predation and elk in the Greater Yellowstone Area. *International Wolf*. 12(4):28.
- _____. 2003. Wolves have reached recovery levels in the northern Rocky Mountains: How does delisting happen? *International Wolf* 13:21-22.
- _____. 2004. Book review of Mech, L.D. and L. Boitani [eds]. 2003. *Wolves: behavior, ecology, and conservation*. Univ. Chicago Press. *Journal of Mammalogy* 85(4):814-815.
- _____, J. Fontaine, T. Meier, M. Jimenez, C. Niemeyer, D. Smith, C. Mack, V. Asher, L. Handegard, M. Collinge, R. Krischke, C. Sime, D. Moody, S. Nadeau. 2004. Submitted. Restoration and conflict management of the gray wolf in Montana, Idaho, and Wyoming. Transactions of the 9th North American Wildlife and Natural Resources Conference, Spokane, Washington.
- _____, M. Jimenez, C. Niemeyer, T. Meier, V. Asher, J. Fontaine, M. Collinge, L. Handegard, R. Krischke, D. Smith, and C. Mack. 2005. Livestock guarding dogs and wolves in the northern Rocky Mountains of the United States. *Carnivore Damage Prevention News* No. 8/January 2005:32-39.
- _____, J. Fontaine, T. Meier, C. Niemeyer, M. Jimenez, D. Smith, C. Mack, V. Asher, L. Handegard, M. Collinge, R. Krischke, C. Sime, S. Nadeau, D. Moody. 2005. Restoration and conflict management of the gray wolf in Montana, Idaho, and Wyoming. Transactions of the North American Wildlife and Natural Resources Conference 69:XXX-XXX.
- _____, _____, M.D. Jimenez, T.J. Meier, E.H. Bradley, C.C. Niemeyer, D.W. Smith, C.M. Mack, V. Asher, J.K. Oakleaf. 2005. In Press. Managing wolf/human conflict in the northwestern United States. Pages XXX-XXX, in R. Woodroffe, S. Thirgood, and A. Rabinowitz, editors. *People and wildlife: coexistence or conflict?* Cambridge University Press, Cambridge, United Kingdom.
- Bishop, N. A. and D. W. Smith. 2003. The survivors. *International Wolf* 13(1):4-7.
- Bradley, E. H. 2004. An evaluation of wolf-livestock conflicts and management in the northwestern United States. Thesis, University of Montana, Missoula, Montana, USA.
- _____, D. H. Pletscher, E. E. Bangs, K. E. Kunkel, D. W. Smith, C. M. Mack, J. A. Fontaine, C. C. Niemeyer, T. J. Meier, M. D. Jimenez. Submitted. Effects of wolf removal on livestock depredation in Montana, Idaho, and Wyoming. *Wildlife Society Bulletin*.
- _____, _____, _____, _____, _____, _____, T. J. Meier, J. A. Fontaine, C. C. Niemeyer, and M. D. Jimenez. Evaluating wolf translocation as a non-lethal method to reduce livestock conflicts in the northwestern United States. *Wildlife Conservation Biology* XX: In press.
- Breck, S. W., R. Williamson, C. Niemeyer, and J. A. Shivik. 2002. Non-lethal radio activated guard for deterring wolf depredation in Idaho: summary and call for research. Proceedings of the Vertebrate Pest Conference 20:223-226.
- Carroll, C., M. K. Phillips, N. H. Schumaker, and D. W. Smith. 2003. Impacts of Landscape change on wolf restoration success: planning a reintroduction program based on static and dynamic spatial models. *Conservation Biology* 17(2):536-548.

