WOLF CONSERVATION AND MANAGEMENT

IN IDAHO

PROGRESS REPORT 2009

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EXECUTIVE SUMMARY

In winters of 1995 and 1996, The U.S. Fish and Wildlife Service (USFWS) reintroduced 66 gray wolves to central Idaho and Yellowstone National Park as part of efforts to restore endangered gray wolf (*Canis lupus*) populations across the northern Rocky Mountain states of Idaho, Montana, and Wyoming. In April 2009, the USFWS removed (delisted) the northern Rocky Mountain distinct population segment of gray wolves from the protections of the Endangered Species Act across Idaho and Montana, returning wolf management authorities to those states. Although this delisting decision has been challenged, wolves remained off the Endangered Species List throughout 2009.

The State of Idaho and Nez Perce Tribe (NPT) work cooperatively to recover and conserve wolves in Idaho through a Memorandum of Understanding signed in 2005. In 2008, the Idaho Fish and Game (IDFG) Commission adopted the Idaho Wolf Population Management Plan (Wolf Plan) which was designed to guide the Idaho Department of Fish and Game in management of conflicts between wolves and human interests and aimed to stabilize the wolf population between 500-700 wolves (Idaho Department of Fish and Game 2008). The Wolf Plan guides wolf management direction for the 5-year 2008-2012 period. Following delisting, the Fish and Game Commission authorized the first Idaho wolf hunt in 2009, and established a statewide harvest limit of 220 wolves. Members of the NPT were provided an allocation of up to an additional 35 wolves in the Nez Perce Tribal Treaty Area.

This annual progress report is a cooperative effort between the IDFG and the NPT, with contributions from U.S. Department of Agriculture Wildlife Services, summarizing wolf activity and related management in Idaho during 2009.

In Idaho, wolf packs ranged from the Canadian border south to Interstate Highway 84, and from the Washington and Oregon borders east to the Montana and Wyoming borders. Dispersing wolves were occasionally reported in previously unoccupied areas. Sixteen previously unknown packs were documented for the first time during 2009, but there was an overall net increase of only 6 documented packs in the state. During 2009, 343 wolf observations were reported on IDFG's online website report form.

Biologists documented 94 Idaho packs alive at the end of 2009. The minimum year-end population was estimated at 835 wolves (Appendix A). In addition, there were 20 documented border packs counted for Montana, Wyoming, and Washington that established territories overlapping the Idaho state boundary and likely spent some time in Idaho. Of the 65 packs known to have reproduced, 49 packs qualified as breeding pairs by the end of the year. These 65 reproductive packs produced a minimum of 204 pups.

Biologists confirmed the deaths of 275 wolves in Idaho during 2009; three of those belonged to Montana packs and were addressed in that state's report (Sime et al. 2010). Of known wolf mortalities, harvest accounted for 135 deaths (including 1 wolf from a Montana pack that is reported in Montana's annual report) and agency control and legal landowner take in response to wolf-livestock depredation accounted for 94 deaths (including 1 wolf from a Montana pack that is reported in Montana's annual report). Twenty wolf mortalities were attributed to other human causes (including illegal take; including 1 wolf from a Montana pack that is reported in Montana's annual report), the cause of 24 wolf mortalities could not be determined and were listed as unknown, and 2 wolves died of natural causes.

During the 2009 calendar year, 75 cattle, 324 sheep, 13 dogs, and 1 goat were classified by WS as confirmed wolf kills; 23 cattle, 118 sheep, 2 dogs, and 1 goat were considered probable wolf kills.

ACKNOWLEDGEMENTS

Wolf management in Idaho is a cooperative effort between the State of Idaho, NPT, WS, and the USFWS. We would like to acknowledge and thank the Governor's Office of Species Conservation director Nate Fisher, and his staff Dustin Miller for assistance and oversight. The NPT's Executive Committee and Wildlife Program Director Keith Lawrence provided support and input. Mark Collinge, George Graves, Todd Grimm, and all WS field personnel helped resolve wolf depredations on livestock. U.S. Fish and Wildlife Service personnel Ed Bangs, Jeff Foss, Gary Burton, Robert Romero, Scott Kabasa, Scott Winkler, and Dirk Hoy provided support and assistance in wolf management responsibilities. Cal Groen, Virgil Moore, Jim Unsworth, Jeff Gould, Brad Compton, and Steve Nadeau (IDFG) provided support and input and numerous strategy sessions. We would like to thank IDFG Regional Supervisors for assuming most of the responsibility in making decisions on control actions in response to wolf depredations.

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INTRODUCTION

The U.S. Fish and Wildlife Service (USFWS) established 3 recovery areas (Northwest Montana, Central Idaho, and the Greater Yellowstone Area) to recover endangered gray wolf (*Canis lupus*) populations across the northern Rocky Mountain (NRM) states of Idaho, Montana, and Wyoming (Figure 1). Sixty-six wolves were released in central Idaho (35 wolves) and Yellowstone National Park (31 wolves) during winters of 1995 and 1996 as part of the USFWS' recovery effort. Wolf numbers across the NRM increased each year since reintroductions and USFWS-established biological recovery goals were met in Idaho and Montana in 2002.

In May 2009, the USFWS removed (delisted) the NRM gray wolf from the protections of the Endangered Species Act in Idaho and Montana and returned wolf management authorities to those states. The delisting decision established a Distinct Population Segment (DPS) within which wolves would be delisted (Figure 2). The DPS included all of Montana and Idaho, eastern portions of Oregon and Washington, and a small portion of northern Utah. The DPS excluded Wyoming where wolves remain listed as endangered under the Endangered Species Act.

A lawsuit was filed in Federal District Court in Missoula (9th Circuit) by a coalition of 13 environmental and animals rights groups in June. Another separate lawsuit challenging the USFWS delisting criteria was filed in the 9th Circuit by the Greater Yellowstone Coalition. Those 2 cases were consolidated in the Missoula District Court. Their complaint alleges the NRM wolf population is not recovered and that the delisting violates the Endangered Species Act for many legal reasons, including that delisting cannot occur without an adequate Wyoming regulatory framework in place. A request for preliminary injunction was filed by the coalition of 13 environmental and animal rights groups requesting that proposed wolf hunts be stopped and that wolves in Montana and Idaho be placed back on the Endangered Species list while the court decides the case within the next year. Judge Molloy denied the Plaintiffs' motion for preliminary injunction on grounds that the Plaintiffs failed to show a likelihood of irreparable harm to the wolf population. However, Judge Molloy indicated the Plaintiffs demonstrated a likelihood of success on the merits of their lawsuit. The Judge stated concerns with leaving a portion of the Northern Rockies Distinct Population Segment still listed (i.e., state of Wyoming). Written briefings by all parties were completed by January 28, 2010. A hearing date for oral arguments had not been set by mid-February, but is expected in spring 2010. Pending the court ruling, wolves in Idaho remained delisted through 2009.

The State of Idaho (Idaho Department of Fish and Game; IDFG) and Nez Perce Tribe (NPT) work cooperatively to recover and conserve wolves in Idaho through a Memorandum of Understanding signed in 2005.

In 2008, in preparation for delisting, IDFG prepared and the IDFG Commission authorized the Idaho Wolf Population Management Plan (Wolf Plan) which was designed to manage conflicts between wolves and human interests and aimed to stabilize the wolf population between 2005 and 2007 (500 -700 wolves) levels (Idaho Department of Fish and Game 2008). The Wolf Plan established 12 Wolf Management Zones (Zone), referred to as Data Analysis Units in the Wolf Plan, and guides wolf management direction within those zones for 2008-2012 (Figure 3). This report adopts the term Zone rather than Data Analysis Unit as used in the 2008 Wolf Conservation and Management in Idaho Progress Report.

The Wolf Plan also provided guidelines for wolf harvest opportunities. Following wolf delisting, the IDFG Commission authorized the first Idaho wolf harvest in 2009. Wolf harvest was regulated by Zone with general harvest seasons initially running from September through December; seasons were extended through March 2010 by the Commission at their November meeting for those Zones where the harvest limits had not already been met. A statewide harvest limit of 220 wolves was established for sport hunters with an additional 35 wolves reserved for treaty hunters.

This annual report summarizes wolf population status information and management activities carried out during 2009. It is organized by Zone. This report fulfills annual USFWS requirements summarizing and report wolf status and management activities in Idaho.

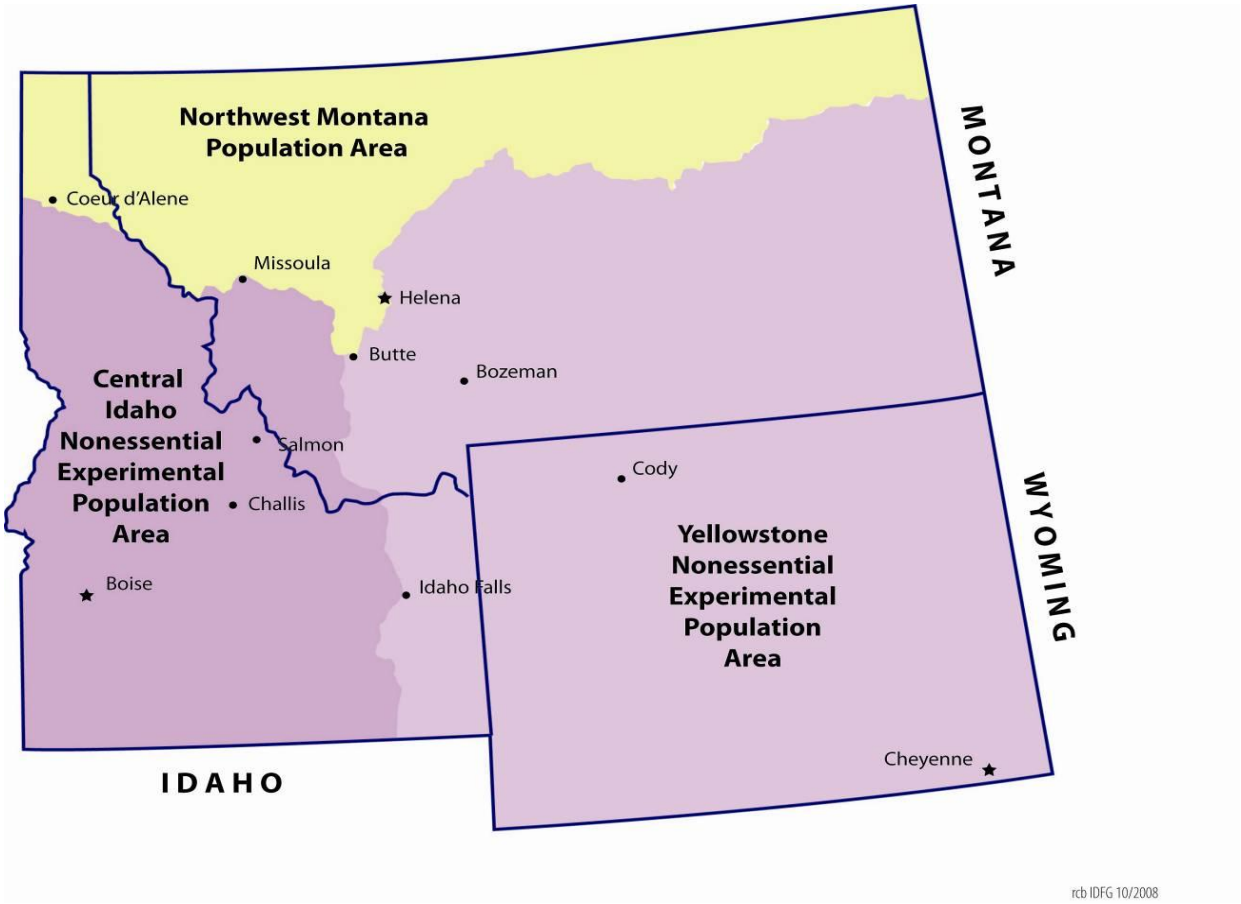


Figure 1. Recovery areas established by the U.S. Fish and Wildlife Service to restore gray wolf populations in the northern Rocky Mountains of Idaho, Montana, and Wyoming. Wolves were naturally recovering in the Northwest Montana Population Area, while wolves were reintroduced into the Central Idaho and Greater Yellowstone Nonessential Experimental Population Areas.

Figure 2. Northern Rocky Mountain gray wolf Distinct Population Segment (DPS) boundaries established by the U.S. Fish and Wildlife Service in 2009. Wolves within Idaho and Montana within this DPS were removed (de-listed) from the protections of the Endangered Species Act in 2009.

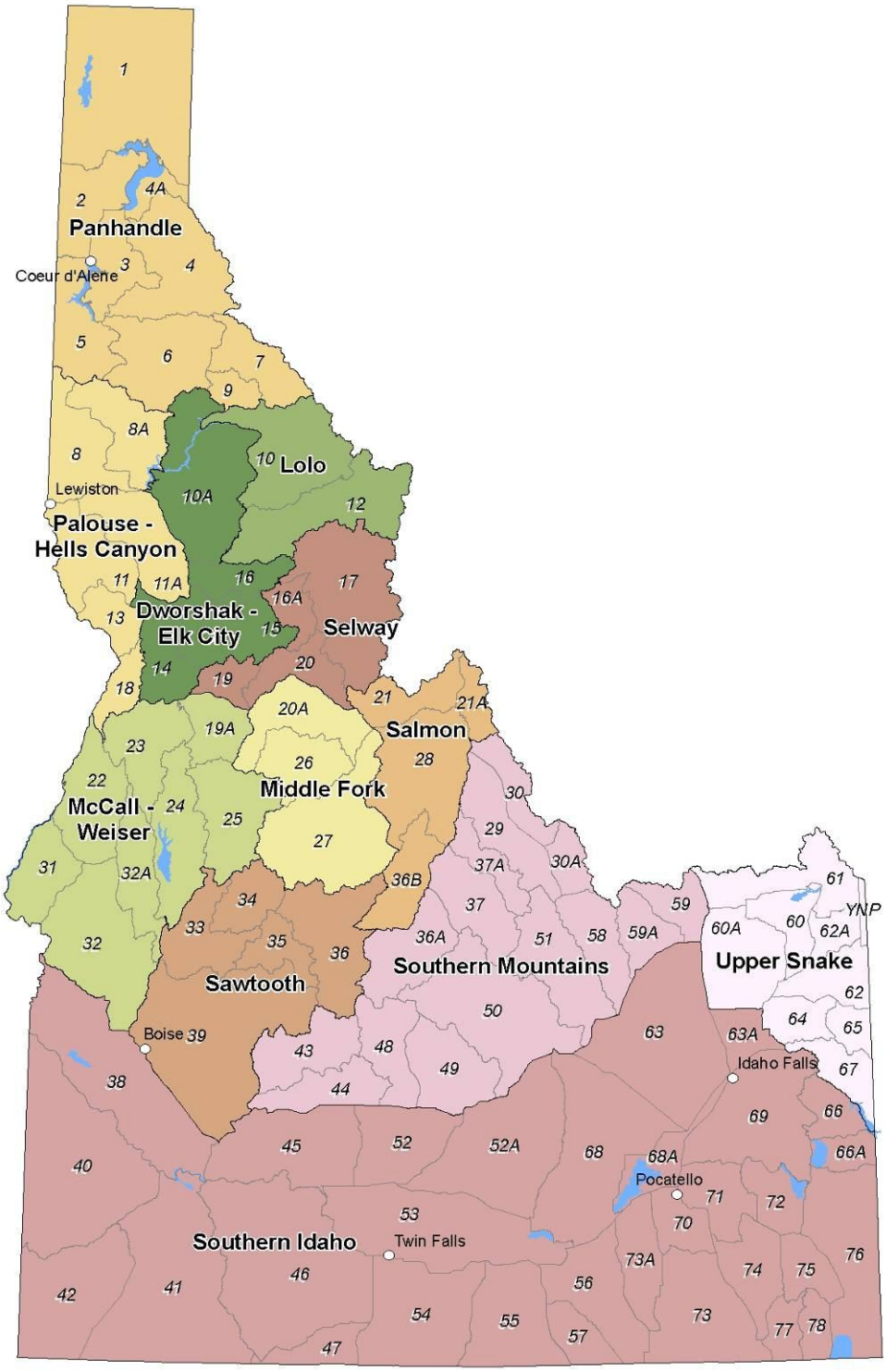


Figure 3. Idaho Wolf Management Zones. Wolf Management Zones were created by combining one or more elk management zones with similarity in wolf population, prey base, and current or potential conflicts with livestock and ungulates. Wolf Management Zones were designed to implement monitoring and management under the State Wolf Population Management Plan (2008).

STATEWIDE SUMMARY

Idaho has a diverse landscape containing large expanses of high quality wolf habitat. Central Idaho 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 represent the largest block of federally-designated wilderness in the lower 48 states. Outside of Wilderness Areas, land ownership and human use patterns result in varying levels of potential human conflict with wolves. Southern Idaho includes the vast Snake River Plain, which is predominantly private agricultural land and also contains most of Idaho's urban centers. Three major mountain chains and 2 large river systems help blend these very different landscapes together, many of which are managed for multiple uses. A moisture gradient also influences habitats of both wolves and their prey, with maritime climates in the north supporting western red cedar (*Thuja plicata*)-western hemlock (*Tsuga heterophylla*) vegetation types, transitioning into continental climates of Douglas-fir (*Pseudotsuga menziesii*) and ponderosa pine (*Pinus ponderosa*) 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 centimeters) at lower elevations to almost 100 inches (254 centimeters) at upper elevations.

Wolf Population Status

The Idaho wolf population has expanded in numbers and distribution since initial reintroductions in 1995 and 1996 (Figures 4, 5 and 6). By the end of 2009, 94 documented wolf packs (Idaho resident and border packs) were extant in Idaho, six more than were reported in 2008. The minimum population estimate was 835 (Appendix A).

Distribution, Reproduction, and Population Growth

Estimates of wolf numbers, pup production, and breeding pairs are conservative. Not all known wolf packs could be adequately surveyed. Wolves were well distributed across the state from the Canadian border, south to the Snake River Plain, and from the Washington and Oregon borders east to the Montana and Wyoming borders (Figure 6). Of the 94 documented packs present at the end of 2009, territories of most were predominantly on U.S. Forest Service (USFS) public lands. Sixteen packs were newly documented in 2009; three each in the McCall-Weiser and Panhandle Zones, two each in the Sawtooth, Southern Mountains, and Upper Snake Zones, and one each in the Dworshak-Elk City, Middle Fork, Salmon, and Selway Zones. Two newly documented packs may have stemmed from remnant members of older packs previously documented in those areas. In the Southern Mountains Zone, 1 newly documented pack was eradicated in 2009, while another was determined to have been established prior to 2009 and was retroactively added as a documented pack in 2008. Many newly documented packs resulted from increased monitoring efforts, primarily in the Panhandle and Upper Snake Zones, due to new research efforts (see Research) and increased field personnel efforts, respectively. Eight packs previously documented were no longer considered extant by the end of the year.

Of 94 documented packs, a minimum of sixty-five produced litters (including 1 pack that was subsequently eliminated) and 49 packs qualified as breeding pairs (Table 1). Fifteen packs reproduced but did not meet breeding pair criteria. A minimum of 204 wolf pups was

documented in 2009. Documented litter sizes ranged from 1-6 pups. Average minimum litter size for those packs where counts were believed complete (n = 29) was 4.1 pups per litter. Wolf pup counts were conservative estimates because complete pup counts could not always be obtained, and some documented packs were not surveyed. Likewise, the reported number of breeding pairs was a minimum count as reproductive status of some surveyed packs was not determined and 28 documented packs were not surveyed for reproductive status. Two surveyed packs were believed to be non-reproductive during 2009.

Based on the presence of multiple (>2) adults, 1 pack newly documented in 2009 was believed to be extant during the previous year and was retroactively added to the number of documented packs for 2008. Based on this retroactively corrected pack count, the estimated wolf population decreased 2% between 2008 ($\hat{N}$ = 856) and 2009 ($\hat{N}$ = 835) (Figure 4). In 2009, the average pack size was estimated to be 7.8, using only those packs (n = 23) where complete counts were obtained, compared to 8.3 for 2008, influencing population estimates (Appendix A). The social carrying capacity for wolves will likely 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. During 2009, 94 wolves were removed by WS or producers to resolve wolf depredation conflicts with livestock in Idaho. In 2008, 108 wolves were removed by agencies or producers. In 2008, 108 wolves were removed by agencies or producers.

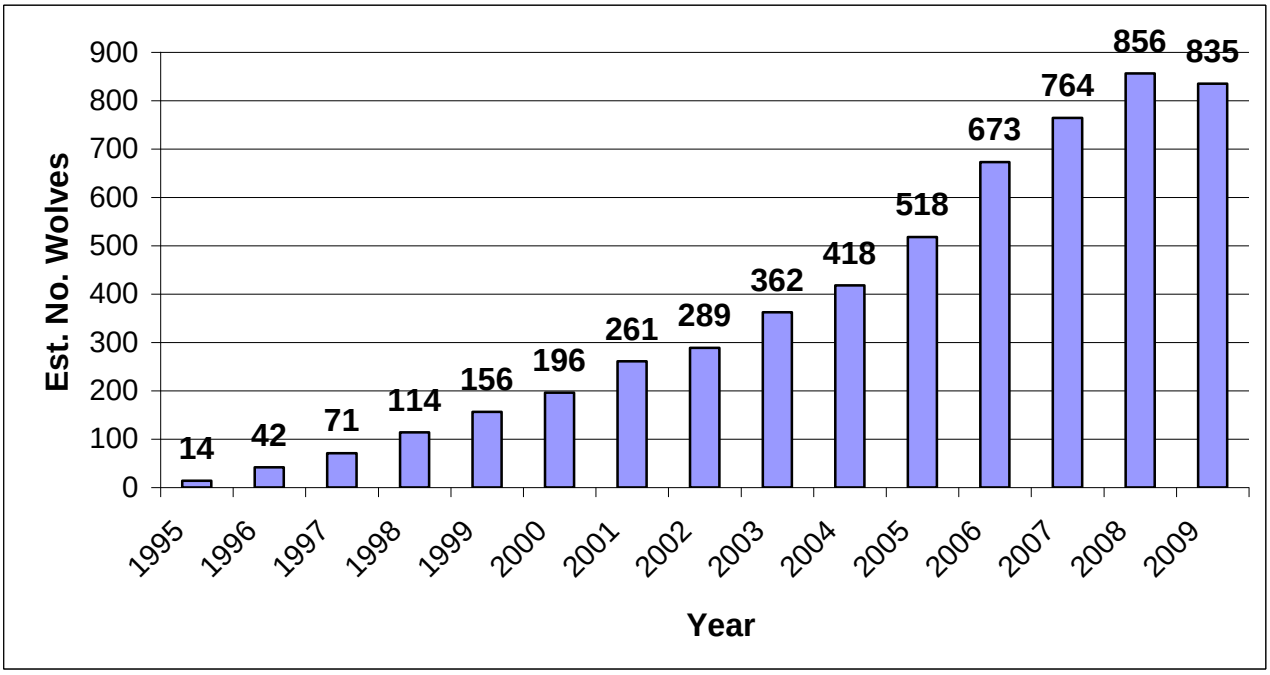


Figure 4. Estimated number of wolves in Idaho, 1995-2009. Annual numbers were based on best information available and were retroactively updated as new information became available.

