2012 IDAHO WOLF MONITORING PROGRESS REPORT

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EXECUTIVE SUMMARY

During January 1995 and January 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 populations of endangered gray wolves (*Canis lupus*) in the northern Rocky Mountain states of Idaho, Montana, and Wyoming. In May 2011, the USFWS removed (delisted) gray wolves in the northern Rocky Mountain Distinct Population Segment, excluding Wyoming, from the protections of the Endangered Species Act. Gray wolves were subsequently delisted in Wyoming in September 2012. As a result of these actions, wolves were delisted in the northern Rocky Mountains of the United States, and wolf management responsibility was transferred to the state of Idaho.

The Idaho Legislature adopted the *Idaho Wolf Conservation and Management Plan* in March 2002. The 2002 *Idaho Wolf Conservation and Management Plan* (2002 Wolf Plan) is the document used by the Idaho Department of Fish and Game (IDFG) and the Idaho Fish and Game Commission to guide management of wolves in Idaho. The Idaho Fish and Game Commission set wolf hunting and wolf trapping seasons for 2012-2013 in March 2012.

Wolves range in Idaho 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. During 2012, 218 wolf observations were reported on IDFG's website wolf observation report form.

The State of Idaho and Nez Perce Tribe (NPT) monitored wolves cooperatively in 2012 in Idaho through a Memorandum of Agreement signed in 2005. Biologists documented 117 packs extant within the state at the end of 2012. The year-end population was estimated at 683 wolves (Appendix A), an 11% decline since 2011. In addition, there were 23 documented border packs counted by Montana, Wyoming, and Washington that had established territories overlapping the Idaho state boundary at the end of 2012. Of the 66 Idaho packs known to have reproduced, 35 packs qualified as breeding pairs at the end of the year. These reproductive packs produced a minimum of 187 pups.

Biologists documented the deaths of 425 wolves in Idaho during 2012. Human-caused mortality comprised 418 of 425 (98%) documented wolf mortalities (harvest, $n = 329$; control [agency removal, and legal take], $n = 73$; other human causes, $n = 16$). The remaining 7 mortalities were attributed to unknown ($n = 5$) and natural ($n = 2$) causes.

The USDA-APHIS Wildlife Services (WS) agents classified 73 cattle, 312 sheep, and 2 dogs as confirmed wolf kills in 2012. Nineteen cattle and 25 sheep were considered probable wolf kills.

This annual progress report is a cooperative effort between the agencies involved and summarizes wolf activity and related monitoring in Idaho during 2012.

ACKNOWLEDGEMENTS

Wolf monitoring and management in Idaho is a cooperative effort between the State of Idaho, NPT, WS, and the USFWS. The NPT's Executive Committee and Wildlife Program Director Keith Lawrence provided support and input. Dustin Miller, Administrator of the Governor's Office of Species Conservation, provided valuable administrative support. Todd Grimm, George Graves, and all WS field personnel worked to resolve wolf-livestock conflicts. U.S. Fish and Wildlife Service personnel Mike Jimenez, Brian Kelly, and Hilary Cooley provided support and assistance with wolf monitoring. 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.

We would like to thank IDFG personnel Jeff Ashmead, Crystal Christensen, Dave Collins, Mike Elmer, Jerry Hugo, Lacy Robinson, Kathleen Trever, Jack Whitman, and Rick Williamson for their superb contributions. Bryan Aber, Ben Cadwallader, Lee Garwood, Jim Hayden, Michelle Kemner, Daryl Meints, Steve Nadeau, Jake Powell, Steve Roberts, Tom Schrempp, Mike Scott, David Spicer, and Laura Wolf contributed greatly to wolf monitoring efforts in addition to their regular responsibilities. Dr. Mark Drew provided training and valuable advice. The IDFG Wildlife Research staff Lindsey Bischoff, Mark Hurley, John Nelson, Katie Oelrich, George Pauley, and Pete Zager provided collaborative assistance both in the field and the office.