- Creel S., G. Spong, J. L. Sands, J. Rotella, J. L. Ziegler, K. M. Murphy, and D. W. Smith. 2004. Population size estimation in Yellowstone wolves with error-prone noninvasive microsatellite genotypes. *Molecular Ecology* 12:2003-2009.
- Eberhardt, L. L., R. A. Garrott, D. W. Smith, P. J. White, and R. O. Peterson. 2003. Assessing the impact of wolves on ungulate prey. *Ecological Applications* 13(3): 776-783.
- Evans, S., D. W. Smith and K. Murphy. 2000. Evaluation of wolf activity along the Tower to Canyon road in Yellowstone National Park, 1995-1999. Yellowstone National Park, Yellowstone National Park, Wyoming, USA.
- Fritts, S. H., C. M. Mack, D. W. Smith, K. M. Murphy, M. K. Phillips, M. D. Jimenez, E. E. Bangs, J. A. Fontaine, C. C. Niemeyer, W. G. Brewster, and T. J. Kaminski. 2001. Outcomes of hard and soft releases of reintroduced wolves in Central Idaho and the Greater Yellowstone area. Pages 125-147 in D. S. Maehr, R. F. Noss, and J. L. Larkin, editors. *Large Mammal Restoration: ecological and sociological challenges in the 21st century*. Island Press, Washington, D. C., USA.
- Gipson, P. S., E. E. Bangs, T. N. Bailey, D. K. Boyd, H. D. Cluff, D. W. Smith, and M. D. Jimenez. 2002. Color patterns among wolves in western North America. *Wildlife Society Bulletin* 30(3):821-830.
- Holyan, J., D. Boyd, C. Mack, and D. Pletscher. In review. Longevity of three wolves, *Canis lupus*, in the wild. *Canadian Field-Naturalist*.
- Husseman, J. S., D. L. Murray, G. Power, C. Mack, C. R. Wenger, and H. Quigley. 2003. Assessing differential prey selection patterns between two sympatric large carnivores. *Oikos* 101:591-601.
- _____, _____, _____, _____, and _____. 2003. Correlation patterns of marrow fat in Rocky Mountain elk bones. *Journal of Wildlife Management* 67(4):742-746.
- Husseman, J. S. 2002. Prey selection patterns of wolves and cougars in east-central Idaho. Thesis, University of Idaho, Moscow, Idaho, USA.
- Jimenez, M. D., and J. Stevenson. 2003. Wolf-elk interactions on state-managed feed grounds in Wyoming: 2002 progress report. U.S. Fish and Wildlife Service, Lander, Wyoming, USA.
- Mack, C. M. and K. Laudon. 1999. Idaho wolf recovery program: restoration and management of gray wolves in central Idaho. Progress report 1995-1998. Nez Perce Tribe, Department of Wildlife Management, Lapwai, Idaho, USA.
- _____, I. Babcock, and J. Holyan. 2002. Idaho wolf recovery program: restoration and management of gray wolves in central Idaho. Progress report 1999-2001. Nez Perce Tribe, Department of Wildlife Management, Lapwai, Idaho, USA.
- _____, and J. Holyan. 2003. Idaho wolf recovery program: restoration and management of gray wolves in central Idaho. Progress report 2002. Nez Perce Tribe, Department of Wildlife Management, Lapwai, Idaho, USA.
- _____, and J. Holyan. 2004. Idaho wolf recovery program: restoration and management of gray wolves in central Idaho. Progress report 2003. Nez Perce Tribe, Department of Wildlife Management, Lapwai, Idaho, USA.
- MacNulty, D. R., N. Varley, and D. W. Smith. 2001. Grizzly bear, *Ursus arctos*, usurps bison, *Bison bison*, captured by wolves, *Canis lupus*, in Yellowstone National Park, Wyoming. *Canadian Field-Naturalist* 115:495-498.
- McIntyre, R., and D. W. Smith. 2000. The death of a queen: Yellowstone mutiny ends tyrannical rule over Druid Pack. *International Wolf* 10(4):8-11.
- Mech, L. D., D. W. Smith, K. M. Murphy, and D. R. MacNulty. 2001. Winter severity and wolf predation on a formerly wolf-free elk herd. *Journal of Wildlife Management* 65(4):998-1003.
- Meier, T. 2001. Wolf depredation in the United States. *International Wolf* 11(3):4-5.
- Oakleaf, J. K. 2002. Wolf-cattle interactions and habitat selection by recolonizing wolves in the northwestern United States. Thesis, University of Idaho, Moscow, Idaho, USA.
- _____, C. Mack, and D. L. Murray. 2003. Effects of wolves on livestock calf survival and movements in central Idaho. *Journal of Wildlife Management* 67:299-306.
- _____, D. L. Murray, E. E. Bangs, C. M. Mack, D. W. Smith, J. A. Fontaine, J. R. Oakleaf, M. D. Jimenez, T. J. Meier, and C. C. Niemeyer. Habitat selection by recolonizing wolves in the northern Rocky Mountains of the United States. *Journal of Wildlife Management* XX: in press.