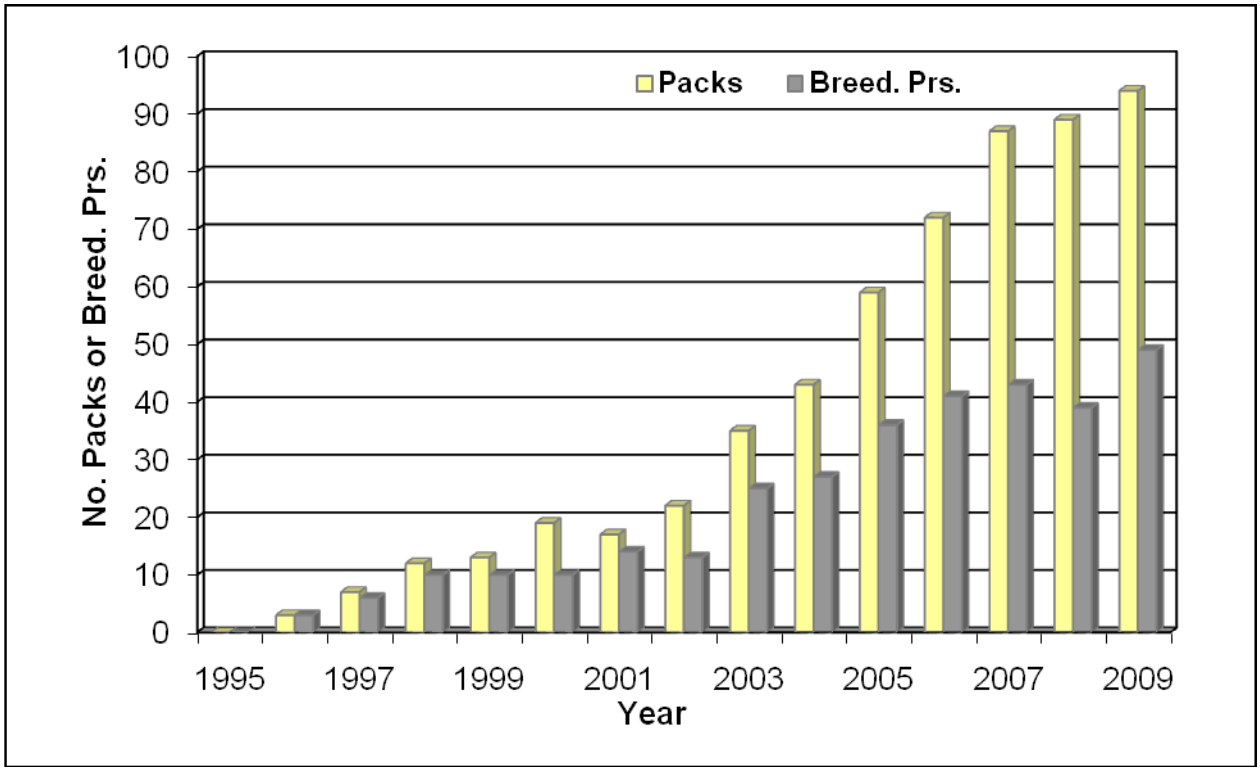


Figure 5. Number of documented wolf packs and breeding pairs in Idaho, 1995-2009. Annual numbers were based on best information available and were retroactively updated as new information became available.

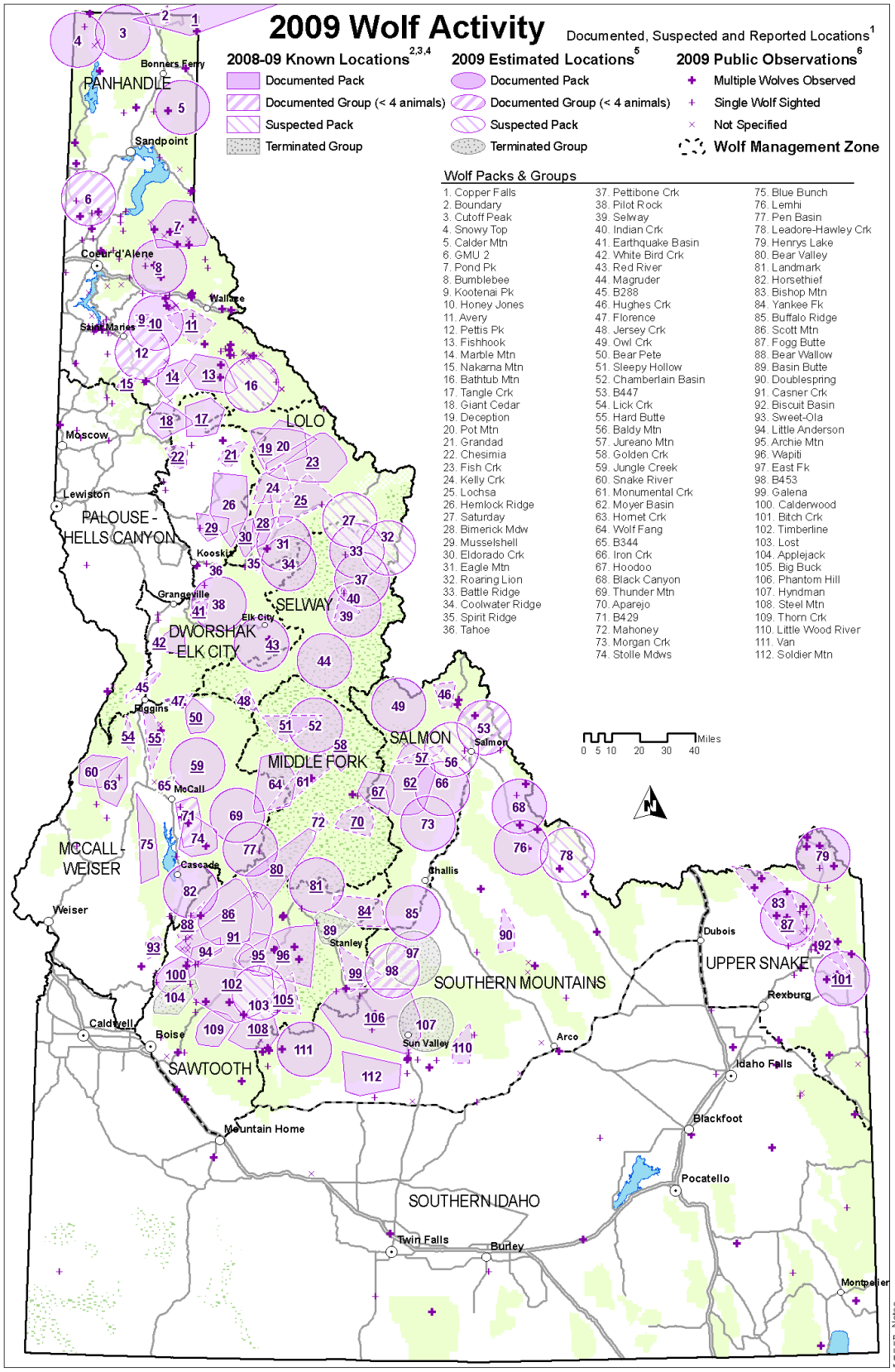


Figure 6. Distribution of documented and suspected wolf packs, other documented groups, and public wolf reports in Idaho, 2009.

Table 1. Number of wolves detected, documented packs, and other documented wolf groups; pack reproductive status, documented mortality by cause, known dispersal, and monitoring status; and wolf-caused livestock depredations within Idaho Wolf Management Zones, 2009.

	Wolf Management Zone												
	Panhandle	Palouse-Hells Canyon	Dworshak-Elk City	Lolo	Selway	McCall-Weiser	Middle Fork	Sawtooth	South Idaho	Upper Snake	South Mtns	Salmon	Total
Minimum number wolves detected[a]	17	10	36	21	6	34	34	48	1	29	11	15	262
Documented packs													
No. during year[b]	14	1	11	8	6	12	8	16	0	5	9	8	98
No. removed[b]	0	0	0	0	0	0	0	2	0	0	2	0	4
No. at end of year	14	1	11	8	6	12	8	14	0	5	7	8	94
Other documented groups[c]													
No. during year[c]	3	1	2	1	2	3	0	5	2	1	4	2	26
No. removed[c]	0	0	0	0	0	1	0	2	1	1	0	0	5
No. at end of year	3	1	2	1	2	2	0	3	1	0	4	2	21
Reproductive status													
Minimum no. pups produced	32(3[d])	3	26	15	0	32(9)	13(1[d])	51(11[d])	0	8(2[d])	13(7)	11	204(33)
No. of reproductive packs	10	1	8	4	0	9	5	15	0	4	5	4	65
No. of breeding pairs[e]	10	1	7	4	0	5	4	12	0	2	1	3	49
Known dispersal	0	0	1	0	1	2	0	3	0	0	0	2	9
Monitoring status													
No. of wolf captures[f]	12	0	3	11	0	5	1	33	0	2	6	4	77
No. of wolves missing[g]	2	0	0	5	0	0	0	6	0	3	1	0	17
Documented mortalities													
Natural	0	0	0	0	0	0	0	1	0	0	1	0	2
Control[h]	0	0	4	0	0	28	0	28	2	6	25[i]	0	93
Harvest[j]	13	5	18	5	6	14	14	33	1	5	10	10	134
Other human-caused[k]	4	0	1	0[i]	0	1	1	7	0	3	2	0	19
Unknown	0	0	2	5	0	1	2	8	0	0	6	0	24
Total mortalities	17	5	25	10	6	44	17	77	3	14	44	10	272

Table 1 (continued). Number of wolves detected, documented packs, and other documented wolf groups; pack reproductive status, documented mortality by cause, known dispersal, and monitoring status; and wolf-caused livestock depredations within Idaho Wolf Management Zones, 2009.

	Wolf Management Zone												
	Panhandle	Palouse-Hells Canyon	Dworshak-Elk City	Lolo	Selway	McCall-Weiser	Middle Fork	Sawtooth	South Idaho	Upper Snake	South Mtns	Salmon	Total
Confirmed (probable) wolf-caused livestock losses													
Cattle	0	0(1)	4(1)	0	0	21(7)	0	6(3)	1	4	37(11)	2	75(23)
Sheep	0	0	0	0	0	22	0	79(81)	0	97	126(37)	0	324(118)
Dogs	0	0	0	0	0	3(1)	0	2	0	5(1)	2	1	13(2)
Other	0	0	0	0	0	0	0	0	0	1[l]	0	0(1)[l]	1(1)

[a] Minimum number of wolves detected within a pack at the end of the year. Sum of this row does not equate to number of wolves estimated to be present in the population.
[b] Does not include documented packs removed due to lack of verified evidence for the preceding 2 years. Includes documented border packs tallied for Idaho.
[c] Other documented wolf groups include suspected packs and known and suspected mated pairs; verified groups of wolves that do not meet the definition of a documented pack.
[d] Pack affiliation of some pup(s) that died in the zone was not known.
[e] Breeding pairs are the measure of Federal and State wolf recovery and management goals. A breeding pair is defined as "an adult male and a female wolf that have produced at least 2 pups that survive until December 31 of the year of their birth…".
[f] Includes wolves captured for monitoring purposes during 2009. Most, but not all, were radiocollared.
[g] Radiocollared wolves that became missing in 2009.
[h] Includes agency lethal control and legal take by landowners.
[i] One wolf that was lethally controlled in the Southern Mountains Zone and 1 wolf that died of other human causes in the Lolo Zone were members of packs tallied by Montana and were not included in this data; information on Montana pack wolves is located in that State's 2009 Annual Report.
[j] One wolf that was a member of a Montana pack was harvested in the Lolo Zone and was applied toward the Idaho harvest limit. That individual was not included in the totals shown.
[k] Includes all other human-related deaths.
[l] Domestic goat.

Mortality

Project biologists documented 275 wolf mortalities in 2009 within the state. Three wolves that died in Idaho were members of Montana packs and are reported in Montana Fish, Wildlife and Parks' annual report (Table 1). In addition, a radiocollared Idaho wolf was legally harvested in Canada. Of the 272 wolf mortalities associated with Idaho packs and groups, at least 248 deaths were human-caused, 24 deaths were unknown (some of which may have been human-caused), and 2 deaths were of natural causes. Of 248 confirmed human-caused mortalities, 135 wolves were harvested legally by hunters, 93 wolves were killed by WS or were legally taken by livestock producers for depredating on livestock, 12 were killed illegally, and 8 died from other human causes. Wolves that were attacking or harassing livestock or dogs could be legally killed under Idaho Code §36-1107, shoot-on-sight permits issued prior to May 4 while wolves were listed under the Endangered Species Act, or kill permits issued to livestock operators under IDFG authority after May 4, 2009. Fewer wolves (n = 93) were lethally removed by WS and livestock producers in Idaho in 2009 than in 2008. Lethal removals, ranging from 1 to 11 wolves in Idaho packs, occurred in 24 documented wolf packs, 2 other documented groups, and at least 7 unknown wolf groups. These figures are likely underestimates of the true amount of overall mortality occurring within the wolf population, as documenting mortalities of uncollared wolves is difficult. Only 2 wolf deaths due to natural causes were recorded, another indication that mortality was underestimated, as more individuals likely succumbed to non-human-related factors. Lastly, we are unable to estimate deaths of pups that occurred prior to our surveys.

During 2009, 142 radiocollared wolves were located at least once. By year-end, we were continuing to monitor 70 (49%) radiocollared wolves. Forty-six (32%) radiocollared wolves were known or suspected dead and 26 (18%) were either missing or their status was unknown.

Known and suspected mortalities among radiocollared wolves were primarily human-caused (n = 28; 61%), followed by unknown (n = 16, 35%) and natural causes (n = 2; 4%) (Figure 7). Of 28 human-caused mortalities, 9 wolves (32%) were legally harvested, 7 wolves (25%) were illegally killed or possible wounding loss, 6 wolves (21%) were lethally controlled by WS; 5 wolves (18%) died from other causes (vehicle strike or capture related death), and 1 wolf (4%) was killed legally under the ESA 10j livestock protection clause (Figure 7).

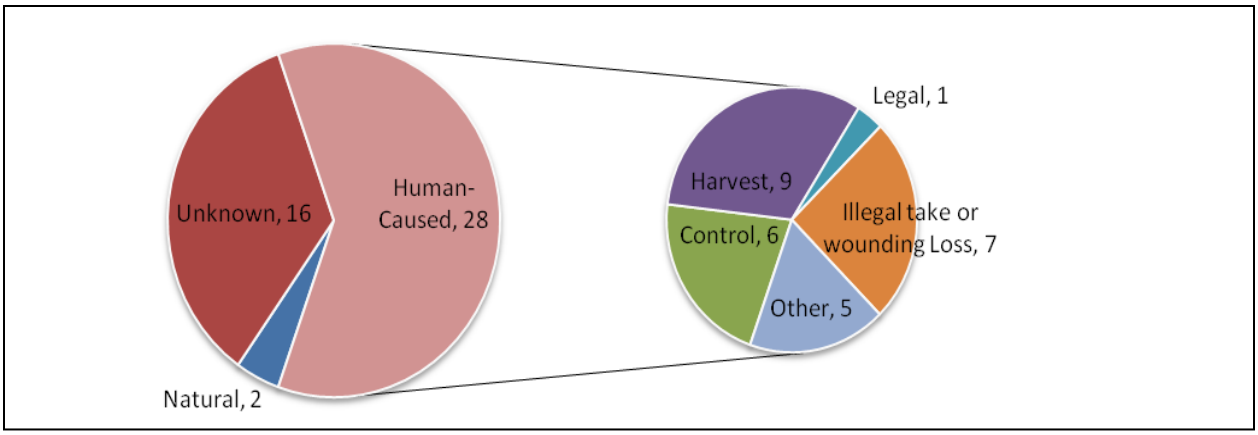


Figure 7. Cause specific mortality of 46 radiocollared wolves that died from various causes during 2009. Numbers are different than Table 1 because not all documented dead wolves had radiocollars.

Using these proportions, we estimated the total number of wolves dying during 2009 from various causes was 504 wolves, representing a total overall population mortality rate of 37%. Documented and estimated wolf mortality by cause included harvest (*n* = 135 wolves [documented]; 10% of estimated population), agency control and legal take (*n* = 93 wolves [documented]; 7% of estimated population), and all other causes (*n* = 276 wolves [estimated]; 21% of estimated population).

Survival Estimation

To assess wolf survival and its influence on our annual population estimate, monthly and annual survival estimates were calculated for Idaho's wolf population from the sample of radiocollared wolves actively monitored during 2009 using Program MARK (White and Burnham 1999). Additionally, monthly and annual survival estimates for wolves dying from human causes (lethal control, illegal take, harvest) were calculated to examine the effects of human-caused mortality factors on wolf survival and population trend. Wolf mortalities were categorized as human-caused, natural, and unknown. Overall wolf survival (using all causes of mortality) was determined from 140 radiocollared wolves that were monitored at least once during 2009, and for which date of mortality was known to the nearest month. Radiocollared wolves that died, but whose month of death could not be determined, were censored from the analysis. All radiocollared wolves whose fate was known for each month were used to generate the monthly survival estimates. This data set was further censored by removing all wolves dying from non-human causes, to estimate annual survival for wolves subject to human-caused mortality. Results of these analyses were based on the assumption that mortality risks of all radiocollared wolves were independent and equal to those of uncollared wolves, such that radiocollared wolves were exposed to uniform risk across the area for which inferences will be applied (i.e. statewide). Results from these analyses were based on the assumption that mortality risks of all marked wolves were independent and equal to those of unmarked wolves, such that radiocollared wolves were exposed to uniform risk statewide. This is not a thorough statistical review of individual variables influencing wolf survival across the state, but rather a broad overview of survival trends, irrespective of likely variability in mortality risk influenced by numerous factors (e.g., livestock presence, wolf age class, habitat; Smith et al. 2010).

The overall annual survival rate of wolves was 0.49 (SE = 0.053; *n* = 45 deaths; Figure 8). Monthly survival was relatively high (>0.95) during winter (Jan - Mar, Dec) and mid-summer (Jul - Aug), and lower in spring (Apr - May) and late summer-early fall (Sep - Nov). Wolf survival from human-caused factors was 0.63 (SE = 0.055; *n* = 29 deaths; Figure 8). Because wolf mortality was primarily human-caused (see Figure 7), monthly survival rates (human-caused only) mirrored overall wolf monthly survival rates, with the exception of April, when 4 wolves died of natural or unknown causes. The influence of human factors was further substantiated because 91% (247 of 272) of all documented wolf mortalities were human-caused. Human-caused mortality was greatest from September through November, and corresponded to increased lethal control of wolves due to livestock depredations (Sep) and hunting of wolves during concurrent wolf and deer/elk hunting seasons (Oct - Nov). Despite the low annual survival rate, the minimum estimated wolf population declined only 2% ($\lambda = 0.98$) between 2008

(856) and 2009 (835). The small population decline relative to the human-caused mortality rate (0.37) is consistent with results published by Adams et al. (2008), which suggested that wolf populations can withstand human exploitation below 0.29. At levels above 0.29 wolf populations would be expected to decline. Using our data and a model developed by Adams et al. (2008) which projects the influence of human-caused mortality on population change, we would expect a population decline from 856 wolves in 2008 to 780 wolves ($\lambda = 0.91$) in 2009. While Idaho's estimated wolf population did not decline as much as predicted by the model, some exploited wolf populations with mortality rates approaching 0.40 have increased, indicating some populations can sustain relatively high human-induced mortality, particularly when wolf harvest is focused on transient wolves not associated with a pack (Adams et al. 2008). In light of variability typical to all wildlife population predictions, Adams' regression model performed reasonably well in predicting Idaho's wolf population trajectory, and offers some promise in predicting population trends in conjunction with other methods of population estimation.

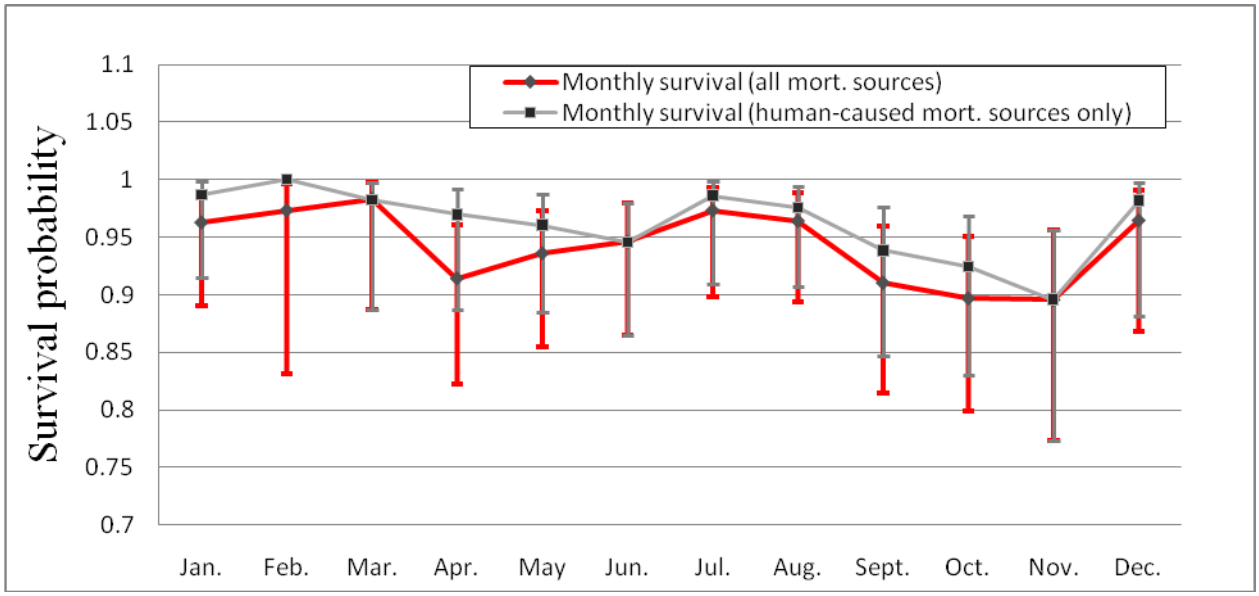


Figure 8. Monthly survivorship probabilities for wolves in Idaho, 2009. Graphs indicate the probability of a wolf surviving against all mortality risks for a given month (red line) and against only human-caused mortality risks (gray line). Error bars represent 95% confidence intervals around the estimates.

Wolf Harvest Summary

Idaho Department of Fish and Game subtracted 140 wolves from the 2009-2010 wolf hunting season harvest limit of 220 wolves by year-end 2009; 135 were harvested legally. Of the remaining five, 2 wolves were killed illegally, 2 wolves were shot and not retrieved (illegal take or wounding loss), and 1 wolf was a non-target trapping mortality. Harvest was distributed across the state, with every zone having registered at least 1 legal harvest. By year-end, 5 of the 12 zones were closed after harvest limits were met.

Most (58%) harvested wolves were male (Table 2). Eighty-five of 140 wolves were classified by age (juvenile [<1 year] and subadult/adult [>1 year]). Of these, 15 were juveniles and 70

were subadults/adults. Twenty-two wolves were weighed ($\bar{x}$ = 84 lbs. [38 kg]; range = 54-118 lbs. [25-54 kg]); mean weight for juveniles was 60 lbs. (27 kg; n = 3), and the mean weight of subadult/adults was 90 lbs. (41 kg; n = 16). One wolf was omitted because it had been partially field dressed, but weighed 126 lbs. (57 kg) with the stomach removed. Most wolves checked appeared healthy, although 2 wolves were confirmed to have *Trichodectes canis* (dog louse) and 2 wolves displayed symptoms of mange, although the results for 1 wolf where skin samples were taken indicated symptoms may have been due to squamous papilloma virus.

Table 2. Age and sex composition of wolves harvested in 2009 (includes all wolves tallied towards harvest limit).

Age	Juvenile		Subadult/Adult		Unknown		Total	
Sex	M	F	M	F	M	F	M	F
#	8	7	40	30	33	22	81	59
%	6	5	28	21	24	16	58	42

It is difficult to assess pack membership of harvested wolves because: 1) harvest location descriptions are often reported at the creek or river drainage level, where the reported drainage often intersected known or suspected territories of multiple packs; 2) relatively few wolves harvested wore radiocollars to identify pack membership; 3) wolves not associated with a pack (estimated 10-15% of wolf population; Mech and Boitani 2003) were dispersed across the state and within established known wolf pack territories, so there was no certainty that a wolf killed within an established pack's territory was a member of that pack; and 4) harvest often occurred in areas where multiple pack territories overlapped, or where pack territories were poorly understood due to lack of radiocollared wolves in the pack, or where there was no previously verified pack activity. With these caveats in mind, pack affiliation for 79 wolves killed during 2009 was surmised and represented 50 wolf packs. Average number of wolves harvested within a pack was 1.6 wolves (range = 1-4). Two harvested wolves attributed to Montana's Big Hole pack were killed in Idaho and counted towards the Idaho quota, but were also counted towards Montana's mortality totals.

Eleven radiocollared wolves were harvested in 2009. However, two of those radiocollars had malfunctioned or the battery had expired, and they were not transmitting. Additionally, 1 wolf that had been previously captured and ear-tagged, but not radiocollared, was harvested. One radiocollared wolf from an Idaho pack whose territory extends in to southern British Columbia, Canada, was killed during the hunting season in that province (but was not counted in Idaho's harvest limit).