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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). Thirty-five wolves were released in central Idaho and 31 wolves were released in Yellowstone National Park during winters of 1995 and 1996 as part of the USFWS's recovery effort. Biological recovery goals were met in the NRM states in 2002.

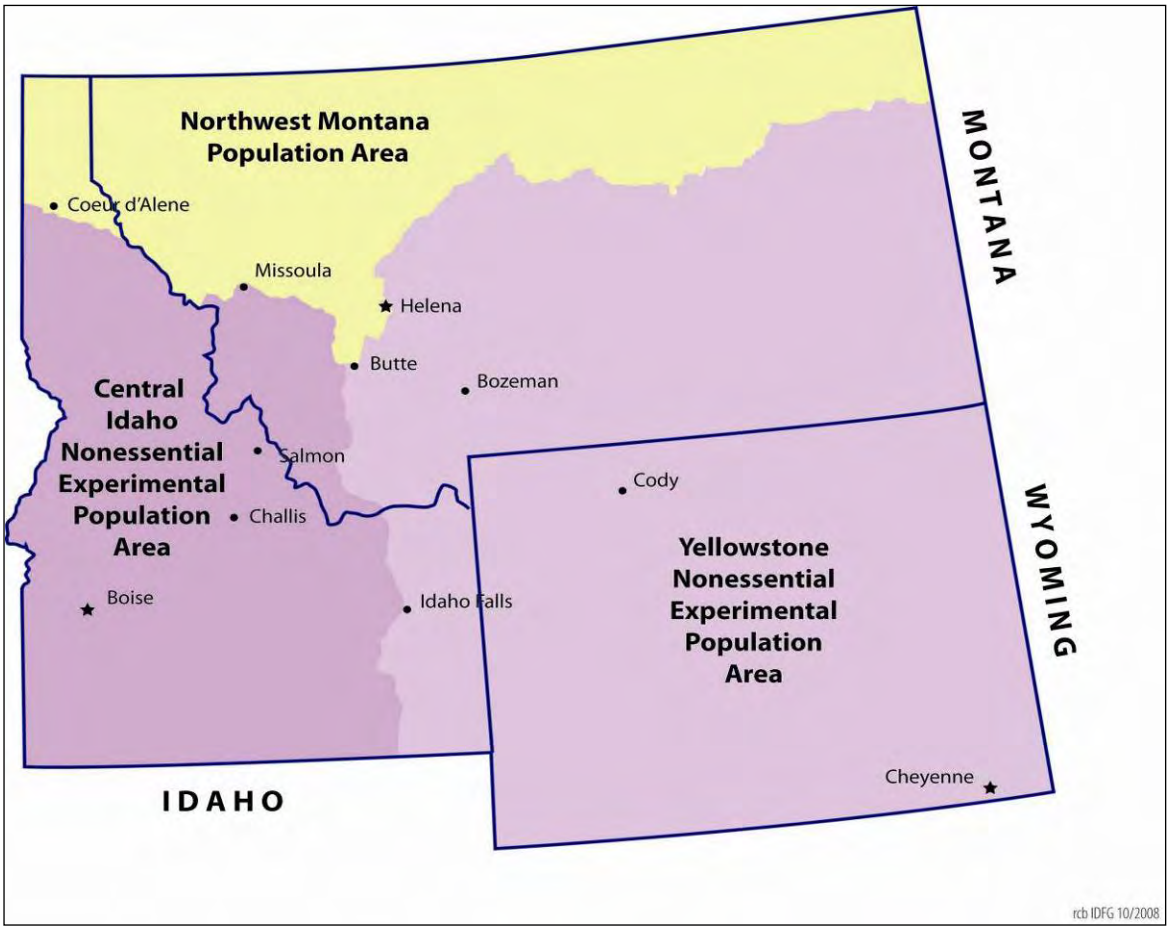

Figure 1. Recovery areas established by the U.S. Fish and Wildlife Service to restore gray wolf populations in the northern Rocky Mountains of Idaho, Montana, and Wyoming.