- Peterson, R. O., A. K. Jacobs, T. D. Drummer, L. D. Mech, and D. W. Smith. 2002. Leadership behavior in relation to dominance and reproductive status in gray wolves, *Canis lupus*. *Canadian Journal of Zoology* 80:1405-1412.
- Phillips, M. K., E. E. Bangs, L. D. Mech, B. T. Kelly, and B. Fazio. 2005. Living alongside canids: lessons from the extermination and recovery of red and grey wolves in the contiguous United States. Pages 297-309 in D. MacDonald and C. Sillero, editors. *The biology and conservation of wild canids*. Oxford University Press, New York, Oxford.
- Ripple, W. J., E. J. Larsen, R. A. Renkin, and D. W. Smith. 2001. Trophic cascades among wolves, elk and aspen on Yellowstone National Park's Northern Range. *Biological Conservation* 102: 227-234.
- Ruth, T. K., D. W. Smith, M. A. Haroldson, P. C. Buotte, C. Schwartz, H. Quigley, S. Cherry, K. M. Murphy, D., B. Tyers, and K. Frey. 2003. Large-carnivore response to recreational big-game hunting along the Yellowstone National Park and Absaroka-Beartooth Wilderness boundary. *Wildlife Society Bulletin* 31:1150-1161.
- Shivik, J. 2001. The other tools for wolf management. *WOLF!* Vol 11 (2):3-7
- _____, A. Treves, and P. Callahan. 2003. Nonlethal techniques for managing predation: primary and secondary repellents. *Conservation Biology*:1531-1538.
- _____, V. Asher, L. Bradley, K. Kunkel, M. Phillips, S. W. Breck, and E. Bangs. 2002. Electronic aversive conditioning for managing wolf depredation. *Proceedings of the Vertebrate Pest Conference* 20:227-231.
- Smith, D. W., W. G. Brewster, and E. E. Bangs. 1999. Wolves in the Greater Yellowstone Ecosystem: Restoration of a top carnivore in a complex management environment. Pages 103-125 in T. W. Clark, A. P. Curlee, S. C. Minta, and P. M. Kareiva, editors. *Carnivores in Ecosystems: The Yellowstone experience*. Yale University Press, New Haven, Connecticut, USA.
- _____, K. M. Murphy, and D. S. Guernsey. 1999. Yellowstone wolf project: annual report, 1998. National Park Service, Yellowstone Center for Resources, Yellowstone National Park, Wyoming, YCR-NR-99-1.
- _____, K. M. Murphy, and D. S. Guernsey. 1999. Yellowstone wolf project: annual report, 1998. National Park Service, Yellowstone Center for Resources, Yellowstone National Park, Wyoming, YCR-NR-99-1.
- _____. 2000. The wolves of Yellowstone. *Southeastern Wildlife Magazine*.
- _____, L. D. Mech, M. Meagher, W. E. Clark, R. Jaffe, M. K. Phillips, and J. A. Mack. 2000. Wolf-bison interactions in Yellowstone National Park. *Journal of Mammalogy* 81(4):1128-1135.
- _____, K. M. Murphy, and D. S. Guernsey. 2000. Yellowstone Wolf Project: annual report, 1999. National Park Service, Yellowstone Center for Resources, Yellowstone National Park, Wyoming, YCR-NR-2000-01.
- _____, K. M. Murphy, R. McIntyre, T. Zieber, G. Plumb, B. Phillips, B. Chan, J. Knuth Folts, D. Chalfant, and B. Suderman. 2000. Managing wolves and humans in Lamar Valley: a final report on the Druid road project 2000. National Park Service, Yellowstone Center for Resources, Yellowstone National Park, Wyoming, USA.
- _____, and M. K. Phillips. 2000. Northern Rocky Mountain Wolf (*Canis lupus nubilus*). Pages 219-223 in R.P. Reading and B. Miller, editors. *Endangered animals: a reference guide to conflicting issues*. Greenwood Press, Westport, Connecticut, USA.
- _____. 2001. Wildlife art: does it make a difference for wolves? *Wildlife Art* 20(6): 102-105.
- _____, and D. S. Guernsey. 2001. Yellowstone Wolf Project: annual report, 2000. National Park Service, Yellowstone Center for Resources, Yellowstone National Park, Wyoming, YCR-NR-2001-01.
- _____, R. McIntyre, E. Cleere, G. Plumb, B. Phillips, B. Chan, M. Ross, J. K. Folts, D. Chalfant, and B. Suderman. 2001. Managing wolves and humans in Lamar Valley: a final report on the Druid road project 2001. National Park Service, Yellowstone Center for Resources, Yellowstone National Park, Wyoming, USA.
- _____, K. M. Murphy, S. Monger. 2001. Killing of bison (*Bison bison*) calf, by wolf (*Canis lupus*), and four coyotes (*Canis latrans*), in Yellowstone National Park. *Canadian Field-Naturalist* 115 (2): 343-345.
- _____. 2002. Wolf #7: The passing of a matriarch. *Yellowstone Science* 10:18-19.
- _____. 2002. Wolf Pack Leadership: Doug Smith explores the issue in Yellowstone and Isle Royale. *Howlings: the Central Rockies Wolf Project* 11(2):10-12.