Livestock and Dog Mortalities

During 2009, WS conducted 204 depredation investigations related to wolf complaints in 2009, about the same number conducted in 2008 (202 investigations; Figures 8 and 9). Of those 204 investigations, 144 (~71%) involved confirmed wolf depredations, 43 (~21%) involved probable wolf depredations, 16 (~8%) were possible/unknown wolf depredations, and 7 (~3%) of the complaints were due to causes other than wolves (USDA-APHIS Wildlife Services 2009). During the 2009 calendar year, WS reported 98 cattle, 442 sheep, 15 dogs, and 1 goat that were classified as confirmed or probable wolf kills (Table 1). Wolf depredation on cattle was highest

in the McCall-Weiser and Southern Mountains zones. Wolf depredation on sheep was highest the Sawtooth and Southern Mountains Zones (Figures 8 and 9).

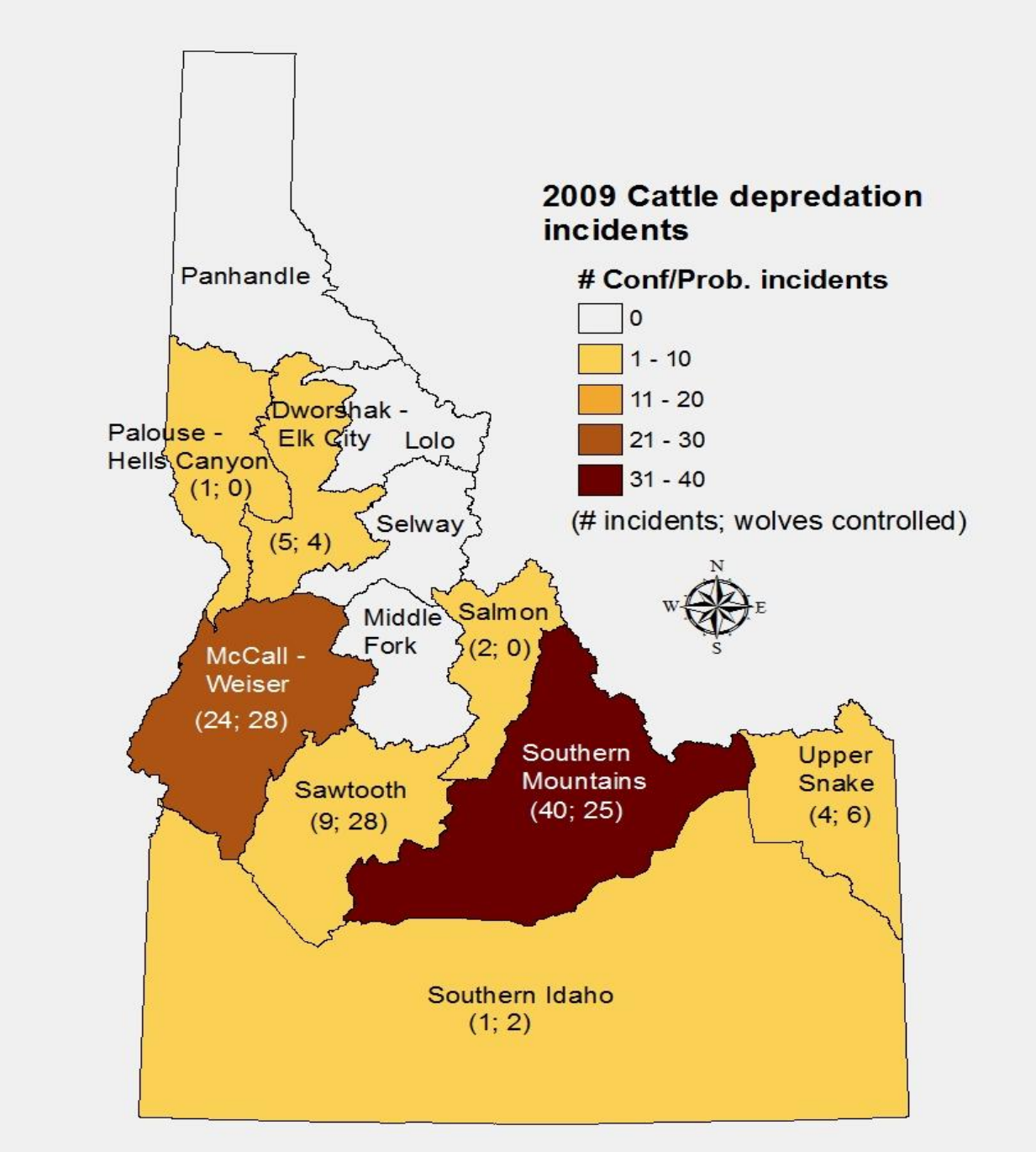


Figure 9. Number of confirmed and probable cattle depredations in Idaho attributed to wolves and number of wolves lethally controlled by Wolf Management Zone, 2009.

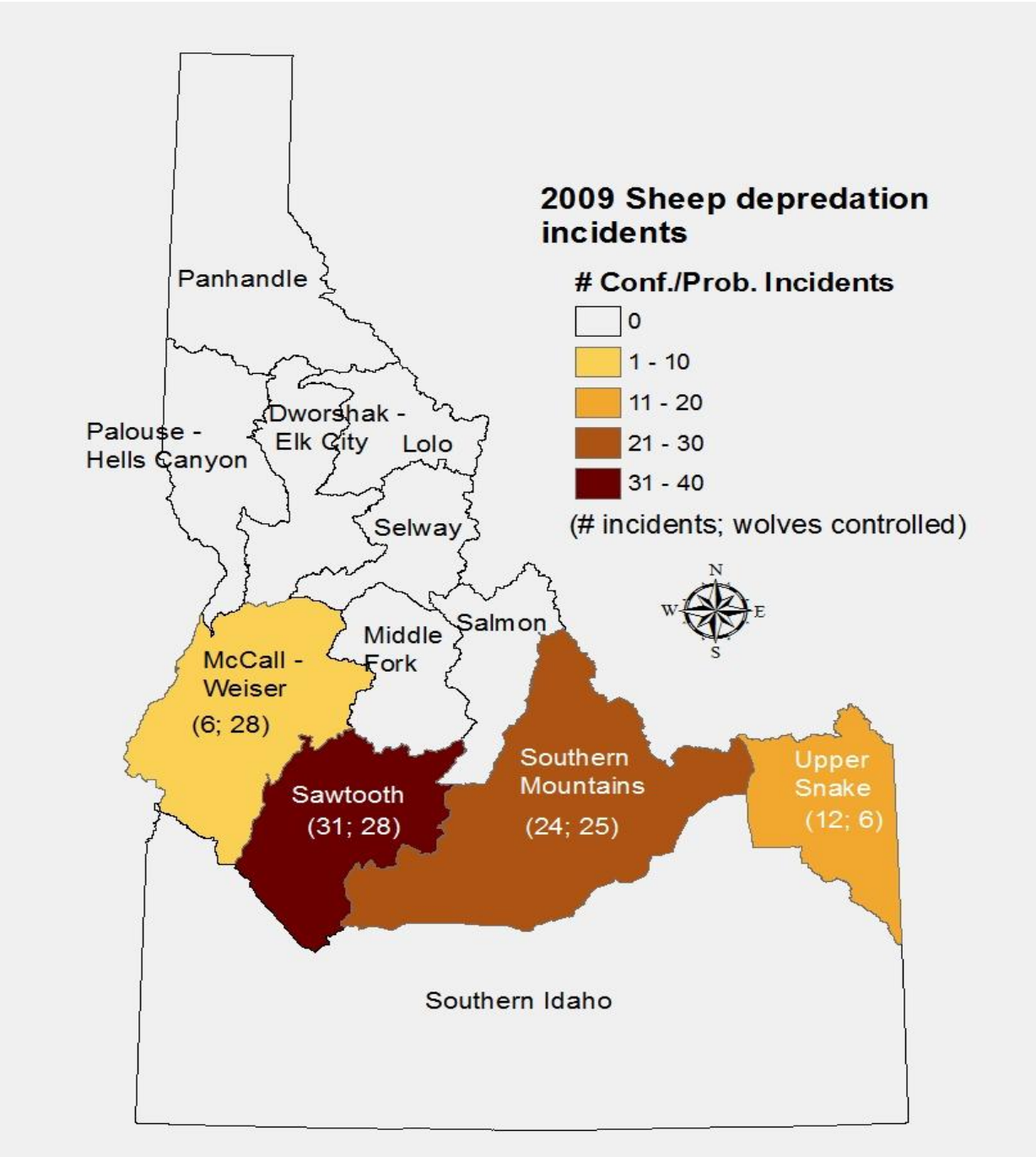


Figure 10. Number of confirmed and probable sheep depredations in Idaho attributed to wolves and number of wolves lethally controlled by Wolf Management Zone, 2009.

Research

Federal and state agencies and the NPT continued to coordinate and support scientific research assisting in long-term wolf conservation and management.

Statewide Elk and Mule Deer Ecology Study

During 2009, the IDFG continued efforts to measure the effects of wolf predation and habitat on elk populations across Idaho. Goals were to radiocollar and monitor adult and 6-month-old elk. Project objectives include: 1) determining survival, cause-specific mortality, pregnancy rates, and body condition for radiocollared animals; 2) monitoring wolf distribution and abundance within project areas; 3) developing habitat condition and trend maps for Idaho; and 4) developing a model set to predict elk mortality across a range of wolf:elk ratios and habitat/ environmental conditions. Project focus shifted from >10 extensive study areas to 2 intensive areas (Lowman study area in the Sawtooth Zone and North Fork of the Clearwater River study area in the Lolo Zone) where detailed information regarding wolf and ungulate interactions is being gathered via GPS telemetry. These data improve our understanding of the predator/ prey dynamic in contrasting landscapes. This research is providing contemporary data regarding survival, important mortality factors, and productivity of elk populations that will help biologists identify and evaluate specific predator and habitat management actions necessary to achieve ungulate population objectives.

Developing Monitoring Protocols for the Long-term Conservation and Management of Gray Wolves in Idaho

The University of Montana Cooperative Fish and Wildlife Research Unit, in collaboration with the IDFG, Montana Fish, Wildlife and Parks, and the NPT have devised, and are in the process of testing a proposed population monitoring program rooted in patch occupancy modeling, a statistical technique that can integrate data from multiple sampling methods (Ausband et al. 2009). To populate a patch occupancy model, we are evaluating a variety of survey methods that have demonstrated strong relationships to wolf abundance and distribution. The survey methods we are developing and testing are hunter surveys, rendezvous site surveys, howlboxes, and rub stations.

We surveyed 2,500 hunters in 2009 and found a strong correlation between the number of wolves detected by hunters and the density of wolves in 5 study areas, suggesting hunters' observations are reasonably accurate. To provide more detailed data than hunter surveys, we developed a habitat model that predicts the locations of wolf pack rendezvous sites. In 2009, we conducted surveys at 435 predicted rendezvous sites resulting in the detection of 12 of 15 litters of pups and all 19 study packs. DNA analysis of genetic samples collected during these surveys is underway. To provide detailed data on presence of wolves, we developed the howlbox, an automated wolf detection device that can detect wolves remotely. We deployed the howlbox at 7 wolf packs rendezvous sites in 2009 and detected adults and pups quickly and enumerated individuals via spectrograms. Failed deployments at several sites required us to fix electronic faults in the software and miss valuable field time in summer 2009. As a result of these minor setbacks we are currently field testing howlboxes through fall 2009/winter 2010. We also

developed a method for collecting hair samples using rub stations baited with scents that elicit roll responses from wolves. We sampled 9 separate wolf packs in 2009 and obtained rolls from each pack. DNA analyses are underway to confirm that hair samples are from wolves and to explore estimation of number of adults present using this method.

Each of our survey methods are designed to provide the data needed to populate a patch occupancy model; further, some of the methods can yield highly detailed information on wolves in limited areas, providing biologists with unprecedented tools for understanding wolves in areas where management interest is high. Estimates of pack size provided by some of our survey methods can be used in the estimation of breeding pairs needed to meet federal monitoring requirements during the 5-year post-delisting phase of wolf recovery (Mitchell et al. 2008). We suggest a monitoring framework based on patch occupancy modeling, using observations available from a variety of sampling techniques, can provide reliable statewide estimates of wolf pack abundance, with potential for estimation of wolf population size. Our goal at the end of 2011 is to provide managers with an accurate, cost-effective, and biologically sound population monitoring tool that generates reliable estimates, with associated measures of precision.

Evaluation of Wolf Impacts on Cattle Productivity and Behavior

Oregon State University's Beef Cattle Sciences unit initiated and employed an Adaptive Management System to document the effects of gray wolves on cattle production systems in Oregon and Idaho (Clark et al. 2009). The project collected information on cattle movement on land in both wolf common and wolf rare areas with Global Positioning System collars that record positions every 5 minutes. Sixty cow collars were deployed in 2008 and 65 in 2009. We also documented wolf presence using scat/sign surveys, sighting reports, and depredation reports filed by cooperating ranchers and APHIS Wildlife Services. The GIS data layers were collected or made for areas which were used to define livestock preference for vegetative communities and landscape classes. Economic analysis has begun of ranching systems on paired sites to document wolf effects on the cattle productivity and profitability.

Outreach

Program personnel presented 13 wolf specific information and education programs to a minimum of 305 people. Audiences included school students, agency personnel, community groups, sportsmen, and legislators. Additionally, a wolf biology video was integrated into all hunter education courses (a course which all new hunters are required to complete) and shown to approximately 7,500 students. Two additional videos were produced in 2009 and posted on the YouTube website. One focused on general wolf management and the other focused on how wolf harvest limits were determined. These 2 videos were also shown around the state at various public meetings where viewing statistics were not recorded. One individual educator presented wildlife education programs, which included a section on wolf ecology, to over 8,000 school students. Program staff participated in a broadcast panel discussion on Idaho Public Television and several stories with Boise State Radio. These interviews likely reached thousands of people. Program personnel also participated in interviews with national outlets including the New York Times, ABC News, National Public Radio, and National Public Television which, collectively, likely reached millions of people both in the United States and abroad.

Program personnel talked to numerous members of the public via telephone, email, and in person. Also, news articles were released by IDFG on an almost weekly basis summarizing noteworthy items about wolves. Wolf issues continued to be an interesting topic for the public and television, radio, and print media contacted program staff often to obtain wolf information and agency perspective.

The IDFG online wolf reporting system continued to provide an opportunity for the public and professionals to record wolf observations in Idaho. During 2009, 343 wolf observations were reported on the web site. The online reporting system is a tool which assisted biologists in identifying areas of possible wolf activity and allowed the public a means to communicate wolf concerns to the appropriate agency.

PANHANDLE WOLF MANAGEMENT ZONE
(Game Management Units 1, 2, 3, 4, 4A, 5, 6, 7, 9)

Background

The Panhandle Zone includes the IDFG Panhandle administrative region. The climate is strongly influenced by Pacific maritime patterns that produce heavy late fall and winter precipitation and moderate temperatures. Typical spring weather has prolonged periods of rain, while summer months are warm and dry.

The Panhandle Zone is predominantly timbered consisting of public forests managed by a variety of agencies and large areas of private corporate timber holdings. Timber harvest is the prevailing land use and large tracts of roadless designation or remote access are scattered throughout the area. White-tailed deer, elk, mule deer and moose occur at varying densities throughout the zone. Livestock grazing is minimal on public properties but exists in most areas of predominantly private lands (Idaho Department of Fish and Game 2007).

Management Direction

As outlined in the Wolf Plan wolf-livestock and wolf-ungulate conflicts in this zone are classified as low, but a potential for moderate levels of conflicts is noted if wolf populations increase. Management direction for wolves in this zone is to stabilize wolf numbers at the 2005-2007 level (Idaho Department of Fish and Game 2008). The IDFG Commission established a harvest limit of 30 wolves for this zone during the 2009 harvest season initially set for 1 October 2009 through 31 December 2009.

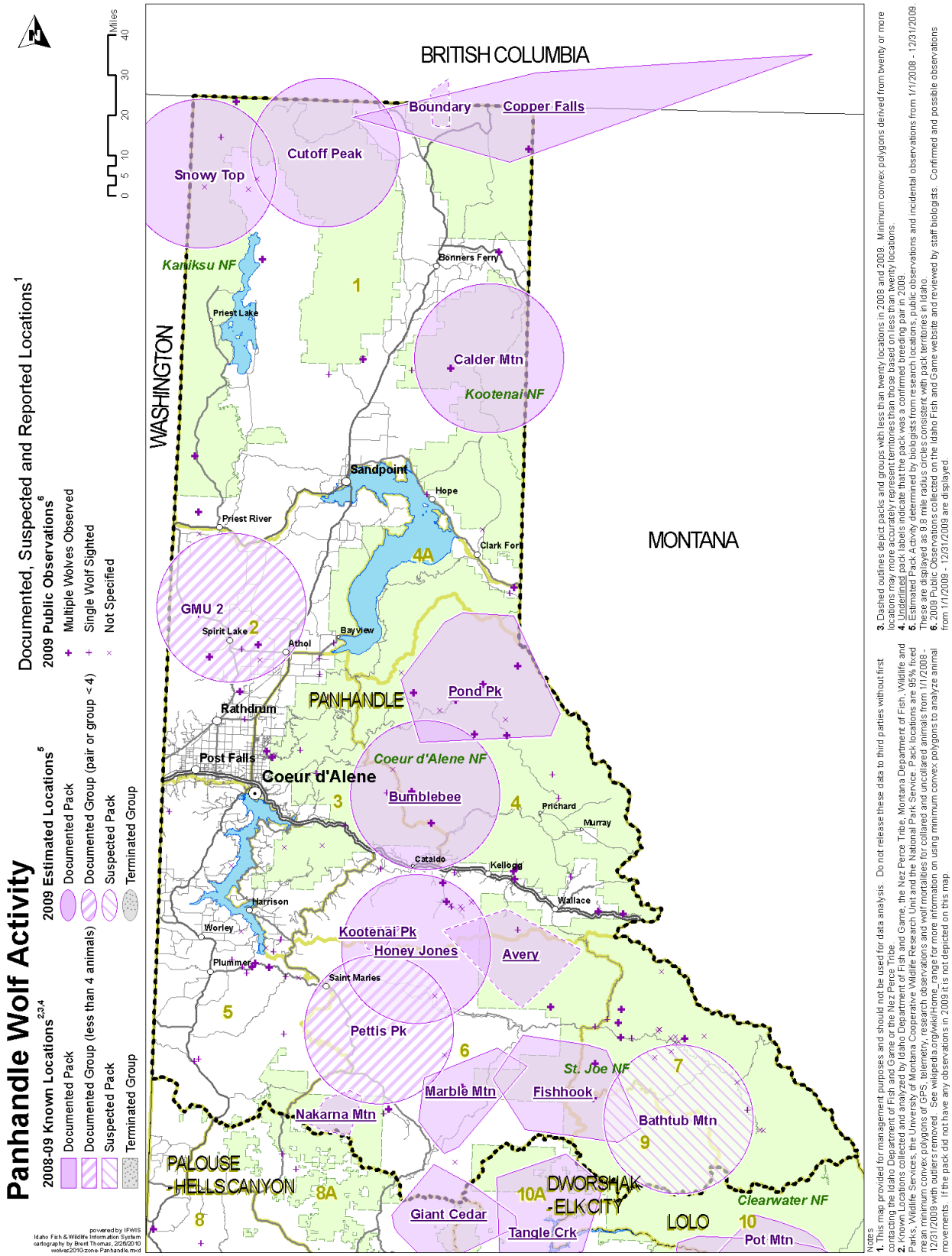
Management Summary

The Panhandle Zone was home to 8 documented resident packs, 13 border packs, 1 suspected pack and 2 other documented wolf groups (Figure 10; Table 3) during 2009. Six of 13 documented border packs were recorded as Idaho border packs and likely spent some time in

Canada, Montana, or Washington. Six border packs were tallied for Montana and one was tallied for Washington. These 7 packs likely spent some time in the Panhandle Zone.

Ten of 14 documented packs tallied for Idaho produced litters and all qualified as breeding pairs (Table 3). The reproductive status of 4 packs was unknown, but did not necessarily mean those packs did not reproduce.

Thirteen wolves were legally harvested from the harvest limit of thirty and four died of other human causes (Table 4). Because the harvest limit was not reached by the end of 2009, the season was lengthened through 31 March 2010 by the IDFG Commission at their November 2009 meeting. No documented or probable wolf-caused livestock losses occurred in this zone (Table 3). Twelve wolves were captured by agency personnel resulting in the placement of 10 radiocollars.



Notes

1. This map provided for management purposes and should not be used for data analysis. Do not release these data to third parties without first contacting the Idaho Department of Fish and Game or the Nez Perce Tribe.

2. Known Locations collected and analyzed by Idaho Department of Fish and Game, the Nez Perce Tribe, Montana Department of Fish, Wildlife and Parks, Wildlife Services, the University of Montana Cooperative Wildlife Research Unit and the National Park Service. Pack locations are 95% fixed mean minimum convex polygons of GPS, telemetry, research observations and wolf mortalities for collared and uncollared animals from 1/1/2008 - 12/31/2009 with outliers removed. See wikipedia.org/wiki/Home_range for more information on using minimum convex polygons to analyze animal movements. If the pack did not have any observations in 2009 it is not depicted on this map.

3. Dashed outlines depict packs and groups with less than twenty locations in 2008 and 2009. Minimum convex polygons derived from twenty or more locations may more accurately represent territories than those based on less than twenty locations.

4. Underlined pack labels indicate that the pack was a confirmed breeding pair in 2009.

5. Estimated Pack Activity determined by biologists from research locations, public observations and incidental observations from 1/1/2008 - 12/31/2009. These are displayed as 9.8 mile radius circles consistent with pack territories in Idaho.

6. 2009 Public Observations collected on the Idaho Fish and Game website and reviewed by staff biologists. Confirmed and possible observations from 1/1/2009 - 12/31/2009 are displayed.

Figure 11. Distribution of documented and suspected wolf packs, other documented groups, and public wolf reports in the Panhandle Wolf Management Zone, 2009.

Table 3. End of year summary of minimum number of wolves detected, reproductive status, dispersal, and monitoring status for documented and suspected wolf packs and other documented wolf groups within the Panhandle Wolf Management Zone, 2009.

WOLF GROUP[a]	Min. no. wolves detected[b]	Reproductive status			Known dispersal	Monitoring status	
		Min. no. pups prod.(died)[c]	Reported as			No. wolf captures[e]	No. wolves missing[f]
			Reprod. pack	Breeding pair[d]			
DOCUMENTED PACK							
Avery	3	3	YES	YES	0	2	0
Boundary (ID)[g]	?	?	NO	NO	0	1	0
Bumblebee	?	2	YES	YES	0	0	0
Calder Mountain (ID)[g]	?	?	NO	NO	0	0	0
Copper Falls (ID)[g]	?	4	YES	YES	0	1	0
Cutoff Peak (ID)[g]	?	?	NO	NO	0	0	0
De Borgia (MT)[g]							
Diamond (WA)[g]							
Fishhook	?	2	YES	YES	0	1	0
Honey Jones	?	5	YES	YES	0	0	0
Kootenai Peak	?	3	YES	YES	0	1	0
Marble Mountain	?	3(1)	YES	YES	0	1	0
Mullan (MT)[g]							
Nakarna Mountain	?	3	YES	YES	0	0	0
Pond Peak (ID)[g]	11	5	YES	YES	0	5	2
Silver Lake (MT)[g]							
Snowy Top (ID)[g]	?	?	NO	NO	0	0	0
Solomon Mountain (MT)[g]							
Superior (MT)[g]							
Tangle Creek	3	2	YES	YES	0	0	0
Twilight (MT)[g]							
SUBTOTAL	17	32(1)			0	12	2
SUSPECTED PACK							
Bathtub Mountain	?				0	0	0
SUBTOTAL	0	0			0	0	0
OTHER DOC. GROUP							
GMU 2	?				0	0	0
Pettis Peak	?				0	0	0
SUBTOTAL	0	0			0	0	0
ZONE TOTAL	17	32(3[h])			0	12	2

[a] Documented packs = territorial groups of wolves usually consisting of an adult male and female and their offspring from one or more generations, and has the potential to reproduce (2 adults of opposite sex). Suspected packs = geographic areas where wolf pack presence was suspected but not verified, or where wolf presence was verified but did not meet documented pack status. Other documented group = verified groups not meeting either documented or suspected pack status (e.g. lone wolves, potential mated pairs, etc.). Unknown = geographic areas where wolf presence was previously unverified and/or no data on group status was known.

[b] Minimum number of wolves detected within a pack at the end of the year. Summing this column does not equate to number of wolves estimated to be present in the zone.

[c] Number in parentheses indicates known pup mortality; pup mortalities tallied in the appropriate row/column in Documented mortality in Table 4.