In March 2002, the Idaho Legislature adopted the *Idaho Wolf Conservation and Management Plan* (Idaho Legislative Wolf Oversight Committee 2002). The USFWS approved the 2002 *Idaho Wolf Conservation and Management Plan* (2002 Wolf Plan) in January 2004.

In January 2006, the State of Idaho became the designated agent of the USFWS and assumed day-to-day wolf monitoring and management authority.

In February 2008, the USFWS initiated the process to delist wolves by creating an NRM Distinct Population Segment (DPS; Figure 2) and published the delisting proposal in the Federal Register. The NRM DPS included all of Idaho, Montana, and Wyoming, eastern portions of Washington and Oregon, and a small part of northern Utah.

Figure 2. Northern Rocky Mountain gray wolf Distinct Population Segment boundaries established by the U.S. Fish and Wildlife Service in 2008 and 2009.

The delisting rule became final in March 2008 and the State of Idaho assumed full management responsibility for wolves. Delisting was challenged in federal court by a coalition of groups and in July 2008, a ruling returned Endangered Species Act (ESA) protections to wolves in the NRM DPS. The State of Idaho continued as the designated agent.

The USFWS published a second delisting rule in the federal register in January 2009. This delisting proposal was finalized in May 2009 and the State of Idaho again assumed full management responsibility for wolves. This delisting rule was also challenged in federal court. Idaho held the first regulated wolf hunting season from fall 2009-spring 2010.

A federal judge ordered in August 2010 that the rule to delist wolves be vacated, which restored ESA protections to the species (U.S. Fish and Wildlife Service 2010). Subsequently, on April 15, 2011, President Obama signed the 2011 federal budget bill that included language that directed the Secretary of the Interior to reissue the 2009 delisting rule. As a result of this action, wolves were again delisted in Idaho, Montana, eastern Washington, eastern Oregon, and north-central Utah, and wolf management responsibility returned to the State of Idaho on May 5, 2011.

For a more comprehensive chronology of events related to wolf recovery, conservation, and management in Idaho and the NRM, see:
http://fishandgame.idaho.gov/public/wildlife/wolves/?getPage=161.

Wolf monitoring and management activities have been reported by Wolf Management Zone since 2008. Idaho Department of Fish and Game (IDFG) divided the Southern Mountains Wolf Management Zone into 2 zones in 2011: the Southern Mountains and the Beaverhead Wolf Management Zone. The Upper Snake Wolf Management Zone was renamed the Island Park Wolf Management Zone (Figure 3). There are currently 13 wolf management zones. We summarize wolf population status information and monitoring activities carried out during 2012 by wolf management zones.