- _____. 2002. Book review -- Wolves and Human Communities: biology, politics, and ethics. *Journal of Mammalogy* 83:915-918.
- _____, and D. S. Guernsey. 2002. Yellowstone Wolf Project: annual report, 2001. National Park Service, Yellowstone Center for Resources, Yellowstone National Park, Wyoming, YCR-NR-2002-04.
- _____ and R. McIntyre. 2002. Wolf pack size: how did the Druid Peak Pack get to be so big? *International Wolf* 12(1):4-7.
- _____, D. R. Stahler, R. McIntyre, D. Graf, E. West, G. Plumb, B. Phillips, B. Chan, M. Ross, J. K. Folts, D. Chalfant, and B. Suderman. 2002. Managing wolves and humans in Lamar Valley: a final report on the Druid road project 2002. National Park Service, Yellowstone Center for Resources, Yellowstone National Park, Wyoming, USA.
- _____, R. O. Peterson, and D. Houston. 2003. Yellowstone after wolves. *BioScience* 53(4):330-340.
- _____, D. R. Stahler, D. S. Guernsey. 2003. Yellowstone Wolf Project: annual report 2002. National Park Service, Yellowstone Center for Resources, Yellowstone National Park, Wyoming, YCR-NR-2003, 14.
- _____, and _____. 2003. Management of habituated wolves in Yellowstone National Park. National Park Service, Yellowstone Center for Resources, Yellowstone National Park, Wyoming, USA.
- _____, T. D. Drummer, K. M. Murphy, D. S. Guernsey, and S. B. Evans. 2004. Winter prey selection and estimation of wolf kill rates in Yellowstone National Park. *Journal of Wildlife Management* 68:153-166.
- Stahler, D. R. 2000. Interspecific interactions between the common raven (*Corvus corax*) and the gray wolf (*Canis lupus*) in Yellowstone National Park, Wyoming: investigations of a predator and scavenger relationship. Thesis, University of Vermont, Burlington, Vermont, USA.
- _____, B. Heinrich, and D. W. Smith. 2002. Common ravens, *Corvus corax*, preferentially associate with gray wolves, *Canis lupus*, as a foraging strategy in winter. *Animal Behavior* 64:283-290.
- _____, D. W. Smith, and R. Landis. 2002. The acceptance of a new breeding male into a wild wolf pack. *Canadian Journal of Zoology* 80:360-365.
- _____, D. W. Smith, R. McIntyre, E. West, B. Phillips, B. Chan, M. Ross, J. K. Folts, D. Chalfant, and B. Suderman. 2003. Managing wolves and humans in Lamar Valley: a final report on the Druid road project 2003. National Park Service, Yellowstone National Park, Yellowstone National Park, Wyoming, USA.
- Trapp, J. R. 2004. Wolf den site selection in the Northern Rocky Mountains. Thesis, Prescott College, Prescott, Arizona, USA.
- _____, P. Beier, C. M. Mack, D. R. Parsons, and P. C. Paquet. In preparation. Wolf den site selection in the Northern Rocky Mountains. *Journal of Wildlife Management*.
- USDA/APHIS/Idaho Wildlife Services . 2001. Wolf Activity Report, Fiscal Year 2000. USDA/APHIS/Wildlife Services, Boise, Idaho.
- _____. 2002. Wolf Activity Report, Fiscal Year 2001. USDA/APHIS/Wildlife Services, Boise, Idaho.
- _____. 2003. Wolf Activity Report, Fiscal Year 2002. USDA/APHIS/Wildlife Services, Boise, Idaho.
- _____. 2004. Wolf Activity Report, Fiscal Year 2003. USDA/APHIS/Wildlife Services, Boise, Idaho.
- _____. 2005. Wolf Activity Report, Fiscal Year 2004. USDA/APHIS/Wildlife Services, Boise, Idaho.
- U. S. Fish and Wildlife Service. 2000. Proposal to reclassify and remove the gray wolf from the list of endangered and threatened wildlife in portions of the conterminous United States. *Federal Register* 65(135): 43449-43496.
- _____, Nez Perce Tribe, National Park Service, and USDA Wildlife Services. 2000. Rocky Mountain wolf recovery 1999 annual report. U.S. Fish and Wildlife Service, Ecological Services, Helena, Montana, USA.
- _____, _____, _____, and _____. 2001. Rocky Mountain wolf recovery 2000 annual report. U.S. Fish and Wildlife Service, Ecological Services, Helena, Montana, USA.
- _____, _____, _____, and _____. 2002. Rocky Mountain wolf recovery 2001 annual report. U.S. Fish and Wildlife Service, Ecological Services, Helena, Montana, USA.
- _____, _____, _____, and _____. 2003. Rocky Mountain wolf recovery 2002 annual report. U.S. Fish and Wildlife Service, Ecological Services, Helena, Montana, USA.