[d] Breeding pairs are the measure of Federal and State wolf recovery and management goals. A breeding pair is defined as "an adult male and a female wolf that have produced at least 2 pups that survive until December 31 of the year of their birth…".

[e] Includes wolves captured for monitoring purposes during 2009. Most, but not all, were radiocollared.

[f] Radiocollared wolves that became missing in 2009.

[g] Border packs officially tallied to (STATE); territory known/likely shared with ID. Data on these packs can be found in Rocky Mountain Wolf Recovery 2009 Annual Report or other source.

[h] Pack affiliation of 2 pups harvested in this zone was not known.

Table 4. End of year summary of documented wolf mortality and wolf-caused livestock depredations by Game Management Unit (GMU) within the Panhandle Wolf Management Zone, 2009.

GMU	Documented mortality					Confirmed (probable) wolf-caused livestock losses			
	Natural	Control[a]	Harvest	Other human[b]	Unknown[c]	Cattle	Sheep	Dogs	Other
1	0	0	2	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0
4	0	0	2	2	0	0	0	0	0
4A	0	0	0	0	0	0	0	0	0
5	0	0	2	0	0	0	0	0	0
6	0	0	5	1	0	0	0	0	0
7	0	0	2	1	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0
ZONE TOTAL	0	0	13	4	0	0	0	0	0

[a] Includes agency lethal control and legal take (exclusive of wolf harvest)
[b] Includes all other human-related deaths.
[c] Does not include pups that disappeared before winter.

PALOUSE-HELLS CANYON WOLF MANAGEMENT ZONE (GMUs 8, 8A, 11, 11A, 13, 18)

Background

The Palouse-Hells Canyon Zone is composed of Game Management Units (GMUs) 8, 8A, 11, 11A, 13, and 18. Game Management Units 8, 8A, and 11A contain portions of the highly productive Palouse and Camas prairies. Dry-land agriculture began in this zone in the 1880s and, until the 1930s, large areas of native grassland existed. Currently, virtually all non-forested land has been tilled, and only small, isolated patches of native perennial vegetation remained. Timber harvest in the corporate timber, private timber, state land, and federal land areas of GMU 8A increased dramatically through the 1980s and 1990s, creating vast acreages of early successional ungulate habitat (Idaho Department of Fish and Game 2007). Non-forested habitat was not anticipated to provide habitat where wolves would persist.

Habitat within GMUs 11, 13, and 18 varies widely from steep, dry, river-canyon grasslands having low annual precipitation to higher elevation forests with greater precipitation. This area contains large tracts of both privately- and publicly-owned land: GMU 11 is mostly private land except for Craig Mountain Wildlife Management Area along the Snake and Salmon Rivers (Craig Mountain has been extensively logged); GMU 13 has been mostly under private ownership since settlement and has been managed mostly for agriculture and livestock; GMU 18 is one-third private ownership located at lower elevations along the Salmon River. Road density is moderate, with restricted access in many areas. The majority of Hells Canyon Wilderness Area is in GMU 18 (Idaho Department of Fish and Game 2007).

Management Direction

As outlined in the Wolf Plan, wolf-livestock conflicts are currently considered low, but a potential for high levels of conflict is noted if wolf populations increase. Wolf-ungulate conflicts in this zone are classified as moderate. Management direction for wolves in this zone is to stabilize the number of wolves at the 2005-2007 level (Idaho Department of Fish and Game 2008). The IDFG Commission established a harvest limit of 5 wolves for this zone during the 2009 harvest season set for 1 October 2009 through 31 December 2009.

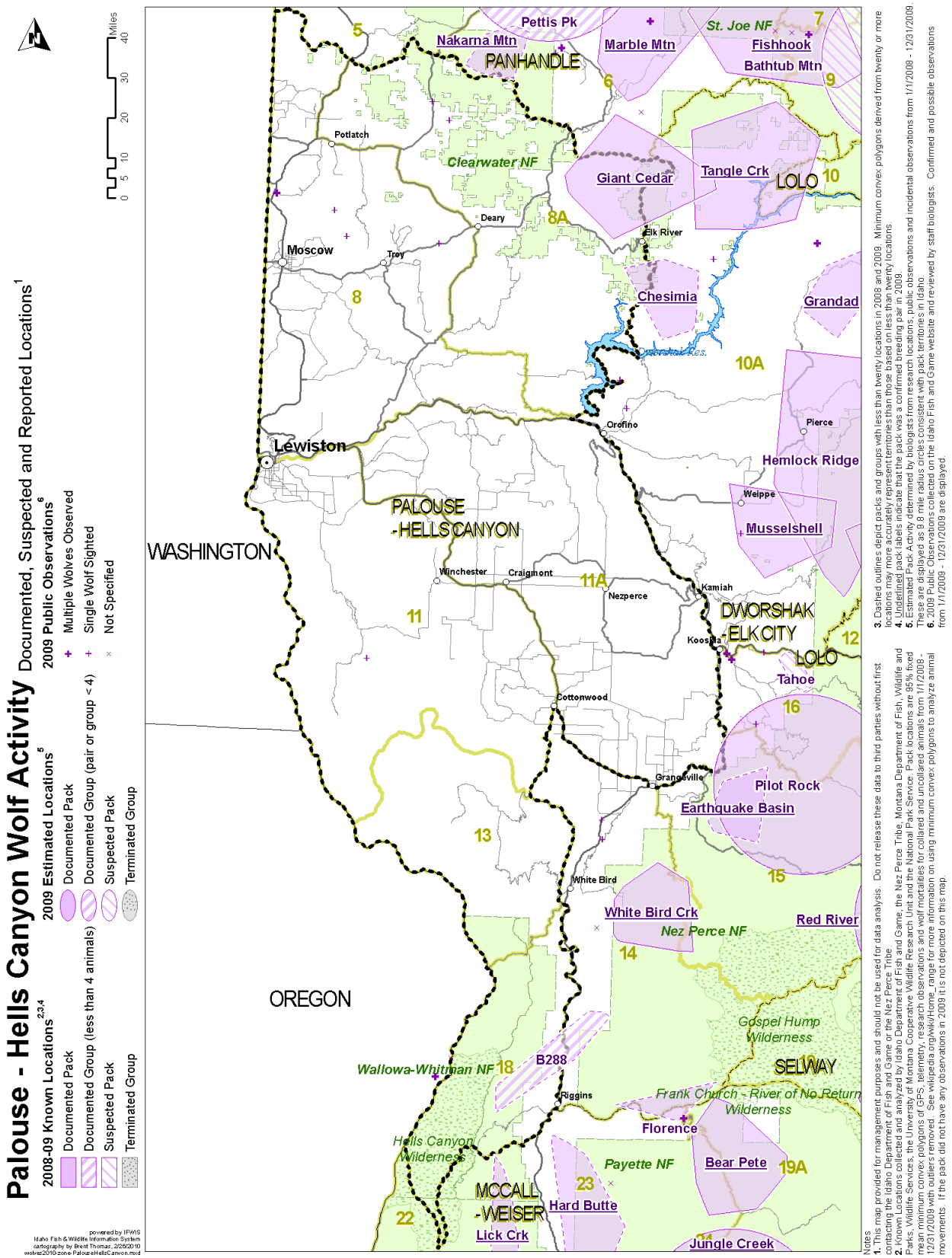
Management Summary

The Palouse-Hells Canyon Zone was home to a single documented pack, the Giant Cedar pack, and 1 other documented group by the end of 2009; the Cold Springs pack was no longer considered extant as no evidence of this pack has been verified for the past 2 years (Figure 11; Table 5).

The Giant Cedar pack qualified as a breeding pair (Table 5). Three pups were observed near the pack's traditional rendezvous site.

All documented wolf mortalities (n = 5) were attributed to harvest (Table 6) and the season closed on 18 December. All but 1 of the harvested wolves were likely members of the Giant Cedar pack. A wolf was harvested in the Winchester, Idaho, area and its pack affiliation, if any, was unknown. The harvest limit was reached and the season closed on 18 December.

One domestic cow was classified as a probable wolf kill in GMU 11A (Table 6). No wolf activity was documented in this area prior to the depredation.



Notes
1. This map provided for management purposes and should not be used for data analysis. Do not release these data to third parties without first contacting the Idaho Department of Fish and Game or the Nez Perce Tribe.
2. Known Locations collected and analyzed by Idaho Department of Fish and Game, the Nez Perce Tribe, Montana Department of Fish, Wildlife and Parks, Wildlife Services, the University of Montana Cooperative Wildlife Research Unit and the National Park Service. Pack locations are 95% fixed mean minimum convex polygons of GPS, telemetry, research observations and wolf mortalities for collared and uncollared animals from 1/1/2008 - 12/31/2009 with outliers removed. See wikipedia.org/wiki/Home_range for more information on using minimum convex polygons to analyze animal movements. If the pack did not have any observations in 2009 it is not depicted on this map.
3. Dashed outlines depict packs and groups with less than twenty locations in 2008 and 2009. Minimum convex polygons derived from twenty or more locations may more accurately represent territories than those based on less than twenty locations.
4. Underlined pack labels indicate that the pack was a confirmed breeding pair in 2009.
5. Estimated Pack Activity determined by biologists from research locations, public observations and incidental observations from 1/1/2008 - 12/31/2009. These are displayed as 9.8 mile radius circles consistent with pack territories in Idaho.
6. 2009 Public Observations collected on the Idaho Fish and Game website and reviewed by staff biologists. Confirmed and possible observations from 1/1/2009 - 12/31/2009 are displayed.

Figure 12. Distribution of documented and suspected wolf packs, other documented groups, and public wolf reports in the Palouse-Hells Canyon Wolf Management Zone, 2009.

Table 5. End of year summary of minimum number of wolves detected, reproductive status, dispersal, and monitoring status for documented and suspected wolf packs and other documented wolf groups within the Palouse-Hells Canyon Wolf Management Zone, 2009.

WOLF GROUP[a]	Min. no. wolves detected[b]	Reproductive status			Known dispersal	Monitoring status	
		Min. no. pups prod.(died)[c]	Reported as			No. wolf captures[e]	No. wolves missing[f]
			Reprod. pack	Breeding pair[d]			
DOCUMENTED PACK							
~~Cold Springs~~							
Giant Cedar	8	3	YES	YES	0	0	0
SUBTOTAL	8	3			0	0	0
SUSPECTED PACK							
SUBTOTAL	0	0			0	0	0
OTHER DOC. GROUP							
B288	2				0	0	0
SUBTOTAL	2	0			0	0	0
ZONE TOTAL	10	3			0	0	0

[a] Documented packs = territorial groups of wolves usually consisting of an adult male and female and their offspring from one or more generations, and has the potential to reproduce (2 adults of opposite sex). Suspected packs = geographic areas where wolf pack presence was suspected but not verified, or where wolf presence was verified but did not meet documented pack status. Other documented group = verified groups not meeting either documented or suspected pack status (e.g. lone wolves, potential mated pairs, etc.). Unknown = geographic areas where wolf presence was previously unverified and/or no data on group status was known.

[b] Minimum number of wolves detected within a pack at the end of the year. Summing this column does not equate to number of wolves estimated to be present in the zone.

[c] Number in parentheses indicates known pup mortality; pup mortalities tallied in the appropriate row/column in Documented mortality in Table 6.

[d] Breeding pairs are the measure of Federal and State wolf recovery and management goals. A breeding pair is defined as "an adult male and a female wolf that have produced at least 2 pups that survive until December 31 of the year of their birth…".

[e] Includes wolves captured for monitoring purposes during 2009. Most, but not all, were radiocollared.

[f] Radio collared wolves that became missing in 2009.

Table 6. End of year summary of documented wolf mortality and wolf-caused livestock depredations by Game Management Unit (GMU) within the Palouse-Hells Canyon Wolf Management Zone, 2009.

GMU	Documented mortality					Confirmed (probable) wolf-caused livestock losses			
	Natural	Control[a]	Harvest	Other human[b]	Unknown[c]	Cattle	Sheep	Dogs	Other
8	0	0	0	0	0	0	0	0	0
8A	0	0	4	0	0	0	0	0	0
11	0	0	0	0	0	0(1)	0	0	0
11A	0	0	1	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0
ZONE TOTAL	0	0	5	0	0	0(1)	0	0	0

[a] Includes agency lethal control and legal take (exclusive of wolf harvest)

[b] Includes all other human-related deaths.

[c] Does not include pups that disappeared before winter.

DWORSHAK-ELK CITY WOLF MANAGEMENT ZONE (GMUs 10A, 14, 15, 16)

Background

The Dworshak-Elk City Zone is comprised of GMUs 10A, 14, 15, and 16. Game Management Unit 10A, is predominantly timberland with the remainding areas in either open or agricultural lands, and is bisected by canyons leading to the Clearwater River. During the 1980s and 1990s, timber harvest occurred on almost all available state and private land as demand for timber and management of these lands intensified. In GMUs 14, 15, and 16, most of the land base is in public ownership with privately-owned portions at lower elevations along the Clearwater and Salmon Rivers. Productive conifer forests with intermixed grasslands characterized the majority of this zone. Many forested areas have become overgrown with lodgepole pine (*Pinus contorta*) and fir (*Abies sp*.) due to fire suppression during the past 40 years (Idaho Department of Fish and Game 2007). A small segment of this zone is federally designated Wilderness.

Major river drainages in, or bordering upon, this zone included the Salmon, South Fork Clearwater, Middle Fork Clearwater, main stem Clearwater, North Fork Clearwater, lower portion of the Selway, Crooked, American, Red, and Lolo Creek.

Management Direction

As outlined in the Wolf Plan, wolf-livestock and wolf-ungulate conflicts are currently considered moderate. Management direction for wolves in this zone is to decrease the number of wolves to the 2005-2007 level and subsequently stabilize it at that lower level (Idaho Department of Fish and Game 2008). The IDFG Commission established a harvest limit of 18 wolves for this zone during the 2009 harvest season set for 1 October through 31 December 2009.

Management Summary

The Dworshak-Elk City Zone was home to 12 documented packs, 1 suspected pack, and 1 other documented group during 2009 (Figure 12; Table 7). The Musselshell pack was newly documented. The O'Hara Point pack was removed as a documented pack as no evidence of this pack has been verified by Program personnel for the past 2 years, though unverified wolf activity was reported from this pack's territory in 2009. Consequently, eleven packs were considered extant at the end of 2009.

Seven of 8 reproductive packs qualified as breeding pairs (Table 7). The Hemlock Ridge pack did not qualify as a breeding pair as only 1 pup was verified. The reproductive status of 4 packs was unknown; none of these packs contained a radiocollared wolf, which made monitoring difficult.

Documented mortalities (n = 25) included control (agency removal and legal take; n = 4), harvest (n = 18), other human (illegal take, vehicle collision, etc.; n = 1) causes, and unknown (n = 2) causes (Table 8). The harvest limit was fulfilled and the season was closed on 16 November. A mortality signal was detected for male B318, radiocollared as a member of the Red River pack in

2007, near White Bird Summit, Idaho. This animal's signal was last detected in December 2007; condition of the remains indicated this wolf had been dead for over 1 year, so no cause of death was ascertained and this wolf does not appear in 2009 data.

Female B330 dispersed from the Hemlock Ridge pack and had apparently settled into an area that was formerly part of the Eldorado Creek pack's territory. Female B342, formerly of the Pilot Rock pack, was no longer considered a member of that pack, having moved north in 2008 into the area occupied by the suspected Tahoe pack and remained there throughout 2009.

Confirmed (n = 4) and probable (n = 1) wolf-caused cattle losses were attributed to the Chesimia, Earthquake Basin, and White Bird Creek packs accounting for a minimum 5 depredation events (Table 8). Two wolves were lethally controlled in both the Chesimia and White Bird Creek packs. No domestic sheep or dog losses were recorded. Three wolves were captured by Program personnel that resulted in the placement of 3 radiocollars.

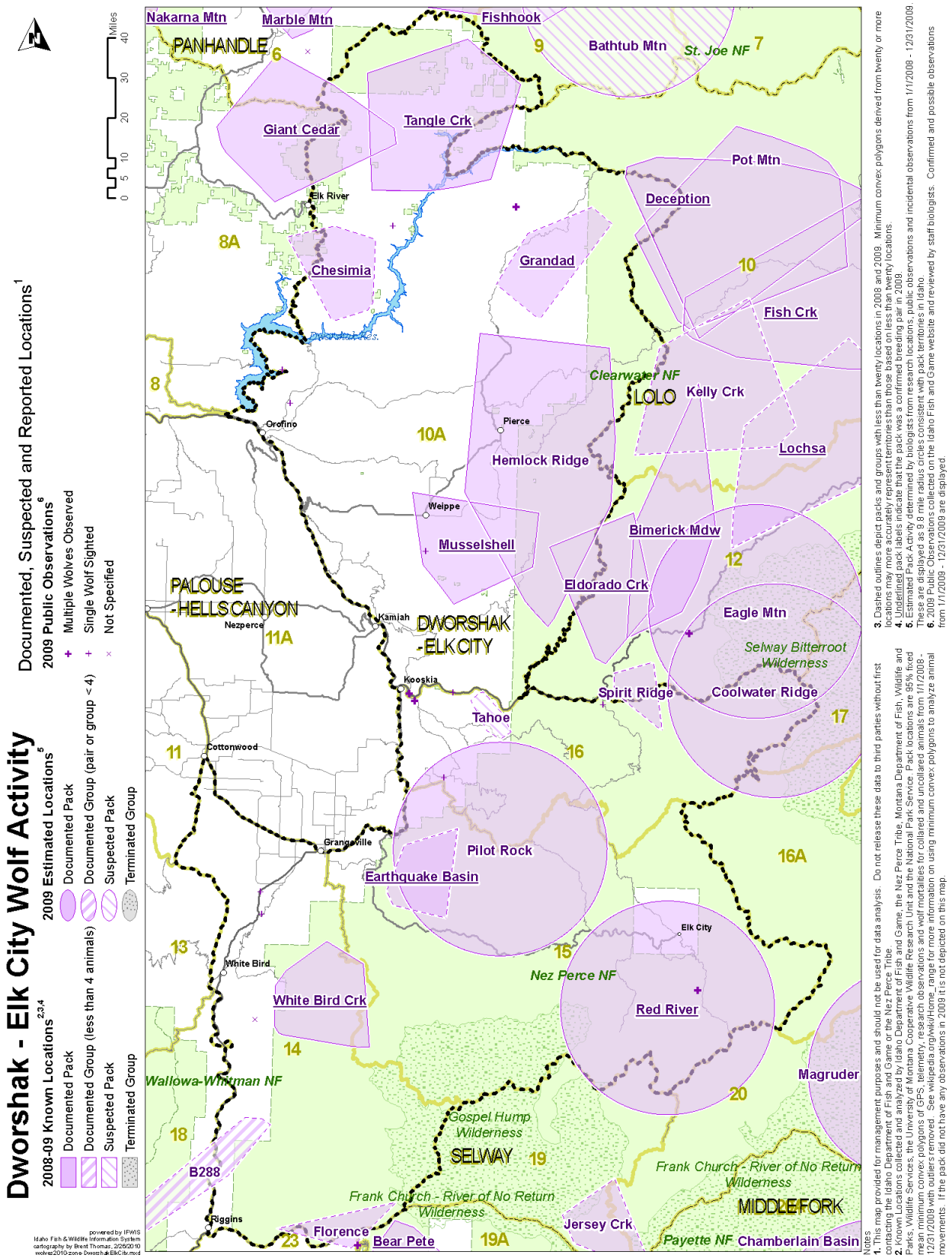


Figure 13. Distribution of documented and suspected wolf packs, other documented groups, and public wolf reports in the Dworshak-Elk City Wolf Management Zone, 2009.

Table 7. End of year summary of minimum number of wolves detected, reproductive status, dispersal, and monitoring status for documented and suspected wolf packs and other documented wolf groups within the Dworshak-Elk City Wolf Management Zone, 2009.

WOLF GROUP[a]	Min. no. wolves detected[b]	Reproductive status			Known dispersal	Monitoring status	
		Min. no. pups prod.(died)[c]	Reported as				
			Reprod. pack	Breeding pair[d]		No. wolf captures[e]	No. wolves missing[f]
DOCUMENTED PACK							
Chesimia	2	2	YES	YES	0	1	0
Coolwater Ridge	?	?	NO	NO	0	0	0
Earthquake Basin	6	5	YES	YES	0	0	0
Eldorado Creek	8	5	YES	YES	0	0	0
Florence	?	?	NO	NO	0	0	0
Grandad	10	4	YES	YES	0	2	0
Hemlock Ridge	?	1	YES	NO	1	0	0
Musselshell	2	2	YES	YES	0	0	0
~~O'Hara Point~~	0	?	NO	NO	0	0	0
Pilot Rock	?	?	NO	NO	0	0	0
Red River	?	5	YES	YES	0	0	0
White Bird Creek	6	2	YES	YES	0	0	0
SUBTOTAL	34	26			1	3	0
SUSPECTED PACK							
Tahoe (B342)	1				0	0	0
SUBTOTAL	1	0			0	0	0
OTHER DOC. GROUP							
B330	1				0	0	0
SUBTOTAL	1	0			0	0	0
ZONE TOTAL	36	26			1	3	0

[a] Documented packs = territorial groups of wolves usually consisting of an adult male and female and their offspring from one or more generations, and has the potential to reproduce (2 adults of opposite sex). Suspected packs = geographic areas where wolf pack presence was suspected but not verified, or where wolf presence was verified but did not meet documented pack status. Other documented group = verified groups not meeting either documented or suspected pack status (e.g. lone wolves, potential mated pairs, etc.). Unknown = geographic areas where wolf presence was previously unverified and/or no data on group status was known.

[b] Minimum number of wolves detected within a pack at the end of the year. Summing this column does not equate to number of wolves estimated to be present in the zone.

[c] Number in parentheses indicates known pup mortality; pup mortalities tallied in the appropriate row/column in Documented mortality in Table 8.

[d] Breeding pairs are the measure of Federal and State wolf recovery and management goals. A breeding pair is defined as "an adult male and a female wolf that have produced at least 2 pups that survive until December 31 of the year of their birth…".

[e] Includes wolves captured for monitoring purposes during 2009. Most, but not all, were radio collared.

[f] Radio collared wolves that became missing in 2009.

Table 8. End of year summary of documented wolf mortality and wolf-caused livestock depredations by Game Management Unit (GMU) within the Dworshak-Elk City Wolf Management Zone, 2009.

GMU	Documented mortality					Confirmed (probable) wolf-caused livestock losses			
	Natural	Control[a]	Harvest	Other human[b]	Unknown[c]	Cattle	Sheep	Dogs	Other
10A	0	2	13	1	2	1	0	0	0
14	0	2	1	0	0	2	0	0	0
15	0	0	3	0	0	1(1)	0	0	0
16	0	0	1	0	0	0	0	0	0
ZONE TOTAL	0	4	18	1	2	4(1)	0	0	0

[a] Includes agency lethal control and legal take (exclusive of wolf harvest)

[b] Includes all other human-related deaths.

[c] Does not include pups that disappeared before winter.

LOLO WOLF MANAGEMENT ZONE
(GMUs 10, 12)

Background

The Lolo Zone is primarily forested and land ownership is almost entirely publicly-owned national forests administered by the USFS. Historically, habitat productivity was high in this zone, but has decreased following decades of intensive fire suppression. Until the 1930s, wildfires were the primary habitat disturbance in this zone. Between 1900 and 1934, approximately 70% of the Lochsa River drainage was burned by wildfires. Approximately one-third of the zone provides good access for motorized vehicles with medium road densities. The remaining portion has low road densities, but contains good hiking trails. Between 1926 and 1990, over 1,181 miles (1900 km) of roads were built in this area to access marketable timber. State Highway 12 along the Lochsa River was completed in 1962 and is the primary travel corridor. In 1964, most of the southern portion of GMU 12 was designated as part of the Selway-Bitterroot Wilderness (Idaho Department of Fish and Game 2007).

Management Direction

As outlined in the Wolf Plan, wolf-livestock conflicts are classified as low, whereas wolf-ungulate conflicts are currently considered high. Management direction for wolves in this zone is to decrease the number of wolves and subsequently stabilize it at that lower level (Idaho Department of Fish and Game 2008). The IDFG Commission established a harvest limit of 27 wolves for this zone during the 2009 harvest season set from 1 September 2009 through 31 March 2010.

Management Summary

The Lolo Zone was home to 8 documented resident packs, 1 documented resident border pack, and 1 suspected resident pack during 2009 (Figure 13; Table 9); the Five Lakes Butte pack was removed as a documented pack as no evidence of this pack has been verified by Program personnel for the past 2 years. Four border packs tallied for Montana resided adjacent to this zone, including the Big Hole pack which counted for Idaho in 2008.