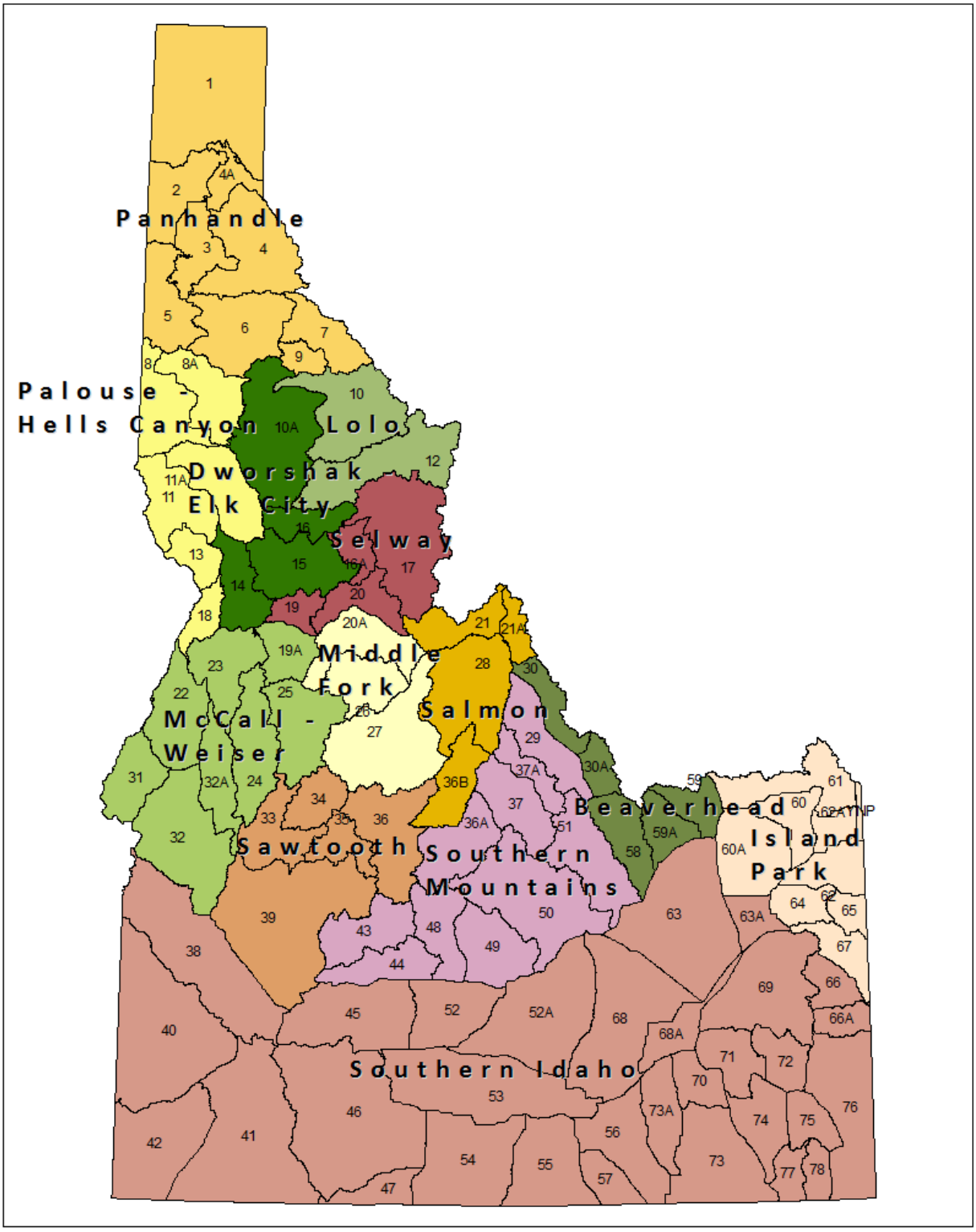

Figure 3. Idaho Wolf Management Zones. Wolf Management Zones were created by combining one or more elk management zones with similarities in wolf population, prey base, and current or potential conflicts with livestock and ungulates.

STATEWIDE SUMMARY

Idaho has a diverse landscape containing large expanses of varied habitats which support populations of elk, mule deer, white-tailed deer, moose, and other wolf prey species. Central Idaho includes 3 contiguous wilderness areas: the Selway-Bitterroot, Frank Church-River of No Return, and Gospel Hump encompasses 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- western hemlock vegetation types, transitioning into continental climates of Douglas fir and ponderosa pine to the south. Elevations vary from 1,500 feet (457 m) to just over 12,000 feet (3,657 m). Annual precipitation varies from less than 8 inches (20 cm) at lower elevations to almost 100 inches (254 cm) at upper elevations.

Wolf Population Status

The Idaho wolf population increased since reintroductions in 1995 and 1996 (Figures 4 and 5). Although the number of documented packs increased between 2011 and 2012 (Figure 5), the estimated year-end population count declined approximately 11%, primarily due to a reduction in pack size in 2012 as compared to 2011. Average (median) pack size is likely smaller than in past years due to wolf harvest, effective depredation control, or potentially other factors.