- _____. 2003. Endangered and threatened wildlife and plants; final rule to reclassify and remove the gray wolf from the list of endangered and threatened wildlife in portions of the conterminous United States; establishment of two special regulations for threatened gray wolves; final and proposed rules. Federal Register 68:15803-15875.
- _____, Nez Perce Tribe, National Park Service, and USDA Wildlife Services. 2004. Rocky Mountain Wolf Recovery 2003 annual report. U.S. Fish and Wildlife Service, Ecological Services, Helena, Montana, USA.
- _____. 2005. Endangered and threatened wildlife and plants; regulation for nonessential experimental populations of the western distinct population segment of the gray wolf; final rule. Federal Register 70(4):1286-1311.
- Wilmer, C. C., D. R. Stahler, R. L. Crabtree, D. W. Smith, and W. M. Getz. 2003. Resource dispersion and consumer dominance: scavenging at wolf- and hunter-killed carcasses in Greater Yellowstone, USA. Ecology Letters 6:996-1003.
- _____, _____, _____, _____, and _____. 2003. Trophic facilitation by introduced top predators: gray wolf subsidies to scavengers in Yellowstone National Park. Journal of Animal Ecology 72:909-916.

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

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/>
<http://fishandgame.idaho.gov/wildlife/wolves>

To report wolf sightings within Idaho:

Report online: <http://fishandgame.idaho.gov/wildlife/wolves/report.cfm>

To report incidents, request information, or report wolf problems:

Nez Perce Tribe's Idaho Wolf Recovery Program, McCall, ID (208) 634-1061
Nez Perce Tribe's Wildlife Department, Lapwai, ID (208) 843-2162

Idaho Fish and Game Regional Offices at:

Headquarters	(208) 334-3700
Panhandle Region	(208) 769-1414
Clearwater Region	(208) 799-5010
Southwest Region	(208) 465-8465
McCall Subregion	(208) 634-8137
Magic Valley Region	(208) 324-4350
Southeast Region	(208) 232-4703
Upper Snake Region	(208) 525-7290
Salmon Region	(208) 756-2271

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
District Supervisor, Boise, ID	(208) 378-5077
District Supervisor, Gooding, ID	(208) 934-4554
District Supervisor, Pocatello, ID	(208) 236-6921
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

Citizens Against Poaching (24hr) 1-800-632-5999
or any IDFG Office

IDAHO WOLF PACK PROFILES

Battlefield pack

Alpha pair (male, female) Unknown, Unknown
 Date paired ??
 Years produced (minimum litter size) 2004 (4)
 Note Five members lethally controlled in 2004
 Recovery status in 2004 Non-breeding pair
 Estimated pack size 8

Bear Valley pack

Alpha pair (male, female) B214*, Unknown
 Date paired ??
 Years produced (minimum litter size) 2004 (5)
 Recovery status in 2004 Non-breeding pair
 Estimated pack size 10

Bennett Mountain pack

Alpha pair (male, female) Unknown, Unknown
 Date paired ??
 Years produced (minimum litter size) 2003 (1)
 Note 3-4 members lethally controlled in 2004
 Recovery status in 2004 Non-breeding pair
 Estimated pack size 1

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), 2003 (3), 2004 (2)
 Recovery status in 2004 Breeding pair
 Estimated pack size 10

Black Canyon pack

Alpha pair (male, female) Unknown, Unknown
 Date paired ??
 Years produced (minimum litter size)
 Recovery status in 2004 Non-breeding pair
 Estimated pack size 4

Buffalo Ridge pack

Alpha pair (male, female) B93, B95
 Date paired May 2001
 Years produced (minimum litter size) 2002 (7), 2003 (6), 2004 (2)
 Recovery status in 2004 Breeding pair
 Estimated pack size 7

Calderwood pack

Alpha pair (male, female) Unknown, B141
 Date paired winter 2003/2004
 Years produced (minimum litter size) 2004 (3)
 Recovery status in 2004 Breeding pair
 Estimated pack size 5

Castle Peak pack

Alpha pair (male, female) B2*, Unknown
 Date paired Jan. 2003
 Years produced (minimum litter size) 2003 (4)
 Recovery status in 2004 Non-breeding pair
 Estimated pack size 5

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), 2003 (2)
 Recovery status in 2004 Non-breeding pair
 Estimated pack size ??

Chesimia pack

Alpha pair (male, female) Unknown, Unknown
 Date paired ??
 Years produced (minimum litter size) 2004 (4)
 Recovery status in 2004 Breeding pair
 Estimated pack size 6

Cold Springs pack

Alpha pair (male, female) Unknown, B206
 Date paired ??
 Years produced (minimum litter size) 2004 (4)
 Recovery status in 2004 Breeding pair
 Estimated pack size 6

Cook pack

Alpha pair (male, female) Unknown, Unknown
 Date paired ??
 Years produced (minimum litter size) 2003 (2)
 Note Pack retroactively confirmed for 2002. Nine members lethally controlled in 2004
 Recovery status in 2004 Non-breeding pair
 Estimated pack size 0

Coolwater Ridge pack

Alpha pair (male, female) Unknown, B163
 Date paired winter 2003/2004
 Years produced (minimum litter size) 2004 (3)
 Recovery status in 2004 Breeding pair
 Estimated pack size 5