All 4 reproductive packs qualified as breeding pairs, while the reproductive status of 5 packs was unknown (Table 9). Monitoring of the latter packs was complicated by lack of radiocollared wolves during all or parts of the year, which prohibited locating den and rendezvous sites.

Documented mortalities (n = 10) included harvest (n = 5) and unknown (n = 5) causes (Table 10). A member of Montana's Big Hole pack was legally harvested in Idaho; that mortality was recorded in that state's report, but it was applied to the Idaho wolf harvest limit. One wolf that died of other human causes during wolf hunting season in Idaho was included in the overall wolf harvest limit for this zone, also. Because the harvest limit was not reached by the end of 2009, the season was lengthened through 31 March 2010 by the IDFG Commission at their November 2009 meeting

There were no confirmed or probable wolf-caused losses to domestic livestock or dogs (Table 10). Eleven wolves in 3 packs were captured by Program personnel, ten by helicopter and one by trapping.

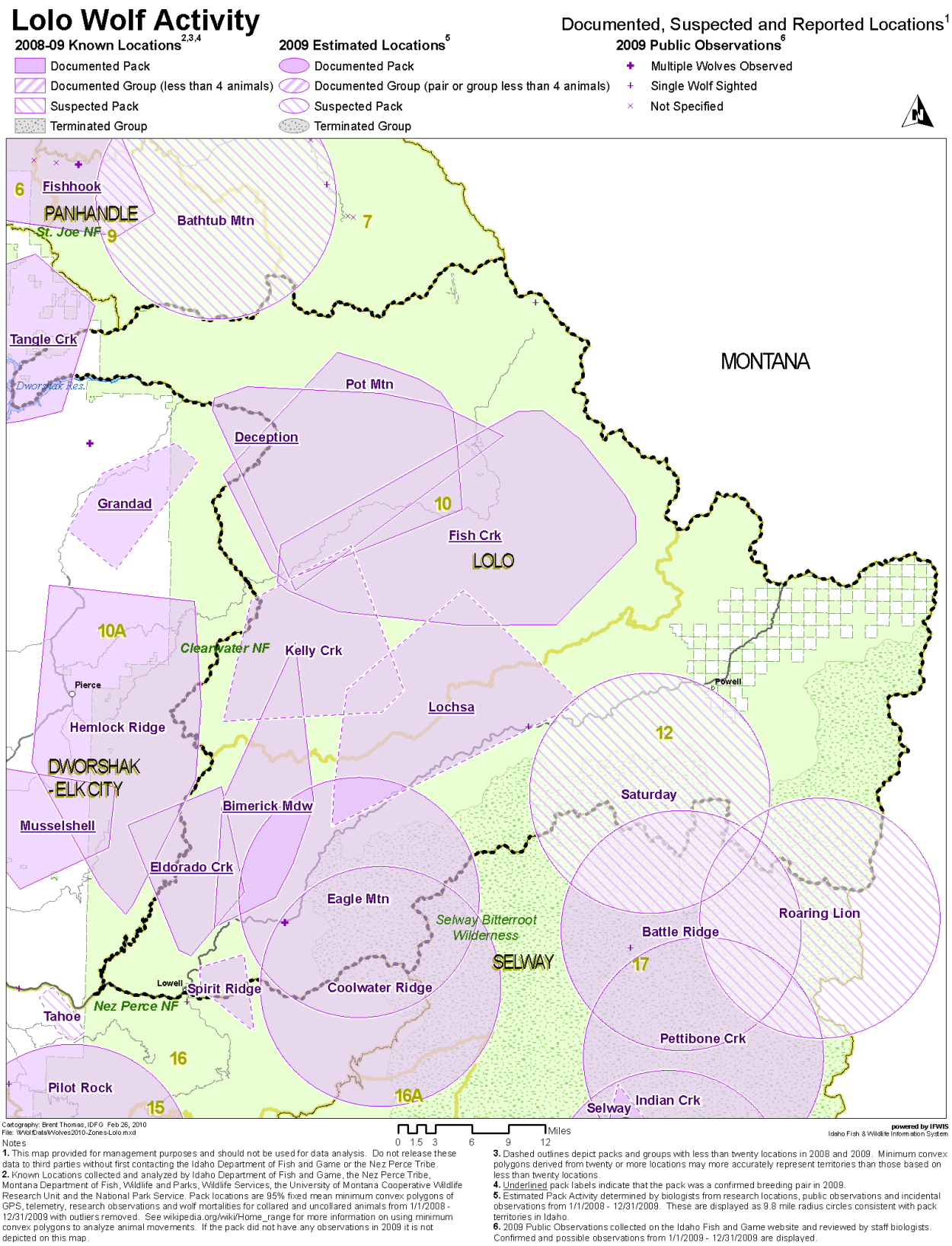


Figure 14. Distribution of documented and suspected wolf packs, other documented groups, and public wolf reports in the Lolo Wolf Management Zone, 2009.

Table 9. End of year summary of minimum number of wolves detected, reproductive status, dispersal, and monitoring status for documented and suspected wolf packs and other documented wolf groups within the Lolo Wolf Management Zone, 2009.

WOLF GROUP[a]	Min. no. wolves detected[b]	Reproductive status			Known dispersal	Monitoring status	
		Min. no. pups prod.(died)[c]	Reported as			No. wolf captures[e]	No. wolves missing[f]
			Reprod. pack	Breeding pair[d]			
DOCUMENTED PACK							
Big Hole (MT)[g]							
Bimerick Meadow	?	4	YES	YES	0	0	0
Bitterroot Range (MT)[g]							
Brooks Creek (MT)[g]							
Cache Creek (MT)[g]							
Deception	?	3	YES	YES	0	0	0
Eagle Mountain	?	?	NO	NO	0	0	0
Fish Creek (ID)[g]	?	6	YES	YES	0	7	3
~~Five Lakes Butte~~	0	?	NO	NO	0	0	0
Kelly Creek	6	?	NO	NO	0	1	0
Lochsa	15	2	YES	YES	0	0	0
Pot Mountain	?	?	NO	NO	0	3	2
Spirit Ridge	?	?	NO	NO	0	0	0
SUBTOTAL	21	15			0	11	0
SUSPECTED PACK							
Saturday	?				0	0	0
SUBTOTAL	0	0			0	0	0
OTHER DOC. GROUP							
SUBTOTAL	0	0			0	0	0
ZONE TOTAL	21	15			0	11	0

[a] Documented packs = territorial groups of wolves usually consisting of an adult male and female and their offspring from one or more generations, and has the potential to reproduce (2 adults of opposite sex). Suspected packs = geographic areas where wolf pack presence was suspected but not verified, or where wolf presence was verified but did not meet documented pack status. Other documented group = verified groups not meeting either documented or suspected pack status (e.g. lone wolves, potential mated pairs, etc.). Unknown = geographic areas where wolf presence was previously unverified and/or no data on group status was known.

[b] Minimum number of wolves detected within a pack at the end of the year. Summing this column does not equate to number of wolves estimated to be present in the zone.

[c] Number in parentheses indicates known pup mortality; pup mortalities tallied in the appropriate row/column in Documented mortality in Table 10.

[d] Breeding pairs are the measure of Federal and State wolf recovery and management goals. A breeding pair is defined as "an adult male and a female wolf that have produced at least 2 pups that survive until December 31 of the year of their birth…".

[e] Includes wolves captured for monitoring purposes during 2009. Most, but not all, were radio collared.

[f] Radiocollared wolves that became missing in 2009.

[g] Border packs officially tallied to (STATE); territory known/likely shared with ID. Data on these packs can be found in Rocky Mountain Wolf Recovery 2009 Annual Report or other source.

Table 10. End of year summary of documented wolf mortality and wolf-caused livestock depredations by Game Management Unit (GMU) within the Lolo Wolf Management Zone, 2009.

GMU	Documented mortality					Confirmed (probable) wolf-caused livestock losses			
	Natural	Control[a]	Harvest	Other human[b]	Unknown[c]	Cattle	Sheep	Dogs	Other
10	0	0	3	0	5	0	0	0	0
12	0	0	2[d]	0[e]	0	0	0	0	0
ZONE TOTAL	0	0	5[d]	0[e]	5	0	0	0	0

[a] Includes agency lethal control and legal take (exclusive of wolf harvest)
[b] Includes all other human-related deaths.
[c] Does not include pups that disappeared before winter.
[d] One wolf belonging to a Montana pack was legally harvested in Idaho, counted towards the Idaho zone and statewide harvest limit, and is reported in that State's annual report.
[e] One wolf tallied by Montana died in this GMU and is reported in that State's annual report .

SELWAY WOLF MANAGEMENT ZONE (GMUs 16A, 17, 19, 20)

Background

Habitat within the Selway Zone varies from high-precipitation, forested areas along the lower reaches of the Selway River to dry, steep, south-facing Ponderosa pine and grassland habitat along the Salmon River. Many areas along the Salmon River represent a mix of successional stages due to frequent fires within the wilderness. Fire suppression within portions of the Selway River drainage has led to decreasing forage production for big game. Road densities are low. Noxious weeds, especially spotted knapweed (*Centaurea stoebe*), have encroached upon many low-elevation areas (Idaho Department of Fish and Game 2007). Due to the rugged and remote nature of this zone, human impacts have been limited. In 1964, almost all of GMU 17 and a small portion of GMU 16A were included in the Selway-Bitterroot Wilderness. Most of GMU 19 became part of the Gospel Hump Wilderness in 1978, and in 1980, part of GMU 20 was included in the Frank Church River-of-No-Return Wilderness (Idaho Department of Fish and Game 2007).

Management Direction

As outlined in the Wolf Plan, wolf-livestock conflicts are considered low, while wolf-ungulate conflicts are currently considered high. Management direction for wolves in this zone is to decrease the number of wolves and subsequently stabilize it at that lower level (Idaho Department of Fish and Game 2008). The IDFG Commission established a harvest limit of 17 wolves for this zone during the 2009 harvest season initially set for 1 October 2009 through 31 December 2009.

Management Summary

The Selway Zone was home to 7 documented packs and 2 other documented groups during 2009 (Figure 14; Table 11); the Gospel Hump pack was no longer considered extant by the end of the year and was removed as a documented pack for lack of verified wolf activity for the preceding 2

years. Six packs remained extant at the end of 2009. Two border packs tallied for Montana resided adjacent to this zone.

Reproductive status was not known for any of the documented resident packs due to the remote nature of this zone (Table 11). Only one of these packs contained a radiocollared individual during 2009.

Six wolves were legally harvested within this zone, which accounted for all known mortality (Table 12). Because the harvest limit was not reached, the season was lengthened through 31 March 2010 by the IDFG Commission at their November 2009 meeting. This predominantly wilderness zone contained few domestic livestock and no losses were reported (Table 12). The sole radiocollared wolf in the Selway pack, female B356, dispersed from the pack. No wolf capture efforts were undertaken in this zone.

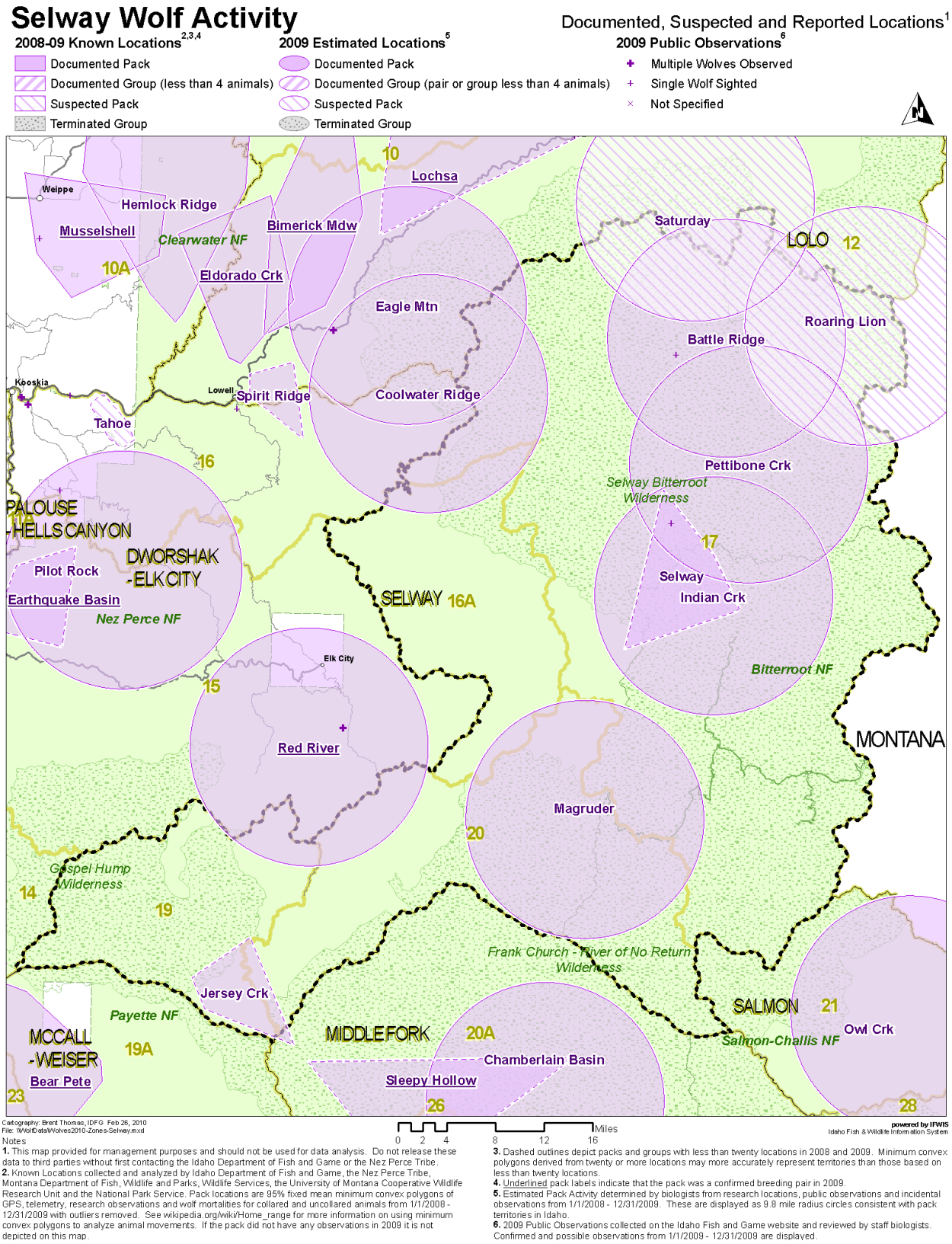


Figure 15. Distribution of documented and suspected wolf packs, other documented groups, and public wolf reports in the Selway Wolf Management Zone, 2009.

Table 11. End of year summary of minimum number of wolves detected, reproductive status, dispersal, and monitoring status for documented and suspected wolf packs and other documented wolf groups within the Selway Wolf Management Zone, 2009.

WOLF GROUP[a]	Min. no. wolves detected[b]	Reproductive status			Known dispersal	Monitoring status	
		Min. no. pups prod.(died)[c]	Reported as			No. wolf captures[e]	No. wolves missing[f]
			Reprod. pack	Breeding pair[d]			
DOCUMENTED PACK							
Battle Ridge	?	?	NO	NO	0	0	0
~~Gospel Hump~~	0	?	NO	NO	0	0	0
Indian Creek	?	?	NO	NO	0	0	0
Jersey Creek	5	?	NO	NO	0	0	0
Lake Como (MT)[g]							
Magruder	?	?	NO	NO	0	0	0
Pettibone Creek	?	?	NO	NO	0	0	0
Selway	?	?	NO	NO	1	0	0
Watchtower (MT)[g]							
SUBTOTAL	5	0			1	0	0
SUSPECTED PACK							
SUBTOTAL	0	0			0	0	0
OTHER DOC. GROUP							
Roaring Lion (ID)[g]	?				0	0	0
B356	1				0	0	0
SUBTOTAL	1	0			0	0	0
ZONE TOTAL	6	0			1	0	0

[a] Documented packs = territorial groups of wolves usually consisting of an adult male and female and their offspring from one or more generations, and has the potential to reproduce (2 adults of opposite sex). Suspected packs = geographic areas where wolf pack presence was suspected but not verified, or where wolf presence was verified but did not meet documented pack status. Other documented group = verified groups not meeting either documented or suspected pack status (e.g. lone wolves, potential mated pairs, etc.). Unknown = geographic areas where wolf presence was previously unverified and/or no data on group status was known.

[b] Minimum number of wolves detected within a pack at the end of the year. Summing this column does not equate to number of wolves estimated to be present in the zone.

[c] Number in parentheses indicates known pup mortality; pup mortalities tallied in the appropriate row/column in Documented mortality in Table 12.

[d] Breeding pairs are the measure of Federal and State wolf recovery and management goals. A breeding pair is defined as "an adult male and a female wolf that have produced at least 2 pups that survive until December 31 of the year of their birth…".

[e] Includes wolves captured for monitoring purposes during 2009. Most, but not all, were radiocollared.

[f] Radiocollared wolves that became missing in 2009.

[g] Border packs officially tallied to (STATE); territory known/likely shared with ID. Data on these packs can be found in Rocky Mountain Wolf Recovery 2009 Annual Report or other source.

Table 12. End of year summary of documented wolf mortality and wolf-caused livestock depredations by Game Management Unit (GMU) within the Selway Wolf Management Zone, 2009.

GMU	Documented mortality					Confirmed (probable) wolf-caused livestock losses			
	Natural	Control[a]	Harvest	Other human[b]	Unknown[c]	Cattle	Sheep	Dogs	Other
16A	0	0	2	0	0	0	0	0	0
17	0	0	2	0	0	0	0	0	0
19	0	0	1	0	0	0	0	0	0
20	0	0	1	0	0	0	0	0	0
ZONE TOTAL	0	0	6	0	0	0	0	0	0

[a] Includes agency lethal control and legal take (exclusive of wolf harvest)

[b] Includes all other human-related deaths.

[c] Does not include pups that disappeared before winter.

MCCALL-WEISER WOLF MANAGEMENT ZONE
(GMUs 19A, 22, 23, 24, 25, 31, 32, 32A)

Background

The McCall-Weiser Zone is composed of GMUs 19A, 22-25, 31, 32, and 32A. Over 70% of the land area in GMUs 19A, 23, 24, and 25 is in public ownership and management. The Little Salmon River and North Fork Payette River valley bottoms comprise most of the private ownership. Private land in these GMUs is predominantly agricultural or rural subdivision in nature. Timber harvest and livestock grazing are prevalent. Several large fires have burned in this zone in the last decade. Road densities are relatively low in GMUs 19A and 25. Road densities in GMUs 23 and 24 are moderate to high (Idaho Department of Fish and Game 2007). Active timber harvest programs are anticipated to dramatically increase these road densities in the near future (Idaho Department of Fish and Game 2007).

About 60% of GMUs 22 and 32A and 20% of GMU 32 is in public ownership and management. Privately-owned land comprised much of the western portion of GMU 32 and the Weiser River Valley of GMUs 22 and 32A (Idaho Department of Fish and Game 2007). Timber harvest and livestock grazing are prevalent. Most forested habitat is in the early- to mid-successional stage. Andrus Wildlife Management Area in the southwest portion of GMU 22 is managed for elk and mule deer winter range and encompasses about 8,000 acres (3,237 ha). Active timber harvest programs are anticipated to increase already high road densities in the near future (Idaho Department of Fish and Game 2007).

About 50% of GMU 31 is in public ownership and management. Privately-owned land comprised much of the southern and eastern portions of the GMU. Higher elevations are timbered, whereas lower elevations are primarily shrub-steppe or desert habitat types. Timber harvest, livestock grazing, and prescribed fires have occurred. Active timber harvest programs are anticipated to increase road densities in the near future (Idaho Department of Fish and Game 2007).

Management Direction

As outlined in the Wolf Plan, wolf-livestock are currently considered high, whereas wolf-ungulate conflicts are considered low. Management direction for wolves in this zone is to decrease the number of wolves to the 2005-2007 level and subsequently stabilize it at that level (Idaho Department of Fish and Game 2008). The IDFG Commission established a harvest limit of 15 wolves for this zone during the 2009 harvest season set for 1 October 2009 through 31 December 2009.

Management Summary

The McCall-Weiser Zone was home to 12 documented packs and 3 other documented groups during 2009 (Figure 15; Table 13), including the newly discovered Pen Basin and Horsethief packs. The latter pack was probably composed of the remaining Orphan pack members, a pack which was removed in 2008 as a documented pack as its status could not be determined during

the previous 2 years. The Sweet-Ola pack was upgraded to documented pack status in 2009. Male wolf B344, a disperser from the Coolwater Ridge pack, was removed as an other documented group upon his death.

Five of 9 reproductive packs qualified as breeding pairs (Table 13). The following packs did not meet breeding pair criteria: Hornet Creek (only 1 pup was verified); Horsethief (the only known pup was harvested); Pen Basin (one of the 2 documented pups was illegally shot); and Snake River (all six of their pups were lethally controlled). The Blue Bunch and Stolle Meadows packs were believed to not have produced litters of pups in 2009 and the reproductive status of the Thunder Mountain pack was undetermined.

Documented mortalities (n = 44) included control (agency removal and legal take; n = 28), harvest (n = 14), other human (illegal take, vehicle collision, etc.; n = 1), and unknown (n = 1) causes (Table 14). The wolf that died of other human cause was illegally killed outside of the zones's hunting season, but was counted against the harvest limit. The harvest limit was achieved by 8 November and resulted in the season's closure.

Female B380 was considered to have dispersed from the Stolle Meadows pack as she was not located with the other radiocollared member of that pack and inhabited an area believed to be outside of their territory. Former breeding female B288 of the Lick Creek pack also dispersed.

Confirmed (n = 21) and probable (n = 7) wolf-caused cattle losses were attributed to the Blue Bunch, Hard Butte, Hornet Creek, Horsethief, Snake River, and Stolle Meadows packs and an unknown wolf group accounting for a minimum of 24 depredation events resulting in cattle killed by wolves (Table 14). Confirmed (n = 22) wolf-caused domestic sheep losses were attributed to the Bear Pete, Hornet Creek, and Jungle Creek packs accounting for a minimum 6 depredation events. Confirmed (n = 3) and probable (n = 1) wolf-caused losses domestic dogs were attributed to the Blue Bunch and Sweet-Ola packs, with wolves from neighboring zones (Bear Wallow and Wolf Fang) also involved in attacks on dogs in the McCall-Weiser Zone. Four wolves in 4 packs were captured by Program personnel that resulted in the placement of 2 new radiocollars and replacement of two. In addition, a wolf from the neighboring Middle Fork Zone was captured in the McCall-Weiser Zone.