Copper Basin pack

Alpha pair (male, female) B224, Unknown
 Date paired ??
 Years produced (minimum litter size) 2004 (2)
 Recovery status in 2004 Breeding pair
 Estimated pack size 9

Eagle Mountain pack

Alpha pair (male, female) B136, Unknown
 Date paired ??
 Years produced (minimum litter size) 2003 (2), 2004 (3)
 Recovery status in 2004 Breeding pair
 Estimated pack size 7

Eldorado pack

Alpha pair (male, female) Unknown, Unknown
 Date paired ??
 Years produced (minimum litter size) 2003 (2)
 Note Pack retroactively confirmed for 2002
 Recovery status in 2004 Non-breeding pair
 Estimated pack size ??

Five Lakes Butte pack	
Alpha pair (male, female)	Unknown, Unknown
Date paired	??
Years produced (minimum litter size)	2002 (2), 2004 (3)
Recovery status in 2004	Breeding pair
Estimated pack size	10
Florence pack	
Alpha pair (male, female)	Unknown, Unknown
Date paired	??
Years produced (minimum litter size)	2003 (2), 2004 (7)
Recovery status in 2004	Breeding pair
Estimated pack size	15
Fox Creek pack	
Alpha pair (male, female)	Unknown, Unknown
Date paired	??
Years produced (minimum litter size)	2003 (6)
Note	Confirmed by USFWS Eight members lethally controlled in 2004
Recovery status in 2004	Non-breeding pair
Estimated pack size	0
Galena pack	
Alpha pair (male, female)	Unknown, B107
Date paired	fall/winter 2002
Years produced (minimum litter size)	2003 (5), 2004 (3)
Recovery status in 2004	Breeding pair
Estimated pack size	7-8
Gold Fork pack	
Alpha pair (male, female)	Unknown, B130
Date paired	??
Years produced (minimum litter size)	2000 (2), 2001 (3), 2004 (3)
Recovery status in 2004	Breeding pair
Estimated pack size	5
Golden Creek pack	
Alpha pair (male, female)	Unknown, Unknown
Date paired	??
Years produced (minimum litter size)	2004 (2)
Recovery status in 2004	Breeding pair
Estimated pack size	7
Gospel Hump pack	
Alpha pair (male, female)	Unknown, B139*
Date paired	??
Years produced (minimum litter size)	2000 (2), 2001 (7), 2002 (3), 2003 (4), 2004 (4)
Recovery status in 2004	Non-breeding pair
Estimated pack size	5
Grassy Top pack	
Alpha pair (male, female)	Unknown, Unknown
Date paired	??
Years produced (minimum litter size)	
Note	Confirmed by USFWS
Recovery status in 2004	Non-breeding pair
Estimated pack size	2

Hazard Lake pack	
Alpha pair (male, female)	B105*, Unknown
Date paired	??
Years produced (minimum litter size)	2003 (5), 2004 (3)
Note	Three members lethally controlled in 2004
Recovery status in 2004	Non-breeding pair
Estimated pack size	6-8
Hemlock Ridge pack	
Alpha pair (male, female)	B210, Unknown
Date paired	??
Years produced (minimum litter size)	2003 (5), 2004 (3)
Recovery status in 2004	Breeding pair
Estimated pack size	7-9
Jureano Mountain pack	
Alpha pair (male, female)	Unknown, Unknown
Date paired	??
Years produced (minimum litter size)	1997 (6), 1998 (4), 1999 (9), 2000 (6), 2001 (3), 2002 (5) 2003 (3), 2004 (3)
Recovery status in 2004	Breeding pair
Estimated pack size	9
Kelly Creek pack	
Alpha pair (male, female)	B220, Unknown
Date paired	??
Years produced (minimum litter size)	1997 (5), 1998 (6), 1999 (4), 2000 (2), 2002 (6), 2003 (2), 2004 (2)
Recovery status in 2004	Breeding pair
Estimated pack size	4-5
Landmark pack	
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), 2003 (2)
Note	11 pups in 2002 represent double litter
Recovery status in 2004	Non-breeding pair
Estimated pack size	??
Lupine pack	
Alpha pair (male, female)	B79*, Unknown
Date paired	??
Years produced (minimum litter size)	2001 (2)
Recovery status in 2004	Non-breeding pair
Estimated pack size	??
Magruder pack	
Alpha pair (male, female)	B110, Unknown
Date paired	??
Years produced (minimum litter size)	2003 (6), 2004 (5)
Recovery status in 2004	Breeding pair
Estimated pack size	10
Marble Mountain pack	
Alpha pair (male, female)	B216, B217
Date paired	??
Years produced (minimum litter size)	2000 (2), 2001 (3), 2002 (3), 2004 (2)
Recovery status in 2004	Breeding pair
Estimated pack size	4