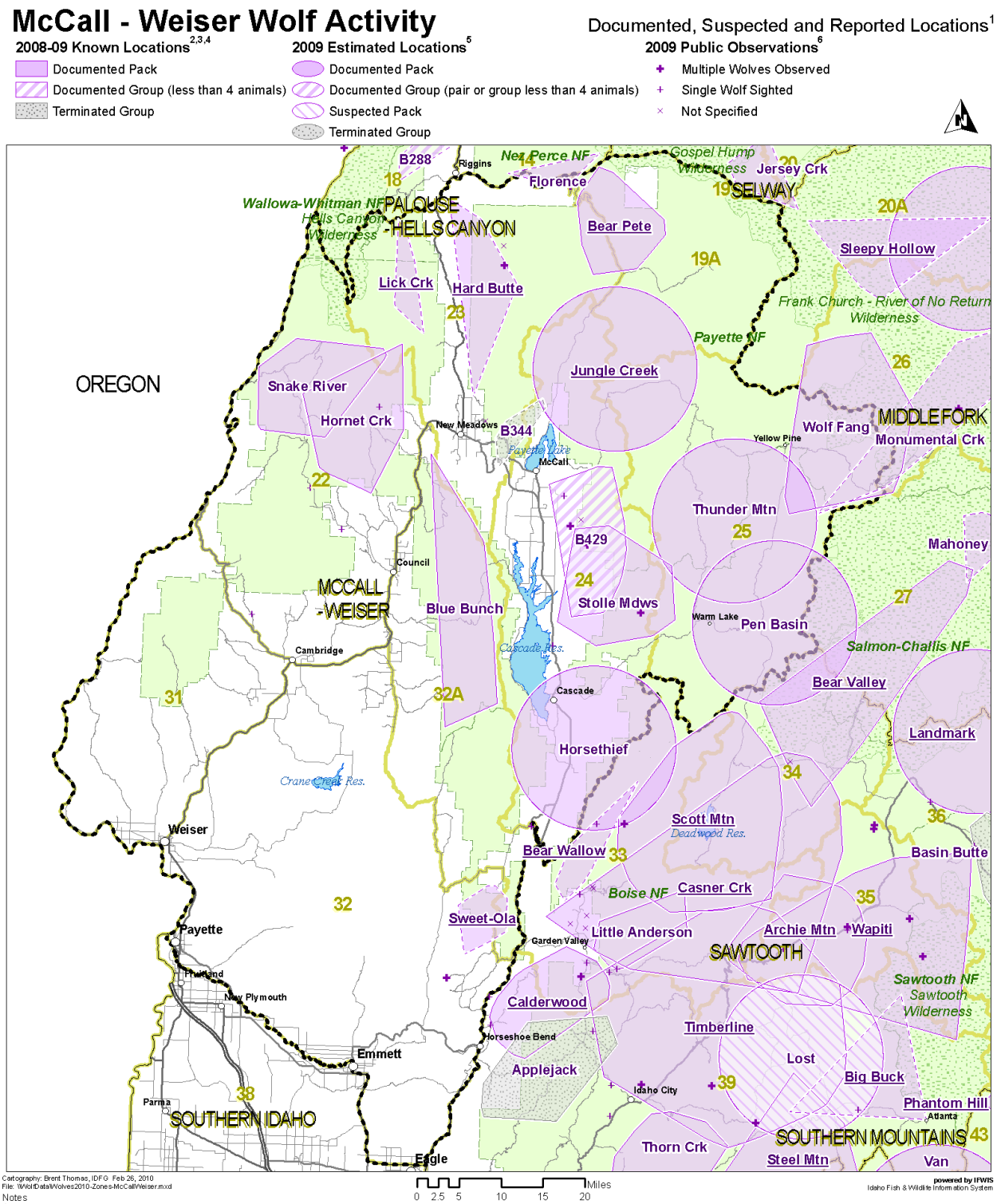


Figure 16. Distribution of documented and suspected wolf packs, other documented groups, and public wolf reports in the McCall-Weiser Wolf Management Zone, 2009.

Table 13. End of year summary of minimum number of wolves detected, reproductive status, dispersal, and monitoring status for documented and suspected wolf packs and other documented wolf groups within the McCall-Weiser Wolf Management Zone, 2009.

WOLF GROUP[a]	Min. no. wolves detected[b]	Reproductive status			Known dispersal	Monitoring status	
		Min. no. pups prod.(died)[c]	Reported as			No. wolf captures[e]	No. wolves missing[f]
			Reprod. pack	Breeding pair[d]			
DOCUMENTED PACK							
Bear Pete	5	6	YES	YES	0	0	0
Blue Bunch	5	0	NO	NO	0	1	0
Hard Butte	5	5(1)	YES	YES	0	1	0
Hornet Creek	3	1	YES	NO	0	0	0
Horsethief	?	1(1)	YES	NO	0	0	0
Jungle Creek	?	4	YES	YES	0	0	0
Lick Creek	?	4	YES	YES	1	0	0
Pen Basin	?	2(1)	YES	NO	0	0	0
Snake River	3	6(6)	YES	NO	0	2	0
Stolle Meadows	?	0	NO	NO	1	0	0
Sweet-Ola	10	3	YES	YES	0	0	0
Thunder Mountain	?	?	NO	NO	0	0	0
SUBTOTAL	31	32(9)			2	4	0
SUSPECTED PACK							
SUBTOTAL	0	0			0	0	0
OTHER DOC. GROUP							
~~B344~~	?				0	0	0
B380	?				0	0	0
B429	3				0	0	0
Border Zone (Wolf Fang)					0	1	0
SUBTOTAL	3	0			0	1	0
ZONE TOTAL	34	32(9)			2	5	0

[a] Documented packs = territorial groups of wolves usually consisting of an adult male and female and their offspring from one or more generations, and has the potential to reproduce (2 adults of opposite sex). Suspected packs = geographic areas where wolf pack presence was suspected but not verified, or where wolf presence was verified but did not meet documented pack status. Other documented group = verified groups not meeting either documented or suspected pack status (e.g. lone wolves, potential mated pairs, etc.). Unknown = geographic areas where wolf presence was previously unverified and/or no data on group status was known.

[b] Minimum number of wolves detected within a pack at the end of the year. Summing this column does not equate to number of wolves estimated to be present in the zone.

[c] Number in parentheses indicates known pup mortality; pup mortalities tallied in the appropriate row/column in Documented mortality in Table 14.

[d] Breeding pairs are the measure of Federal and State wolf recovery and management goals. A breeding pair is defined as "an adult male and a female wolf that have produced at least 2 pups that survive until December 31 of the year of their birth…".

[e] Includes wolves captured for monitoring purposes during 2009. Most, but not all, were radiocollared.

[f] Radiocollared wolves that became missing in 2009.

Table 14. End of year summary of documented wolf mortality and wolf-caused livestock depredations by Game Management Unit (GMU) within the McCall-Weiser Wolf Management Zone, 2009.

GMU	Documented mortality					Confirmed (probable) wolf-caused livestock losses			
	Natural	Control[a]	Harvest	Other human[b]	Unknown[c]	Cattle	Sheep	Dogs	Other
19A	0	1	0	0	0	0	5	0	0
22	0	14	1	0	0	11(1)	0	0	0
23	0	4	5	0	1	2	5	0	0
24	0	2	4	0	0	6(2)	12	1	0
25	0	1	2	1[d]	0	0	0	1	0
31	0	0	0	0	0	0	0	0	0
32	0	0	1	0	0	0(1)	0	0(1)	0
32A	0	6	1	0	0	2(3)	0	1	0
ZONE TOTAL	0	28	14	1[d]	1	21(7)	22	3(1)	0

[a] Includes agency lethal control and legal take (exclusive of wolf harvest)
[b] Includes all other human-related deaths.
[c] Does not include pups that disappeared before winter.
[d] Wolf counted against harvest harvest limit.

MIDDLE FORK WOLF MANAGEMENT ZONE (GMUs 20A 26, 27)

Background

The Middle Fork Zone is primarily a Wilderness management unit. That portion of the Middle Fork Zone comprised of GMUs 20A and 26, is predominantly within the federally designated Frank Church River-of-No-Return Widerness. That portion comprised of GMU 27 is primarily publicly-owned national forest lands within the Middle Fork of the Salmon River drainage. Large areas of the Wilderness have burned creating a patchwork of vegetative seral stages (Idaho Department of Fish and Game 2007).

Management Direction

As outlined in the Wolf Plan, wolf-livestock are currently considered low, whereas wolf-ungulate conflicts are considered moderate. Management direction for wolves in this zone is to stabilize the number of wolves at the 2005-2007 level (Idaho Department of Fish and Game 2008). The IDFG Commission established a harvest limit of 17 wolves for this zone during the 2009 harvest season initially set for 1 October 2009 through 31 December 2009.

Management Summary

The Middle Fork Zone was occupied by 8 documented wolf packs during 2009 (Figure 16; Table 15). Wolf B332's group status was upgraded from other documented wolf group in 2008 to documented pack in 2009. This new pack was named Mahoney.

Four of 5 reproductive packs qualified as breeding pairs; no pup count was obtained for the Monumental Creek pack though there was evidence of a litter (Table 15). The reproductive

statuses of the Chamberlain Basin, Mahoney, and Wolf Fang packs were unknown. The Chamberlain Basin and Wolf Fang packs lacked radiocollared wolves, therefore monitoring was difficult.

Documented mortalities (*n* = 17) included harvest (*n* = 14), other human (illegal take, vehicle collision, etc.; *n* = 1), and unknown (*n* = 2) causes (Table 16). Female B215's death (other human caused mortality; Bear Valley pack), was counted toward the zone harvest limit. Because the harvest limit was not reached, the season was lengthened through 31 March 2010 by the IDFG Commission at their November 2009 meeting.

This predominantly Wilderness zone contains few domestic livestock and no losses were reported (Table 16). The remoteness of this zone generally has hindered trapping operations. An unsuccessful capture effort was undertaken in this zone for the Monumental Creek pack. Four of the known packs (Chamberlain Basin, Landmark, Monumental Creek, and Wolf Fang) did not have any radiocollared members during 2009.

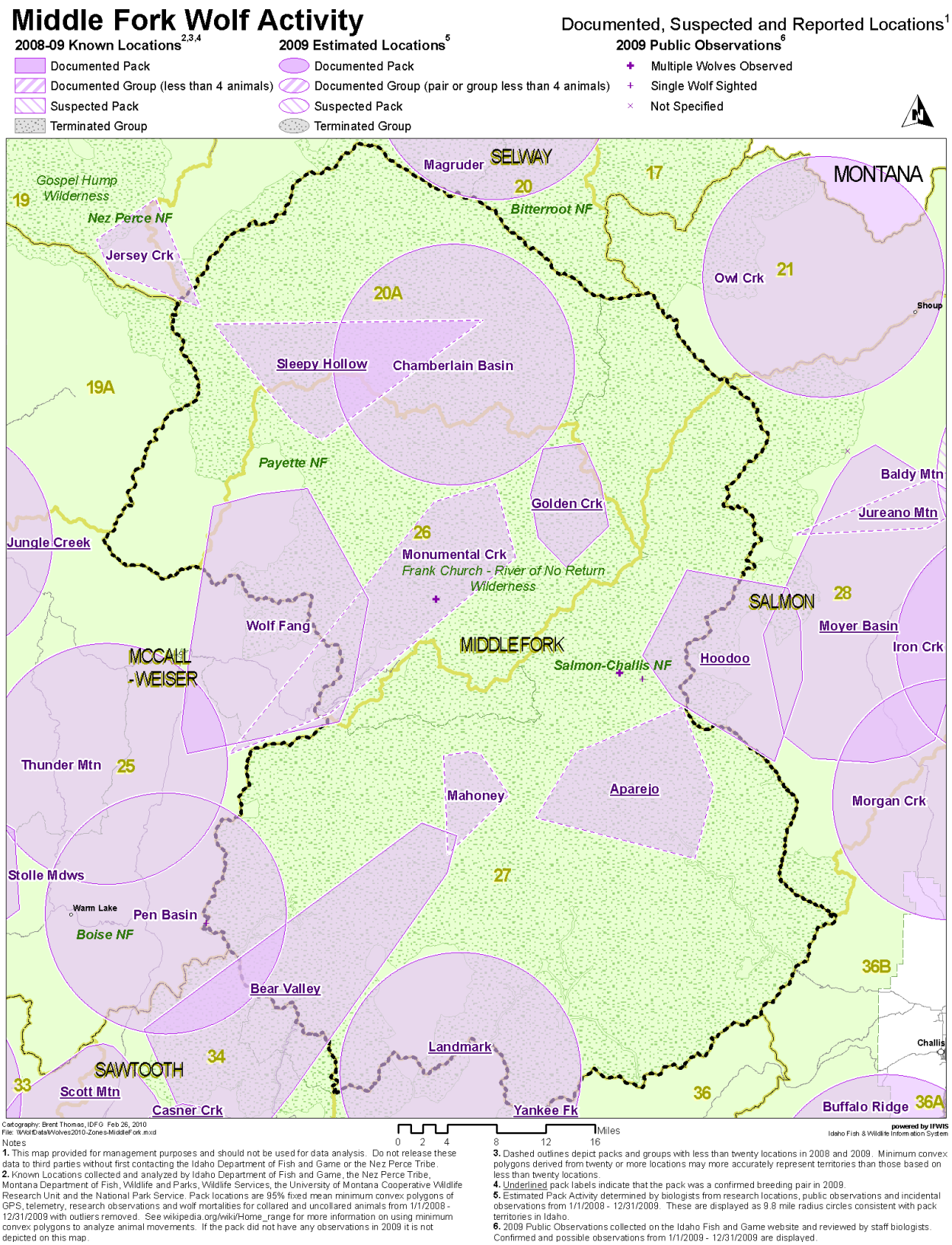


Figure 17. Distribution of documented and suspected wolf packs, other documented groups, and public wolf reports in the Middle Fork Wolf Management Zone, 2009.

Table 15. End of year summary of minimum number of wolves detected, reproductive status, dispersal, and monitoring status for documented and suspected wolf packs and other documented wolf groups within the Middle Fork Wolf Management Zone, 2009.

WOLF GROUP[a]	Min. no. wolves detected[b]	Reproductive status			Known dispersal	Monitoring status	
		Min. no. pups prod.(died)[c]	Reported as				
			Reprod. pack	Breeding pair[d]		No. wolf captures[e]	No. wolves missing[f]
DOCUMENTED PACK							
Aparejo	11	2	YES	YES	0	0	0
Chamberlain Basin	?	?	NO	NO	0	0	0
Golden Creek	8	5	YES	YES	0	0	0
Landmark	?	3	YES	YES	0	0	0
Mahoney	6	?	NO	NO	0	0	0
Monumental Creek	9	1	YES	NO	0	0	0
Sleepy Hollow	?	2	YES	YES	0	0	0
Wolf Fang	?	?	NO	NO	0	0	0
SUBTOTAL	34	13			0	0	0
SUSPECTED PACK							
SUBTOTAL	0	0			0	0	0
OTHER DOC. GROUP							
Border Zone (Bear Valley)					0	1	0
SUBTOTAL	0	0			0	1	0
ZONE TOTAL	34	13(1[g])			0	1	0

[a] Documented packs = territorial groups of wolves usually consisting of an adult male and female and their offspring from one or more generations, and has the potential to reproduce (2 adults of opposite sex). Suspected packs = geographic areas where wolf pack presence was suspected but not verified, or where wolf presence was verified but did not meet documented pack status. Other documented group = verified groups not meeting either documented or suspected pack status (e.g. lone wolves, potential mated pairs, etc.). Unknown = geographic areas where wolf presence was previously unverified and/or no data on group status was known.

[b] Minimum number of wolves detected within a pack at the end of the year. Summing this column does not equate to number of wolves estimated to be present in the zone.

[c] Number in parentheses indicates known pup mortality; pup mortalities tallied in the appropriate row/column in Documented mortality in Table 16.

[d] Breeding pairs are the measure of Federal and State wolf recovery and management goals. A breeding pair is defined as "an adult male and a female wolf that have produced at least 2 pups that survive until December 31 of the year of their birth…".

[e] Includes wolves captured for monitoring purposes during 2009. Most, but not all, were radiocollared.

[f] Radiocollared wolves that became missing in 2009.

[g] Pack affiliation of 1 pup harvested in this zone was not known.

Table 16. End of year summary of documented wolf mortality and wolf-caused livestock depredations by Game Management Unit (GMU) within the Middle Fork Wolf Management Zone, 2009.

GMU	Documented mortality					Confirmed (probable) wolf-caused livestock losses			
	Natural	Control[a]	Harvest	Other human[b]	Unknown[c]	Cattle	Sheep	Dogs	Other
20A	0	0	5	0	0	0	0	0	0
26	0	0	2	0	2	0	0	0	0
27	0	0	7	1[d]	0	0	0	0	0
ZONE TOTAL	0	0	14	1[d]	2	0	0	0	0

[a] Includes agency lethal control and legal take (exclusive of wolf harvest)

[b] Includes all other human-related deaths.

[c] Does not include pups that disappeared before winter.

[d] Wolf counted against harvest limit.

SAWTOOTH WOLF MANAGEMENT ZONE
(GMUs 33, 34, 35, 36, 39)

Background

Access within the Sawtooth Zone ranges from heavily roaded urban areas to roadless wilderness areas. The majority of this zone is forested public land administered by the Boise and Sawtooth National Forests. However, significant portions of private agricultural land also exist in the Mayfield and Horseshoe Bend, Idaho areas. The Treasure Valley, Idaho's largest metropolitan area, is also in found in this zone. The climate tends to be warm and dry in the summer and wet and cold in the winter. Lower elevations tend to receive more rain in the winter trending to heavy snow in higher elevations (Idaho Department of Fish and Game 2007).

Management Direction

As outlined in the Wolf Plan, wolf-livestock and wolf-ungulate conflict levels are currently considered moderate, with the potential for wolf-livestock conflicts to increase over time. Management direction for wolves in this zone is to stabilize the number of wolves at the 2005-2007 level (Idaho Department of Fish and Game 2008). The IDFG Commission established a harvest limit of 55 wolves for this zone during the 2009 harvest season set from 1 September 2009 through 31 March 2010.

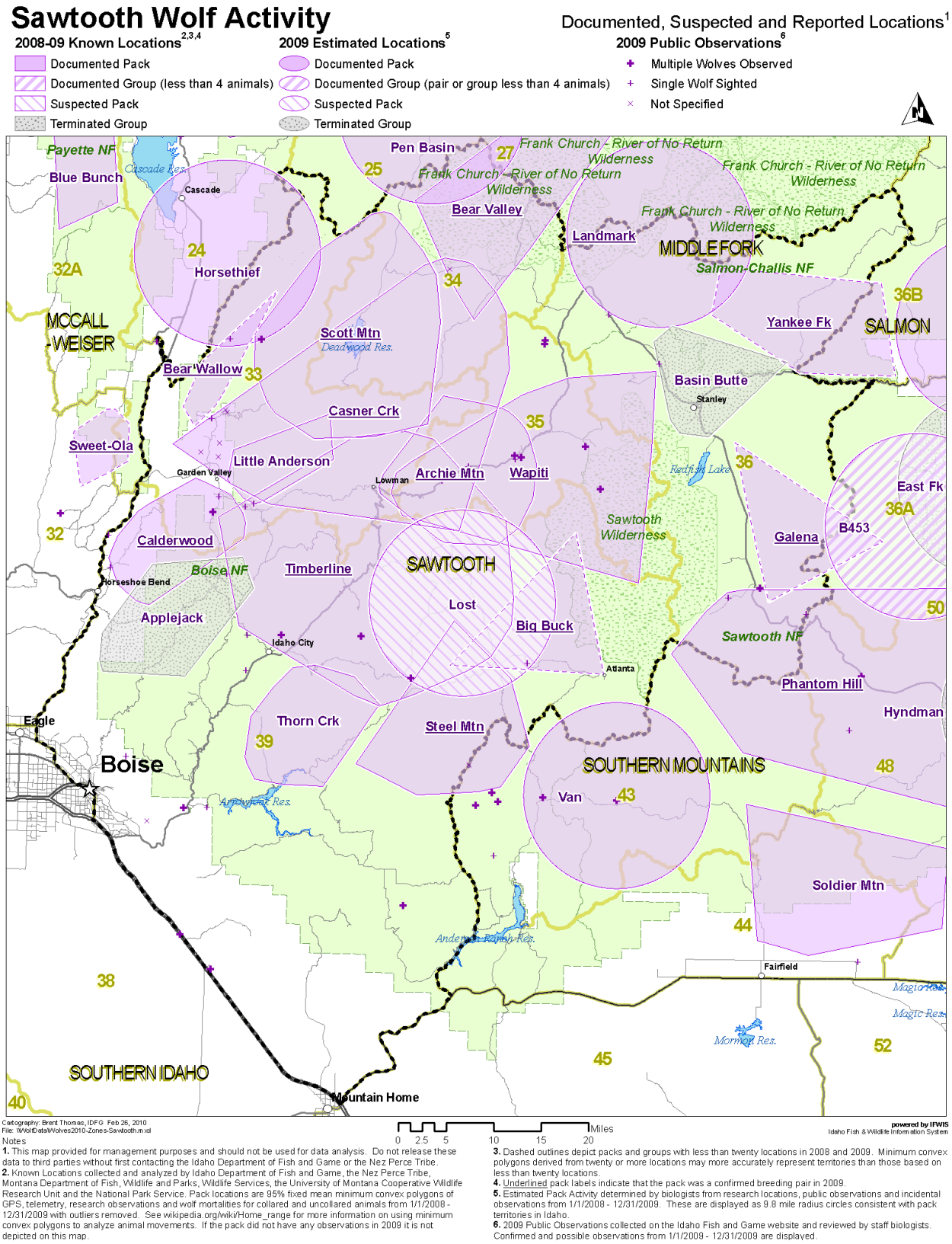
Management Summary

The Sawtooth Zone was home to16 documented wolf packs during 2009 (2 packs were considered no longer extant by the end of the year), 1 suspected pack, and 4 other documented groups (2 groups were considered no longer extant by the end of the year (Figure 17; Table 17).

Fifteen packs produced litters of pups and twelve were counted as breeding pairs (Table 17). The reproductive status of the Applejack pack was uncertain due to lethal removals.

Documented mortalities (n = 77) included natural (n = 1), control (agency removal and legal take; n = 28), harvest (n = 33), other human (illegal take, vehicle collision, etc.; n = 7), and unknown (n = 8) causes (Table 18). One wolf that died of other human cause was incidentally killed in a snare set for another species, and was counted towards the overall wolf harvest limit for this zone. By the end of 2009, 34 wolves had been taken and the season will continue until 31 March 2010 as initially set.

Confirmed (n = 6) and probable (n = 3) wolf-caused cattle losses were attributed to the Applejack and Basin Butte packs and unknown wolf groups (Table 18). Confirmed (n = 79) and probable (n = 81) wolf-caused domestic sheep losses were attributed to the Applejack, Bear Wallow, Galena, Phantom Hill, Steel Mountain, Thorn Creek, and Timberline packs and unknown wolf groups (Table 17). Confirmed (n = 2) wolf-caused domestic dog losses were attributed to the Phantom Hill pack. Thirty-three wolves in 10 packs or other wolf groups were captured by Program personnel resulting in placement of 27 new radiocollars and replacement of six.



Notes

1. This map provided for management purposes and should not be used for data analysis. Do not release these data to third parties without first contacting the Idaho Department of Fish and Game or the Nez Perce Tribe.

2. Known Locations collected and analyzed by Idaho Department of Fish and Game, the Nez Perce Tribe, Montana Department of Fish, Wildlife and Parks, Wildlife Services, the University of Montana Cooperative Wildlife Research Unit and the National Park Service. Pack locations are 95% fixed mean minimum convex polygons of GPS, telemetry, research observations and wolf mortalities for collared and uncollared animals from 1/1/2008 - 12/31/2009 with outliers removed. See wikipedia.org/wiki/Home_range for more information on using minimum convex polygons to analyze animal movements. If the pack did not have any observations in 2009 it is not depicted on this map.

3. Dashed outlines depict packs and groups with less than twenty locations in 2008 and 2009. Minimum convex polygons derived from twenty or more locations may more accurately represent territories than those based on less than twenty locations.

4. Underlined pack labels indicate that the pack was a confirmed breeding pair in 2009.

5. Estimated Pack Activity determined by biologists from research locations, public observations and incidental observations from 1/1/2008 - 12/31/2009. These are displayed as 9.8 mile radius circles consistent with pack territories in Idaho.

6. 2009 Public Observations collected on the Idaho Fish and Game website and reviewed by staff biologists. Confirmed and possible observations from 1/1/2009 - 12/31/2009 are displayed.

Figure 18. Distribution of documented and suspected wolf packs, other documented groups, and public wolf reports in the Sawtooth Wolf Management Zone, 2009.

Table 17. End of year summary of minimum number of wolves detected, reproductive status, dispersal, and monitoring status for documented and suspected wolf packs and other documented wolf groups within the Sawtooth Wolf Management Zone, 2009.

WOLF GROUP[a]	Min. no. wolves detected[b]	Reproductive status			Known dispersal	Monitoring status	
		Min. no. pups prod.(died)[c]	Reported as			No. wolf captures[e]	No. wolves missing[f]
			Reprod. pack	Breeding pair[d]			
DOCUMENTED PACK							
~~Applejack~~	0	?	NO	NO	0	0	0
Archie Mountain	6	4	YES	YES	0	7	0
~~Basin Butte~~	0	4(3)	YES	NO	1	1	0
Bear Valley	?	3	YES	YES	0	0	0
Bear Wallow	6	4	YES	YES	0	1	0
Big Buck	?	4	YES	YES	0	0	0
Calderwood	8	2	YES	YES	0	0	0
Casner Creek	7	5	YES	YES	1	6	2
Galena	?	2	YES	YES	0	1	0
Little Anderson	?	1	YES	NO	0	0	0
Scott Mountain	?	2	YES	YES	0	1	1
Steel Mountain	3	3	YES	YES	0	1	0
Thorn Creek	?	4(4)	YES	NO	0	0	0
Timberline	7	3	YES	YES	1	5	2
Wapiti	8	4(1)	YES	YES	0	7	1
Yankee Fork	?	6	YES	YES	0	0	0
SUBTOTAL	45	51(8)			3	30	6
SUSPECTED PACK							
Lost	?				0	0	0
SUBTOTAL	0	0			0	0	0
OTHER DOC. GROUP							
B109	1				0	1	0
~~B364~~	0				0	0	0
B453	2				0	1	0
~~B469~~	0				0	1	0
SUBTOTAL	3	0			0	3	0
ZONE TOTAL	48	51(11[g])			3	33	6

[a] Documented packs = territorial groups of wolves usually consisting of an adult male and female and their offspring from one or more generations, and has the potential to reproduce (2 adults of opposite sex). Suspected packs = geographic areas where wolf pack presence was suspected but not verified, or where wolf presence was verified but did not meet documented pack status. Other documented group = verified groups not meeting either documented or suspected pack status (e.g. lone wolves, potential mated pairs, etc.). Unknown = geographic areas where wolf presence was previously unverified and/or no data on group status was known.

[b] Minimum number of wolves detected within a pack at the end of the year. Summing this column does not equate to number of wolves estimated to be present in the zone.

[c] Number in parentheses indicates known pup mortality; pup mortalities tallied in the appropriate row/column in Documented mortality in Table 18.

[d] Breeding pairs are the measure of Federal and State wolf recovery and management goals. A breeding pair is defined as "an adult male and a female wolf that have produced at least 2 pups that survive until December 31 of the year of their birth…".

[e] Includes wolves captured for monitoring purposes during 2009. Most, but not all, were radiocollared.

[f] Radiocollared wolves that became missing in 2009.

[g] Pack affiliation of 3 pups that died in this zone was not known.

Table 18. End of year summary of documented wolf mortality and wolf-caused livestock depredations by Game Management Unit (GMU) within the Sawtooth Wolf Management Zone, 2009.

GMU	Documented mortality					Confirmed (probable) wolf-caused livestock losses			
	Natural	Control[a]	Harvest	Other human[b]	Unknown[c]	Cattle	Sheep	Dogs	Other
33	0	4	6	3	0	0	12(7)	0	0
34	0	0	3	0	0	0	0	0	0
35	1	0	5	1	2	0	0	0	0
36	0	10	4	2	2	4	4(2)	2	0
39	0	14	15	1	4	2(3)	63(72)	0	0
ZONE TOTAL	1	28	33	7	8	6(3)	79(81)	2	0

[a] Includes agency lethal control and legal take (exclusive of wolf harvest)
[b] Includes all other human-related deaths.
[c] Does not include pups that disappeared before winter.

SOUTHERN IDAHO WOLF MANAGEMENT ZONE (GMUs 38, 40, 41, 42, 45, 46, 47, 52, 52A, 53, 54, 55, 56, 57, 63, 63A, 66, 66A, 68, 68A, 69, 70, 71, 72, 73A, 74, 75, 76, 77, 78)

Background

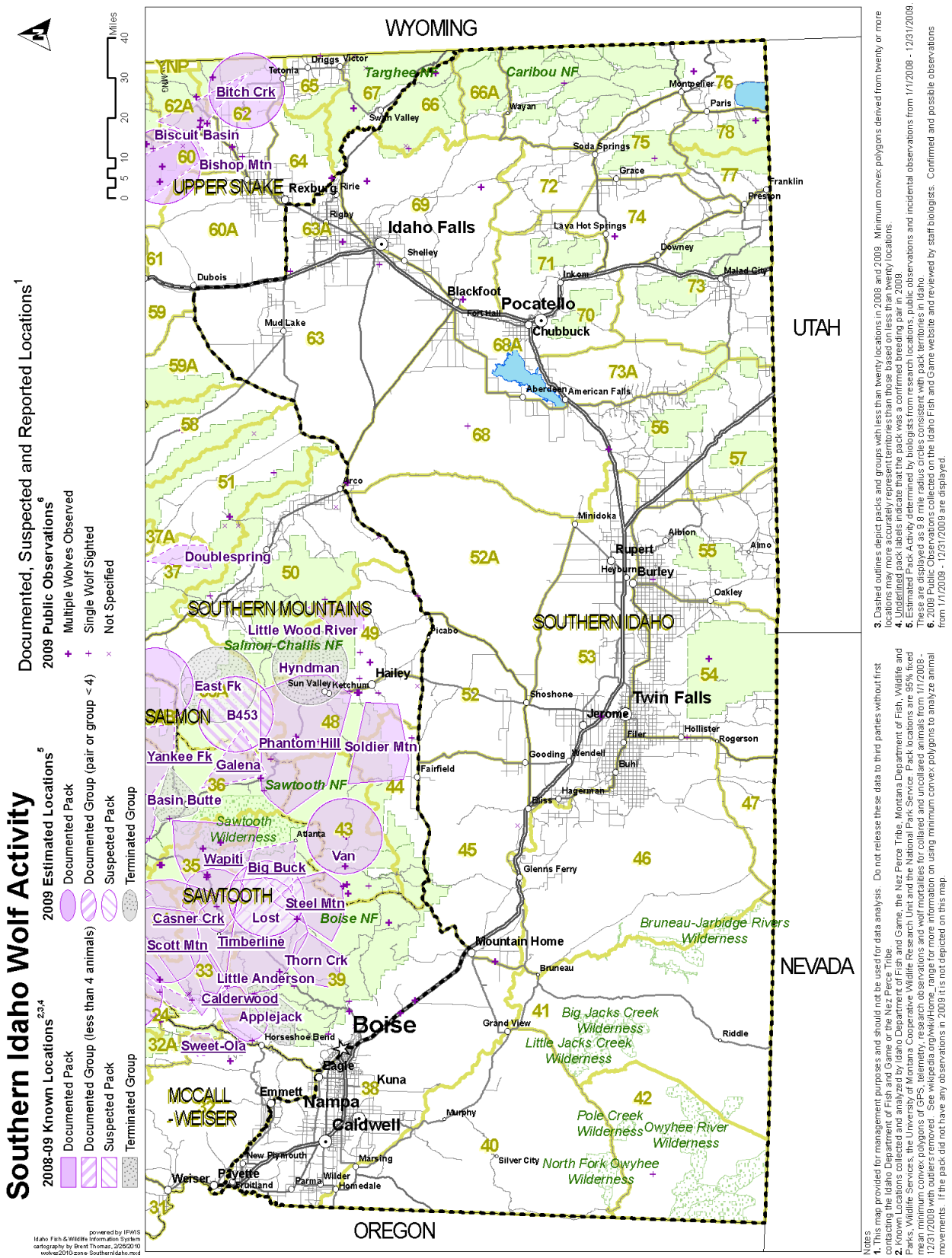
The Southern Idaho Zone includes the Snake River Plain, which is the most agricultural and metropolitan landscape in the state. The zone includes several mountain ranges spanning from the Owyhees in the west to the Portneufs in the east. These ranges might act as corridors for dispersing wolves, but potential for livestock conflicts would be high. The zone also contains some protected areas including Craters of the Moon National Monument and the Idaho National Laboratory. This human-dominated and intensely managed landscape offered little secure wolf habitat. The climate tends to be hot and dry in the summer and cold and wetter in the winter. Temperatures range from mild in the west to more severe in the east.

Management Direction

As outlined in the Wolf Plan, wolf-livestock and wolf-ungulate conflict levels are currently considered low, but there may be potential for increased conflicts with livestock. Management direction for wolves in this zone is to stabilize the number of wolves at the 2005-2007 level (Idaho Department of Fish and Game 2008). The IDFG Commission established a harvest limit of 5 wolves for this zone during the 2009 harvest season initially set for 1 October 2009 through 31 December 2009.

Management Summary

During 2009, the Southern Idaho Zone was occupied by 2 other documented wolf groups, though one was removed via lethal control (Figure 18; Table 19). No breeding pairs were documented in this zone (Table 19). Three mortalities were documented; two from lethal control and one from harvest (Table 20). Because the harvest limit was not reached, the season was lengthened through 31 March 2010 by the IDFG Commission at their November 2009 meeting. The sole confirmed loss of a calf was attributed to other wolf group B403 (Table 20). No wolves were captured or radiocollared.



Notes:
1. This map provided for management purposes and should not be used for data analysis. Do not release these data to third parties without first contacting the Idaho Department of Fish and Game or the Nez Perce Tribe.
2. Known Locations collected and analyzed by Idaho Department of Fish and Game, the Nez Perce Tribe, Montana Department of Fish, Wildlife and Parks, Wildlife Services, the University of Montana Cooperative Wildlife Research Unit and the National Park Service. Pack locations are 95% fixed mean minimum convex polygons of GPS, telemetry, research observations and wolf mortalities for collared and uncollared animals from 1/1/2008 - 12/31/2009 with outliers removed. See wikipedia.org/wiki/Home_range for more information on using minimum convex polygons to analyze animal movements. If the pack did not have any observations in 2009 it is not depicted on this map.
3. Dashed outlines depict packs and groups with less than twenty locations in 2008 and 2009. Minimum convex polygons derived from twenty or more locations may more accurately represent territories than those based on less than twenty locations.
4. Underlined pack labels indicate that the pack was a confirmed breeding pair in 2009.
5. Estimated Pack Activity determined by biologists from research locations, public observations and incidental observations from 1/1/2008 - 12/31/2009. These are displayed as 9.8 mile radius circles consistent with pack territories in Idaho.
6. 2009 Public Observations collected on the Idaho Fish and Game website and reviewed by staff biologists. Confirmed and possible observations from 1/1/2009 - 12/31/2009 are displayed.

Figure 19. Distribution of documented and suspected wolf packs, other documented groups, and public wolf reports in the Southern Idaho Wolf Management Zone, 2009.

Table 19. End of year summary of minimum number of wolves detected, reproductive status, dispersal, and monitoring status for documented and suspected wolf packs and other documented wolf groups within the Southern Idaho Wolf Management Zone, 2009.

WOLF GROUP[a]	Min. no. wolves detected[b]	Reproductive status			Known dispersal	Monitoring status	
		Min. no. pups prod.(died)[c]	Reported as			No. wolf captures[e]	No. wolves missing[f]
			Reprod. pack	Breeding pair[d]			
DOCUMENTED PACK							
SUBTOTAL	0	0			0	0	0
SUSPECTED PACK							
SUBTOTAL	0	0			0	0	0
OTHER DOC. GROUP							
~~B403~~	0				0	0	0
B439	1				0	0	0
SUBTOTAL	1	0			0	0	0
ZONE TOTAL	1	0			0	0	0

[a] Documented packs = territorial groups of wolves usually consisting of an adult male and female and their offspring from one or more generations, and has the potential to reproduce (2 adults of opposite sex). Suspected packs = geographic areas where wolf pack presence was suspected but not verified, or where wolf presence was verified but did not meet documented pack status. Other documented group = verified groups not meeting either documented or suspected pack status (e.g. lone wolves, potential mated pairs, etc.). Unknown = geographic areas where wolf presence was previously unverified and/or no data on group status was known.

[b] Minimum number of wolves detected within a pack at the end of the year. Summing this column does not equate to number of wolves estimated to be present in the zone.

[c] Number in parentheses indicates known pup mortality; pup mortalities tallied in the appropriate row/column in Documented mortality in Table 20.

[d] Breeding pairs are the measure of Federal and State wolf recovery and management goals. A breeding pair is defined as "an adult male and a female wolf that have produced at least 2 pups that survive until December 31 of the year of their birth…".

[e] Includes wolves captured for monitoring purposes during 2009. Most, but not all, were radiocollared.

[f] Radiocollared wolves that became missing in 2009.

Table 20. End of year summary of documented wolf mortality and wolf-caused livestock depredations by Game Management Unit (GMU) within the Southern Idaho Wolf Management Zone, 2009.

GMU	Documented mortality					Confirmed (probable) wolf-caused livestock losses			
	Natural	Control[a]	Harvest	Other human[b]	Unknown[c]	Cattle	Sheep	Dogs	Other
38	0	0	0	0	0	0	0	0	0
40	0	0	0	0	0	0	0	0	0
41	0	0	0	0	0	0	0	0	0
42	0	0	0	0	0	0	0	0	0
45	0	2	0	0	0	1	0	0	0
46	0	0	0	0	0	0	0	0	0
47	0	0	0	0	0	0	0	0	0
52	0	0	0	0	0	0	0	0	0
52A	0	0	0	0	0	0	0	0	0
53	0	0	0	0	0	0	0	0	0
54	0	0	0	0	0	0	0	0	0
55	0	0	0	0	0	0	0	0	0
56	0	0	0	0	0	0	0	0	0
57	0	0	0	0	0	0	0	0	0
63	0	0	0	0	0	0	0	0	0
63A	0	0	1	0	0	0	0	0	0
66	0	0	0	0	0	0	0	0	0
66A	0	0	0	0	0	0	0	0	0
68	0	0	0	0	0	0	0	0	0
68A	0	0	0	0	0	0	0	0	0
69	0	0	0	0	0	0	0	0	0
70	0	0	0	0	0	0	0	0	0
71	0	0	0	0	0	0	0	0	0
72	0	0	0	0	0	0	0	0	0
73A	0	0	0	0	0	0	0	0	0
74	0	0	0	0	0	0	0	0	0
75	0	0	0	0	0	0	0	0	0
76	0	0	0	0	0	0	0	0	0
77	0	0	0	0	0	0	0	0	0
78	0	0	0	0	0	0	0	0	0
ZONE TOTAL	0	2	1	0	0	1	0	0	0

[a] Includes agency lethal control and legal take (exclusive of wolf harvest)
[b] Includes all other human-related deaths.
[c] Does not include pups that disappeared before winter.

UPPER SNAKE WOLF MANAGEMENT ZONE (GMUs 60, 60A, 61, 62, 62A, 64, 65, 67)

Background

The topography consists of gentle to moderately sloping terrain, but contains portions of several mountain ranges. At relatively high elevation, winters are often severe, with associated deep snow accumulations. Habitat communities comprise a mixture of forest types (lodgepole pine,

Douglas-fir, quaking aspen (*Populus tremuloides*) associated with adequate moisture, and high-desert shrub-steppe habitat types indicative of a drier climate. Land ownership consists of a checkerboard of state, federal, and private properties, roughly half being under federal/state ownership. Dominant land use activities include timber harvest, livestock grazing and production, and agriculture.

Management Direction

As outlined in the Wolf Plan, wolf-livestock are currently considered moderate, whereas wolf-ungulate conflicts are considered low. Management objectives include stabilizing wolf numbers between the 2005-2007 level, and maintaining connectivity with the wolf populations in Montana and Wyoming (Idaho Department of Fish and Game 2008). The IDFG Commission established a harvest limit of 5 wolves for this zone during the 2009 harvest season initially set for 1 October 2009 through 31 December 2009.

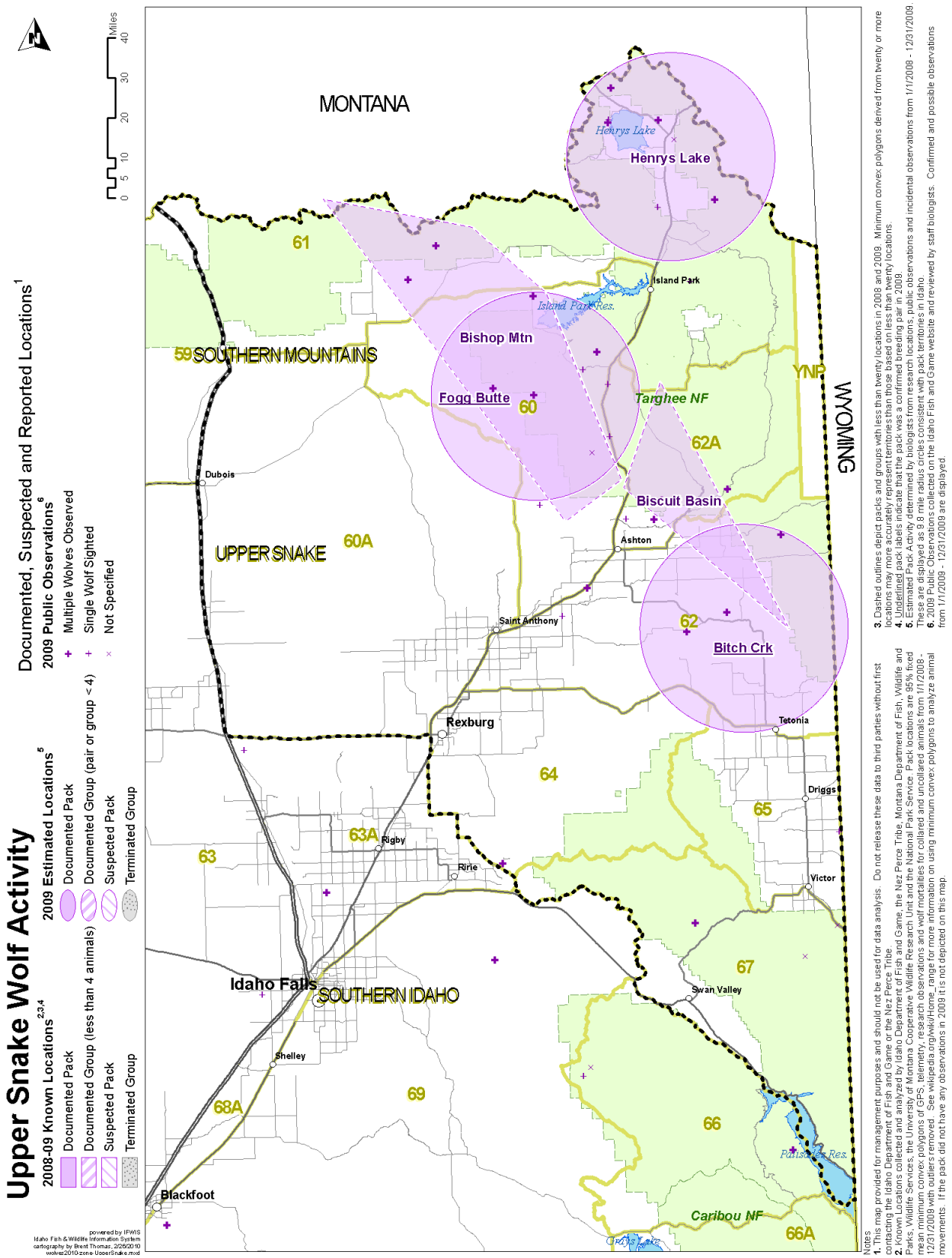
Management Summary

The Upper Snake Zone was occupied by 2 documented resident packs and 3 documented resident border packs during 2009 (Figure 19; Table 21). Three border packs attributed to adjacent states (two for Wyoming and one for Montana) were believed to spend some time within Idaho.

Four of 5 documented Idaho resident and border packs reproduced, two of which satisfied breeding pair criteria (Table 21). The reproductive status for the Henrys Lake pack was not known.

Documented mortalities (n = 14) included control (agency removal and legal take; n = 6), harvest (n = 5), and other human (illegal take, vehicle collision, etc.; n = 3; Table 22) causes. The harvest limit was met and the season closed on 2 November.

Confirmed (n = 4) wolf-caused cattle losses were attributed to the Bitch Creek pack and unknown wolves (Table 21). Confirmed (n = 97) wolf-caused domestic sheep losses were attributed to the Biscuit Basin pack and Montana's Sage Creek pack (Table 22). Confirmed (n = 5) and probable (n = 1) domestic dog losses were attributed to the Biscuit Basin pack. The Biscuit Basin pack was confirmed to have killed 1 domestic goat. Two wolves were captured by Program personnel that resulted in the placement of 2 new radiocollars.



Notes:
1. This map provided for management purposes and should not be used for data analysis. Do not release these data to third parties without first contacting the Idaho Department of Fish and Game or the Nez Perce Tribe.
2. Known Locations collected and analyzed by Idaho Department of Fish and Game, the Nez Perce Tribe, Montana Department of Fish, Wildlife and Parks, Wildlife Services, the University of Montana Cooperative Wildlife Research Unit and the National Park Service. Pack locations are 95% fixed mean minimum convex polygons of GPS, telemetry, research observations and wolf mortalities for collared and uncollared animals from 1/1/2008 - 12/31/2009 with outliers removed. See wikipedia.org/wiki/Home_range for more information on using minimum convex polygons to analyze animal movements. If the pack did not have any observations in 2009 it is not depicted on this map.
3. Dashed outlines depict packs and groups with less than twenty locations in 2008 and 2009. Minimum convex polygons derived from twenty or more locations may more accurately represent territories than those based on less than twenty locations.
4. Underlined pack labels indicate that the pack was a confirmed breeding pair in 2009.
5. Estimated Pack Activity determined by biologists from research locations, public observations and incidental observations from 1/1/2008 - 12/31/2009. These are displayed as 9.8 mile radius circles consistent with pack territories in Idaho.
6. 2009 Public Observations collected on the Idaho Fish and Game website and reviewed by staff biologists. Confirmed and possible observations from 1/1/2009 - 12/31/2009 are displayed.

Figure 20. Distribution of documented and suspected wolf packs, other documented groups, and public wolf reports in the Upper Snake Wolf Management Zone, 2009.

Table 21. End of year summary of minimum number of wolves detected, reproductive status, dispersal, and monitoring status for documented and suspected wolf packs and other documented wolf groups within the Upper Snake Wolf Management Zone, 2009.

WOLF GROUP[a]	Min. no. wolves detected[b]	Reproductive status			Known dispersal	Monitoring status	
		Min. no. pups prod.(died)[c]	Reported as			No. wolf captures[e]	No. wolves missing[f]
			Reprod. pack	Breeding pair[d]			
DOCUMENTED PACK							
Bechler (WY)[g]							
Biscuit Basin	4	2(1)	YES	NO	0	0	0
Bishop Mountain (ID)[g]	5	1	YES	NO	0	0	2
Bitch Creek (ID)[g]	7	2	YES	YES	0	1	0
Chagrin River (WY)[g]							
Fogg Butte	7	3	YES	YES	0	0	0
Henrys Lake (ID)[g]	6	0	NO	NO	0	0	0
Sage Creek (MT)[g]							
SUBTOTAL	29	8(1)			0	1	2
SUSPECTED PACK							
SUBTOTAL	0	0			0	0	0
OTHER DOC. GROUP							
~~B438~~	?				0	1	1
SUBTOTAL	0	0			0	1	1
ZONE TOTAL	29	8(2[h])			0	2	3

[a] Documented packs = territorial groups of wolves usually consisting of an adult male and female and their offspring from one or more generations, and has the potential to reproduce (2 adults of opposite sex). Suspected packs = geographic areas where wolf pack presence was suspected but not verified, or where wolf presence was verified but did not meet documented pack status. Other documented group = verified groups not meeting either documented or suspected pack status (e.g. lone wolves, potential mated pairs, etc.). Unknown = geographic areas where wolf presence was previously unverified and/or no data on group status was known.

[b] Minimum number of wolves detected within a pack at the end of the year. Summing this column does not equate to number of wolves estimated to be present in the zone.

[c] Number in parentheses indicates known pup mortality; pup mortalities tallied in the appropriate row/column in Documented mortality in Table 22.

[d] Breeding pairs are the measure of Federal and State wolf recovery and management goals. A breeding pair is defined as "an adult male and a female wolf that have produced at least 2 pups that survive until December 31 of the year of their birth…".

[e] Includes wolves captured for monitoring purposes during 2009. Most, but not all, were radiocollared.

[f] Radiocollared wolves that became missing in 2009.

[g] Border packs officially tallied to (STATE); territory known/likely shared with ID. Data on these packs can be found in Rocky Mountain Wolf Recovery 2009 Annual Report or other source.

[h] Pack affiliation of 1 pup harvested in this zone was not known

Table 22. End of year summary of documented wolf mortality and wolf-caused livestock depredations by Game Management Unit (GMU) within the Upper Snake Wolf Management Zone, 2009.

GMU	Documented mortality					Confirmed (probable) wolf-caused livestock losses			
	Natural	Control[a]	Harvest	Other human[b]	Unknown[c]	Cattle	Sheep	Dogs	Other
60	0	3	0	0	0	0	56	2	1[d]
60A	0	0	0	0	0	0	0	0(1)	0
61	0	0	1	2	0	0	26	0	0
62	0	1	3	1	0	4	0	0	0
62A	0	2	1	0	0	0	15	3	0
64	0	0	0	0	0	0	0	0	0
65	0	0	0	0	0	0	0	0	0
67	0	0	0	0	0	0	0	0	0
ZONE TOTAL	0	6	5	3	0	4	97	5(1)	1[d]

[a] Includes agency lethal control and legal take (exclusive of wolf harvest)
[b] Includes all other human-related deaths.
[c] Does not include pups that disappeared before winter.
[d] Domestic goat.