Monumental pack		Red River pack	
Alpha pair (male, female)	Unknown, Unknown	Alpha pair (male, female)	Unknown, Unknown
Date paired	??	Date paired	??
Years produced (minimum litter size)	2004 (3)	Years produced (minimum litter size)	2003 (4)
Recovery status in 2004	Breeding pair	Note	Pack retroactively confirmed for 2002
Estimated pack size	6	Recovery status in 2004	Non-breeding pair
		Estimated pack size	3+
Morgan Creek pack		Sapphire pack	
Alpha pair (male, female)	Unknown, Unknown	Alpha pair (male, female)	Unknown, Unknown
Date paired	??	Date paired	??
Years produced (minimum litter size)	2003 (2), 2004 (2)	Years produced (minimum litter size)	2003 (3), 2004 (3)
Note	Pack retroactively confirmed for 2002	Note	Confirmed by USFWS
Recovery status in 2004	Breeding pair	Recovery status in 2004	Breeding pair
Estimated pack size	11	Estimated pack size	9
		Scott Mountain pack	
Moyer Basin pack		Alpha pair (male, female)	B115, B78
Alpha pair (male, female)	Unknown, B145	Date paired	??
Date paired	??	Years produced (minimum litter size)	2001 (4), 2002 (2), 2003 (5), 2004 (4)
Years produced (minimum litter size)	1997 (4), 1998 (4), 1999 (7), 2000 (5), 2001 (5), 2002 (4), 2003 (2), 2004 (4)	Recovery status in 2004	Breeding pair
Recovery status in 2004	Breeding pair	Estimated pack size	8
Estimated pack size	9		
		Selway pack	
O'Hara Point pack		Alpha pair (male, female)	B05*, Unknown
Alpha pair (male, female)	B111, Unknown	Date paired	Aug. 1995
Date paired	??	Years produced (minimum litter size)	1996 (2), 1999 (2), 2000 (4), 2001 (3), 2002 (3), 2003 (3)
Years produced (minimum litter size)	2003 (7), 2004 (4)	Recovery status in 2004	Non-breeding pair
Note	Pack retroactively confirmed for 2002	Estimated pack size	1-2
Recovery status in 2004	Breeding pair		
Estimated pack size	6-7	Soldier Mountain pack	
		Alpha pair (male, female)	B149, B150
Orphan pack		Date paired	??
Alpha pair (male, female)	B116*, B61	Years produced (minimum litter size)	2003 (4), 2004 (5)
Date paired	Jan. 2002	Recovery status in 2004	Breeding pair
Years produced (minimum litter size)	2000 (1), 2001 (1), 2003 (1), 2004 (4)	Estimated pack size	10-11
Recovery status in 2004	Non-breeding pair		
Estimated pack size	7	Steel Mountain pack	
		Alpha pair (male, female)	R241, B189
Packer John pack		Date paired	??
Alpha pair (male, female)	Unknown, B205	Years produced (minimum litter size)	2003 (6), 2004 (3)
Date paired	??	Note	R241 immigrated to CIEPA from Yellowstone NP
Years produced (minimum litter size)	2004 (5)	Recovery status in 2004	Breeding pair
Recovery status in 2004	Breeding pair	Estimated pack size	13
Estimated pack size	7		
		Thunder Mountain pack	
Painted Rocks pack		Alpha pair (male, female)	Unknown, Unknown
Alpha pair (male, female)	Unknown, Unknown	Date paired	??
Date paired	??	Years produced (minimum litter size)	1998 (6), 1999 (7), 2000 (3), 2001 (9)
Years produced (minimum litter size)		Note	Pack status uncertain after deaths of B22 and B72
Note	Confirmed by USFWS	Recovery status in 2004	Non-breeding pair
Recovery status in 2004	Breeding pair	Estimated pack size	??
Estimated pack size	6		
		Timberline pack	
Partridge Creek pack		Alpha pair (male, female)	Unknown, Unknown
Alpha pair (male, female)	B211*, Unknown	Date paired	??
Date paired	??	Years produced (minimum litter size)	2003 (4)
Years produced (minimum litter size)	2004 (6)	Note	Possible double litter in 2003
Note	Two members lethally controlled in 2004	Recovery status in 2004	Non-breeding pair
Recovery status in 2004	Non-breeding pair	Estimated pack size	3
Estimated pack size	8		

Twin Peaks pack

Alpha pair (male, female) Unknown, Unknown
 Date paired ??
 Years produced (minimum litter size) 1998 (3), 1999 (4),
 2001 (7), 2004 (1)
 Note Evidence of reproduction in 2003, but no
 official count
 Recovery status in 2004 Non-breeding pair
 Estimated pack size 3

Warm Springs pack

Alpha pair (male, female) B190, B109
 Date paired summer 2003
 Years produced (minimum litter size) 2004 (3)
 Recovery status in 2004 Breeding pair
 Estimated pack size 6

Willow pack

Alpha pair (male, female) Unknown, B103?
 Date paired ??
 Years produced (minimum litter size)
 Recovery status in 2004 Non-breeding pair
 Estimated pack size 2

Wolf Fang pack

Alpha pair (male, female) B132?*, B38
 Date paired Jan. 2000
 Years produced (minimum litter size) 2000 (5), 2001 (8)
 Note No contact with pack
 since 2002
 Recovery status in 2004 Non-breeding pair
 Estimated pack size ??

* Deceased

APPENDIX A.

Unverified wolf observation reports 2003-2004.

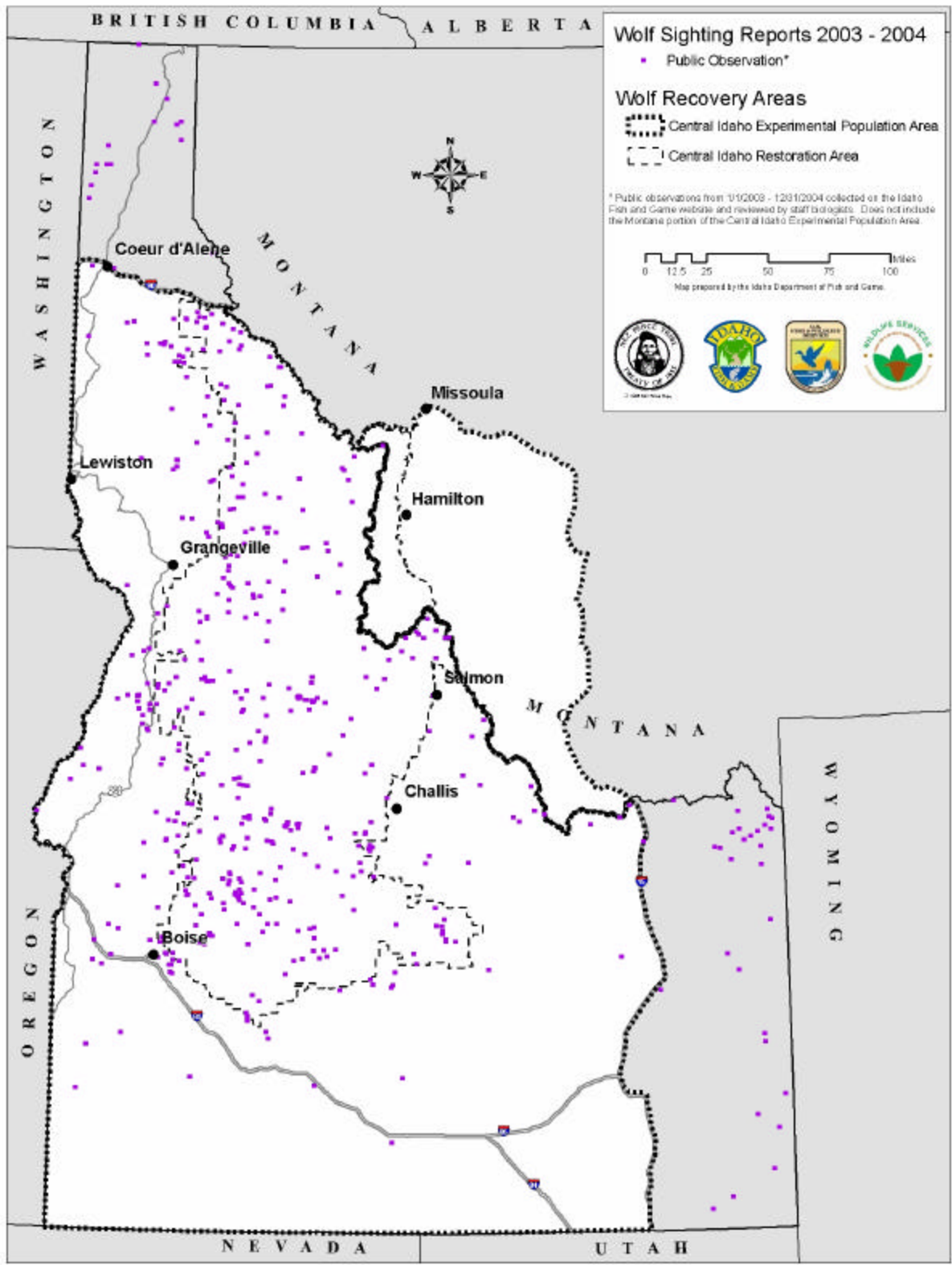


Figure A-1. Locations of unverified observations submitted to the Idaho Department of Fish and Game's on-line Wolf Reporting Form, 2003-2004.