SOUTHERN MOUNTAINS WOLF MANAGEMENT ZONE (GMUs 29, 30, 30A, 36A, 37, 37A, 43, 44, 48, 49, 50, 51, 58, 59, 59A)

Background

The Southern Mountains Zone is comprised of 4 elk management units: The Smoky Mountains, Pioneer, Lemhi, and Beaverhead Elk Zones. The Southern Mountains zone covers a large geographic area spanning the width of the state from the southwest corner to the eastern border with Montana. This zone contains a wide diversity of terrain transitioning from relatively flat prairies in the southwestern portion to rolling and moderately steep terrain of the Smoky and Soldier Mountain ranges in the central portions and steeper, spire-like peaks of the Boulder, White Cloud, Pioneer, and Beaverhead Mountain ranges of the northeast portions of this zone. These mountain ranges are intersected by several major river drainages, including the South Fork Boise, Big Wood, Big Lost, Little Lost, East Fork Salmon, Salmon, Pahsimeroi, and Lemhi Rivers. Because of this varied terrain, habitats range widely and included grass prairie, coniferous forest, high desert shrub-steppe, and alpine; this diversity reflects the wide range of variation in annual precipitation across this region. Land ownership is predominantly public (USFS, Bureau of Land Management) within this zone. Cattle ranching, livestock grazing, and recreation were the dominant uses of the landscape within the Southern Mountains zone.

Management Direction

As outlined in the Wolf Plan, wolf-livestock conflict levels are currently considered high, whereas wolf-ungulate conflicts are considered low. Management direction for wolves in this zone is to reduce the number of wolves to the 2005-2007 level and then stabilize at that level (Idaho Department of Fish and Game 2008). The IDFG Commission established a harvest limit of 10 wolves for this zone during the 2009 harvest season set for 1 October 2009 through 31 December 2009.

Management Summary

The Southern Mountains Zone was occupied by 8 documented resident packs and 1 documented resident border pack during 2009 (Figure 20; Table 23). Two additional border packs were claimed by Montana. Three packs were newly documented in 2009 (East Fork, Little Wood River, and Van); the East Fork pack was initially documented after livestock depredations, and subsequently removed. An additional pack was removed from the zone total (Hyndman) due to too few wolves remaining within that pack to satisfy pack criteria.

Of the 5 verified reproductive packs, 1 pack satisfied breeding pair criteria by the end of the year (Table 23). The reproductive status of 2 packs was unknown and 2 other packs were lethally removed prior to whelping.

Documented mortalities (n = 44) included natural (n = 1), control (n = 25), harvest (n = 10), other human (n = 2), and unknown (n = 6) causes (Table 24). The harvest limit was met on 31 December 2009 and the season was closed.

Confirmed (n = 37) and probable (n = 11) wolf-caused cattle losses were attributed to the Black Canyon, Doublespring, East Fork, Lemhi, Little Wood River, and Soldier Mountain packs; losses were also attributed to lone/paired (B149 pair), and unknown wolves (Table 24). Confirmed (n = 126) and probable (n = 37) wolf-caused domestic sheep losses were attributed to the Doublespring, Little Wood River, Middle Creek (Montana border pack), Phantom Hill, Soldier Mountain, and Steel Mountain packs, as well as unknown wolves. Two dogs were confirmed killed by the Little Wood River pack. Six wolves were captured by Program personnel and fitted with radiocollars.

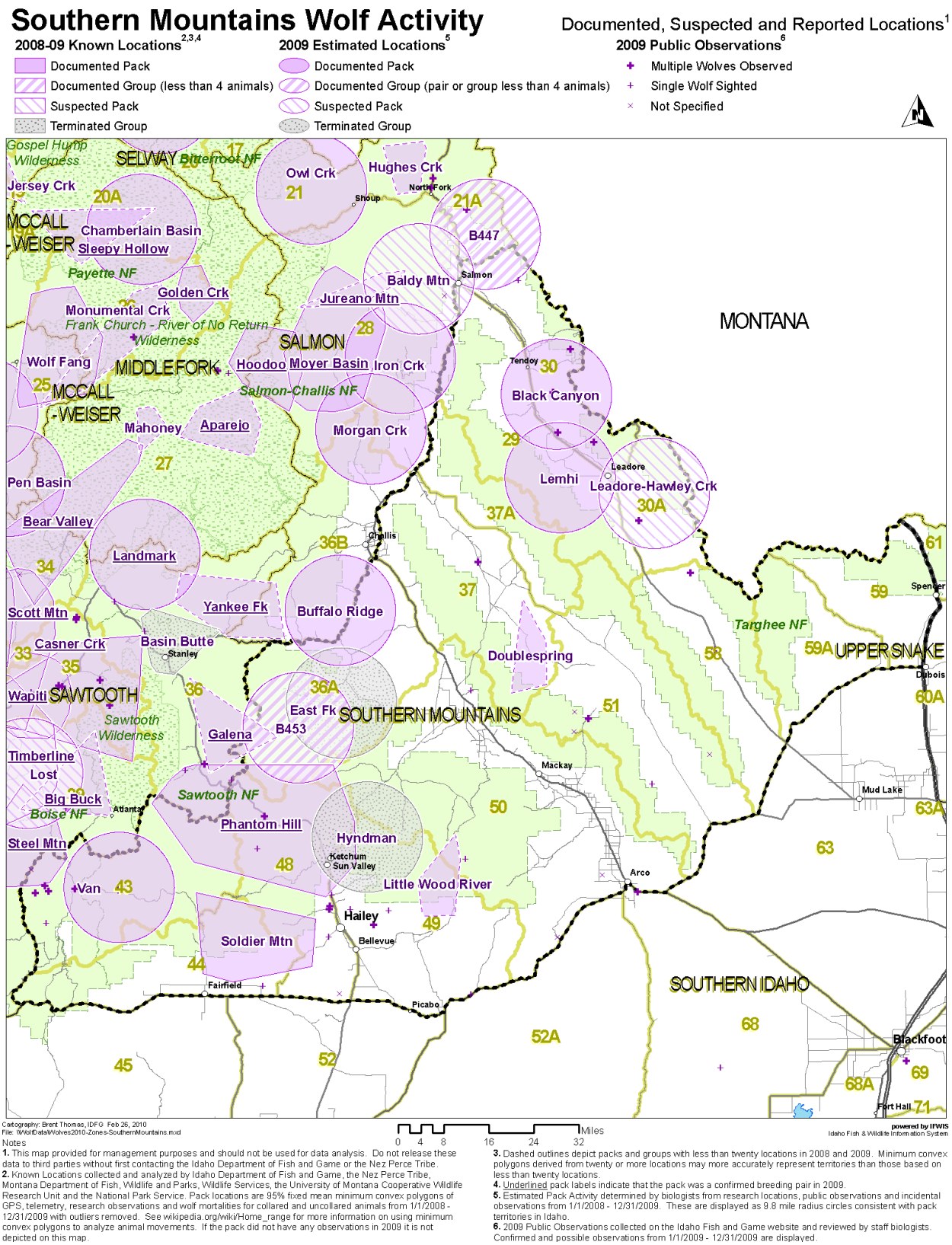


Figure 21. Distribution of documented and suspected wolf packs, other documented groups, and public wolf reports in the Southern Mountains Wolf Management Zone, 2009.

Table 23. End of year summary of minimum number of wolves detected, reproductive status, dispersal, and monitoring status for documented and suspected wolf packs and other documented wolf groups within the Southern Mountains Wolf Management Zone, 2009.

WOLF GROUP[a]	Min. no. wolves detected[b]	Reproductive status			Known dispersal	Monitoring status	
		Min. no. pups prod.(died)[c]	Reported as			No. wolf captures[e]	No. wolves missing[f]
			Reprod. pack	Breeding pair[d]			
DOCUMENTED PACK							
Black Canyon (ID)[g]	?	2(1)	YES	NO	0	0	0
Doublespring	?	?	NO	NO	0	0	0
~~East Fork~~	0	0	NO	NO	0	0	0
Horse Prairie (MT)[g]							
~~Hyndman~~	0	0	NO	NO	0	0	0
Lemhi	?	?	NO	NO	0	1	0
Little Wood River	6	1	YES	NO	0	1	0
~~Middle Creek (MT)~~[g]							
Phantom Hill	?	3	YES	YES	0	2	1
Soldier Mountain	1	6(6)	YES	NO	0	1	0
Van	?	1	YES	NO	0	0	0
SUBTOTAL	7	13(7)			0	5	1
SUSPECTED PACK							
Leadore-Hawley Creek	?				0	0	0
SUBTOTAL	0	0			0	0	0
OTHER DOC. GROUP							
B447	2				0	0	0
B450	1				0	0	0
B470	1				0	1	0
SUBTOTAL	4	0			0	1	0
ZONE TOTAL	11	13(7)			0	6	1

[a] Documented packs = territorial groups of wolves usually consisting of an adult male and female and their offspring from one or more generations, and has the potential to reproduce (2 adults of opposite sex). Suspected packs = geographic areas where wolf pack presence was suspected but not verified, or where wolf presence was verified but did not meet documented pack status. Other documented group = verified groups not meeting either documented or suspected pack status (e.g. lone wolves, potential mated pairs, etc.). Unknown = geographic areas where wolf presence was previously unverified and/or no data on group status was known.

[b] Minimum number of wolves detected within a pack at the end of the year. Summing this column does not equate to number of wolves estimated to be present in the zone.

[c] Number in parentheses indicates known pup mortality; pup mortalities tallied in the appropriate row/column in Documented mortality in Table 24.

[d] Breeding pairs are the measure of Federal and State wolf recovery and management goals. A breeding pair is defined as "an adult male and a female wolf that have produced at least 2 pups that survive until December 31 of the year of their birth…".

[e] Includes wolves captured for monitoring purposes during 2009. Most, but not all, were radiocollared.

[f] Radiocollared wolves that became missing in 2009.

[g] Border packs officially tallied to (STATE); territory known/likely shared with ID. Data on these packs can be found in Rocky Mountain Wolf Recovery 2009 Annual Report or other source.

Table 24. End of year summary of documented wolf mortality and wolf-caused livestock depredations by Game Management Unit (GMU) within the Southern Mountains Wolf Management Zone, 2009.

GMU	Documented mortality					Confirmed (probable) wolf-caused livestock losses			
	Natural	Control[a]	Harvest	Other human[b]	Unknown[c]	Cattle	Sheep	Dogs	Other
29	0	3	0	0	0	6(1)	0	0	0
30	0	6	1	0	0	3(1)	0	0	0
30A	0	0	0	0	0	2	0	0	0
36A	0	4	0	0	0	1	0	0	0
37	0	0	0	0	0	8(1)	10	0	0
37A	0	2	0	0	0	1	1	0	0
43	0	0	0	0	0	0	23(6)	0	0
44	0	3	2	1	6	2	16(12)	0	0
48	0	0	3	1	0	0	13(6)	0	0
49	1	0	0	0	0	0	25(11)	2	0
50	0	7	1	0	0	11(7)	2	0	0
51	0	0	3	0	0	2(1)	0	0	0
58	0	0	0	0	0	1	0	0	0
59	0	0[d]	0	0	0	0	36(2)	0	0
59A	0	0	0	0	0	0	0	0	0
ZONE TOTAL	1	25[d]	10	2	6	37(11)	126(37)	2	0

[a] Includes agency lethal control and legal take (exclusive of wolf harvest)
[b] Includes all other human-related deaths.
[c] Does not include pups that disappeared before winter.
[d] One wolf tallied to Montana pack not included; information located in that State's 2009 Annual Report.

SALMON WOLF MANAGEMENT ZONE (GMUs 21, 21A, 28, 36B)

Background

The Salmon Zone encompasses 4 GMUs (21, 21A, 28, 36B) that also comprise the Salmon elk management zone. The topography within the Salmon Zone is characterized by steep, mountainous slopes interspersed by river valleys. The habitat consists primarily of timbered hillsides with grass understory, although lower elevations are arid rangelands comprised of sagebrush and bunchgrass vegetation. Land ownership is primarily public, with approximately 95% under USFS, Bureau of Land Management, or State ownership. Cattle ranching, livestock grazing, mining, timber harvest, and recreation are the dominant human uses in this region.

Management Direction

As outlined in the Wolf Plan, wolf-livestock conflict levels are currently considered high, whereas wolf-ungulate conflicts are considered moderate. Management direction for wolves in this zone is to reduce the number of wolves to the 2005-2007 level and then stabilize at that lower level (Idaho Department of Fish and Game 2008). The IDFG Commission established a harvest limit of 16 wolves for this zone during the 2009 harvest season initially set for 1 October 2009 through 31 December 2009.

Management Summary

The Salmon Zone was occupied by 7 documented resident packs and 1 documented resident border pack during 2009 (Figure 21; Table 25). Five border packs were claimed by Montana. One pack (Iron Creek) was upgraded from suspected to documented status after confirmation of the presence of a minimum of 4 wolves was obtained.

Three of 4 packs reproductive verified qualified as breeding pairs (Table 25). The reproductive status of the remaining 4 packs was not determined.

Documented mortalities within the Salmon Zone (n = 10; Table 26) were all attributed to hunter harvest. Because the harvest limit was not reached, the season was lengthened through 31 March 2010 by the IDFG Commission at their November 2009 meeting.

Confirmed (n = 2) wolf-caused cattle losses were attributed to the Iron Creek pack (Table 26). One dog was confirmed killed and a domestic goat was considered probably killed by wolves, in both instances by unknown groups of wolves. Four wolves were captured by Program personnel that resulted in the placement of 4 new radiocollars. Two radiocollared wolves dispersed from the Hughes Creek pack.

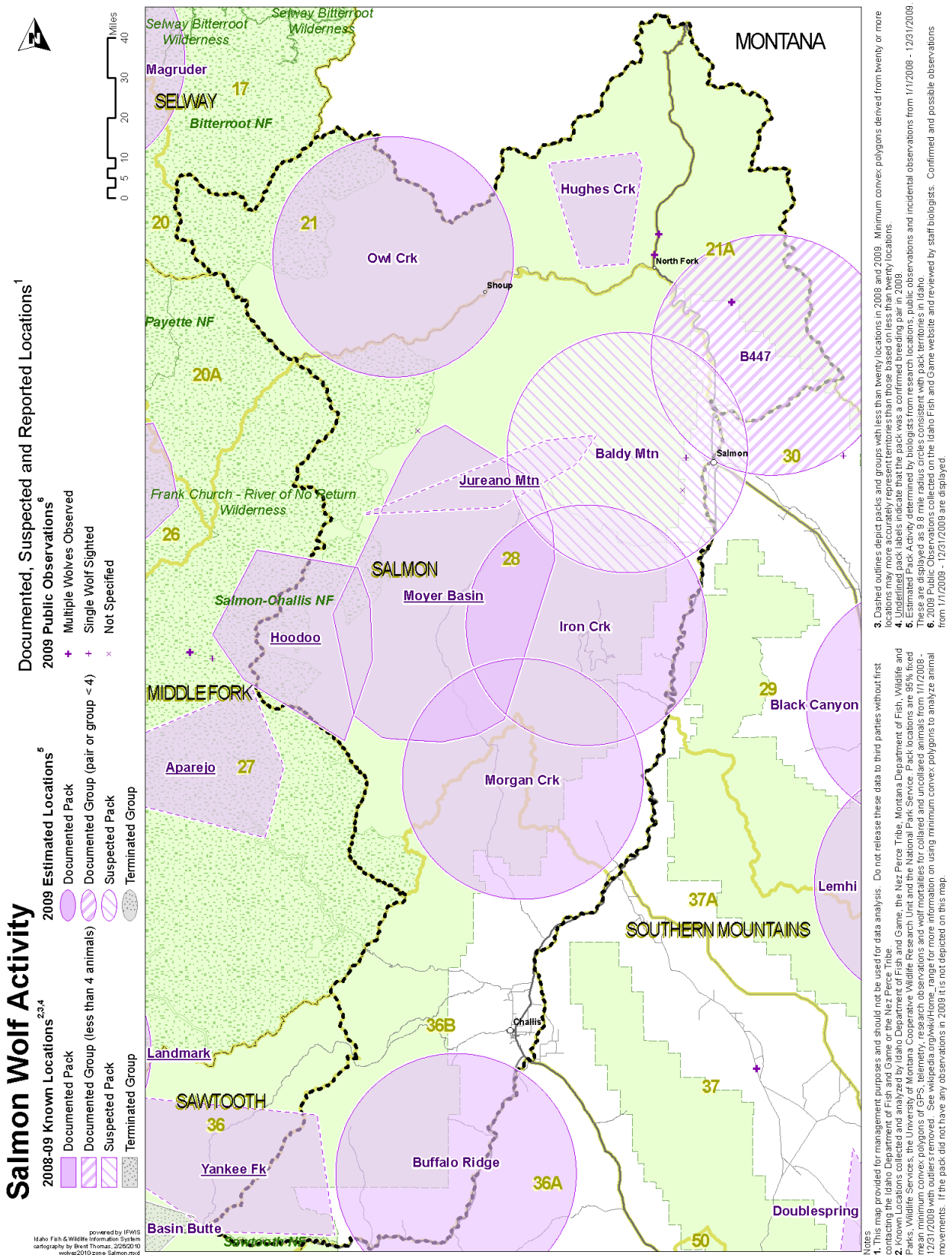


Figure 22. Distribution of documented and suspected wolf packs, other documented groups, and public wolf reports in the Salmon Wolf Management Zone, 2009.

Table 25. End of year summary of minimum number of wolves detected, reproductive status, dispersal, and monitoring status for documented and suspected wolf packs and other documented wolf groups within the Salmon Wolf Management Zone, 2009.

WOLF GROUP[a]	Min. no. wolves detected[b]	Reproductive status			Known dispersal	Monitoring status	
		Min. no. pups prod.(died)[c]	Reported as			No. wolf captures[e]	No. wolves missing[f]
			Reprod. pack	Breeding pair[d]			
DOCUMENTED PACK							
~~Battlefield (MT)~~[g]							
Buffalo Ridge	?	?	NO	NO	0	0	0
Hoodoo	?	3	YES	YES	0	0	0
Hughes Creek (ID)[g]	?	?	NO	NO	2	2	0
Iron Creek	4	?	NO	NO	0	0	0
Jureano Mountain	?	2	YES	YES	0	0	0
Miner Lakes (MT)[g]							
Morgan Creek	?	1	YES	NO	0	0	0
Moyer Basin	10	5	YES	YES	0	2	0
Owl Creek	?	?	NO	NO	0	0	0
Painted Rocks (MT)[g]							
Sula (MT)[g]							
Trail Creek (MT)[g]							
SUBTOTAL	14	11			2	4	0
SUSPECTED PACK							
Baldy Mountain	?				0	0	0
SUBTOTAL	0	0			0	0	0
OTHER DOC. GROUP							
B442 pair	1				0	0	0
SUBTOTAL	1	0			0	0	0
ZONE TOTAL	15	11			2	4	0

[a] Documented packs = territorial groups of wolves usually consisting of an adult male and female and their offspring from one or more generations, and has the potential to reproduce (2 adults of opposite sex). Suspected packs = geographic areas where wolf pack presence was suspected but not verified, or where wolf presence was verified but did not meet documented pack status. Other documented group = verified groups not meeting either documented or suspected pack status (e.g. lone wolves, potential mated pairs, etc.). Unknown = geographic areas where wolf presence was previously unverified and/or no data on group status was known.

[b] Minimum number of wolves detected within a pack at the end of the year. Summing this column does not equate to number of wolves estimated to be present in the zone.

[c] Number in parentheses indicates known pup mortality; pup mortalities tallied in the appropriate row/column in Documented mortality in Table 26.

[d] Breeding pairs are the measure of Federal and State wolf recovery and management goals. A breeding pair is defined as "an adult male and a female wolf that have produced at least 2 pups that survive until December 31 of the year of their birth…".

[e] Includes wolves captured for monitoring purposes during 2009. Most, but not all, were radiocollared.

[f] Radiocollared wolves that became missing in 2009.

[g] Border packs officially tallied to (STATE); territory known/likely shared with ID. Data on these packs can be found in Rocky Mountain Wolf Recovery 2009 Annual Report or other source.

Table 26. End of year summary of documented wolf mortality and wolf-caused livestock depredations by Game Management Unit (GMU) within the Salmon Wolf Management Zone, 2009.

GMU	Documented mortality					Confirmed (probable) wolf-caused livestock losses			
	Natural	Control[a]	Harvest	Other human[b]	Unknown[c]	Cattle	Sheep	Dogs	Other
21	0	0	3	0	0	0	0	0	0
21A	0	0	1	0	0	0	0	0	0
28	0	0	3	0	0	2	0	0	0
36B	0	0	3	0	0	0	0	1	0(1[d])
ZONE TOTAL	0	0	10	0	0	2	0	1	0(1[d])

[a] Includes agency lethal control and legal take (exclusive of wolf harvest)
[b] Includes all other human-related deaths.
[c] Does not include pups that disappeared before winter.
[d] Domestic goat.

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APPENDIX A. POPULATION ESTIMATION TECHNIQUE USED TO DETERMINE WOLF POPULATION NUMBERS IN IDAHO

From 1996 until 2005, wolf populations were counted using a total count technique that was quite accurate when wolf numbers were low and most had radiocollars. We have, for the past 2 years, used an estimation technique that is more applicable to a larger population which is more difficult to monitor. In 2006 we began using an estimation technique that had been peer reviewed by the University of Idaho and northern Rocky Mountain wolf managers. This technique bypasses the need to count pups in every pack, and instead relies on our documented packs, mean pack size, number of wolves documented in small groups not considered packs, and a percentage of the population believed to be lone wolves. Mathematically this technique is represented as:

Minimum Wolf Population Estimate = [# Wolves counted in documented packs with complete count + (# Documented packs lacking complete count * mean pack size) + (# Wolves in other documented wolf groups of size $\geq$2)] * (lone wolf factor)

where;

 # Wolves counted in documented packs with complete count = 179

 # Documented packs lacking complete count = 71

the number of documented packs that were extant at the end of 2009 was 94, complete pack size counts were obtained on 23 of them, leaving 71 packs with counts that were believed incomplete,

Mean pack size = 7.8

mean pack size (7.8) was calculated using only those packs (*n* = 23) for which biologists believed complete pack counts were obtained in 2009,

 # Wolves in other documented wolf groups of size $\geq$2 = 9

"total count" for those radiocollared wolves in groups of 2-3 wolves that were not considered packs under Idaho's definition,

lone wolf factor = 12.5%

a mid value from a range derived from 5 peer-reviewed studies and 4 non-reviewed papers from studies that occurred in North America and were summarized and reported in 2003 (Mech and Boitani 2003).

Using this technique, the 2009 wolf population estimate is 835 wolves and represents a decrease of ~2% over 2008's corrected wolf population estimate (856):

(179 + (71 * 7.8) + 9) * 1.125
(179 + (554) + 9) * 1.125
(742) * 1.125 =
835

It is important to recognize this estimate is not corrected for survey effort and represents only the minimum number of wolves estimated to be present in Idaho. The actual number of wolves in Idaho is likely more than the 'estimated minimum number,' as we did not include suspected packs (packs for which we did not have verified evidence) in the estimator. Also, changes in the estimate from year to year are not adjusted to differing amounts of effort put forth to document wolf activity. However, we are comfortable that this estimate is a good representation of packs that have been reported by the public and agency professionals and verified by wolf specialists, and thus a defensible estimate of the minimum population.

APPENDIX B. CONTACTS FOR IDAHO WOLF MANAGEMENT

Idaho Fish and Game Regional Offices at:

Headquarters Wildlife Bureau	(208) 334-2920
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

For information about wolves in Idaho and IDFG management:
http://fishandgame.idaho.gov/cms/wildlife/wolves/

To contact IDFG via email:
http://fishandgame.idaho.gov/inc/contact.cfm

The Nez Perce Tribe's Idaho Wolf Recovery Program:

Telephone: (208) 634-1061
Fax: (208) 630-5021
Mail: P.O. Box 1922
McCall, ID 83638-1922
Email: cmack@nezperce.org
jholyan@nezperce.org

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

U.S. Fish and Wildlife Service Northern Rocky Mountain Wolf Recovery:

For information about wolf recovery in the Northern Rocky Mountains, please visit the USFWS website at the following:
http://www.westerngraywolf.fws.gov/

To report wolf sightings within Idaho:

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

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