We monitored 82 radiocollared wolves at least once during 2012, including 47 wolves captured and radiocollared during the year. Twenty-six radiocollared wolves died during the year and 13 were either missing or no longer functioning at year-end. Loss of radiocollars during harvest seasons has increased the challenge of monitoring wolves. Ten radiocollared wolves were removed by harvest during 2012. As a result, complete, final year-end counts were obtained from fewer packs than in prior years, and consequently pack size estimates (and therefore population estimates) may be less accurate than in years with a larger sample of complete year-end pack counts.

The population estimate for 2012 was 683 wolves (Appendix A).

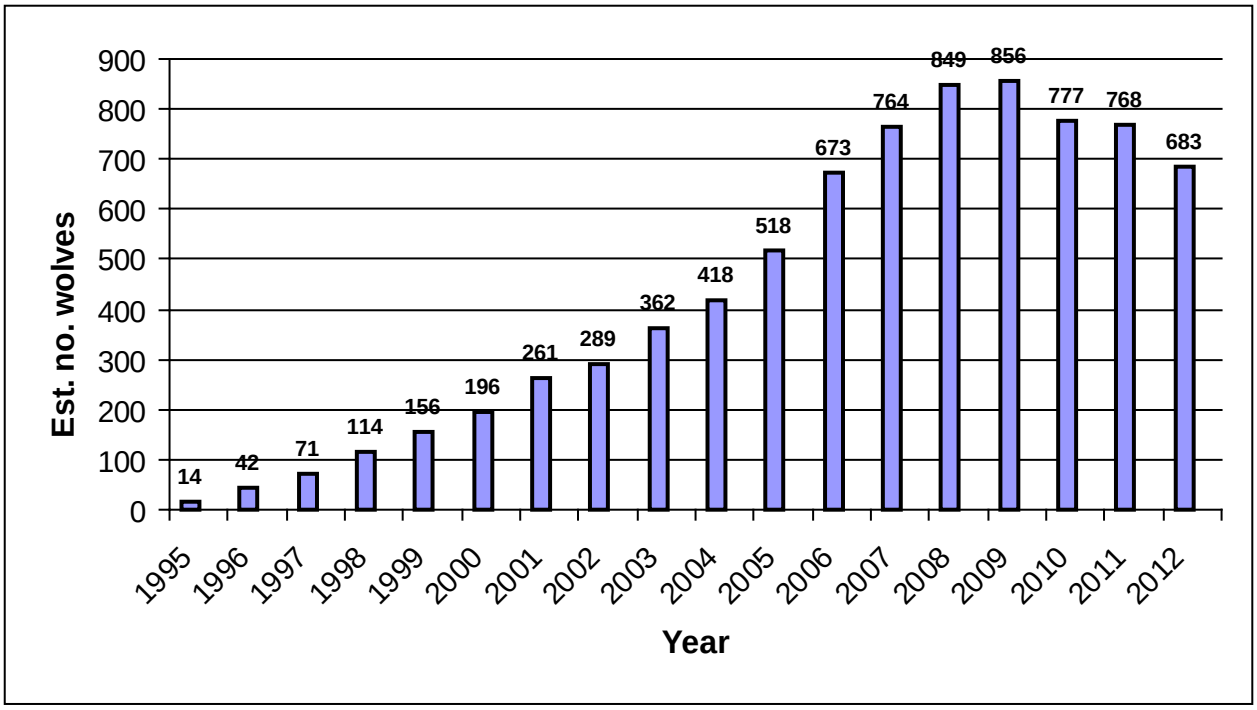

Figure 4. Estimated number of wolves in Idaho at year-end, 1995-2012. Annual numbers were based on best information available and were retroactively updated as new information was obtained. See Appendix A for population estimation technique.

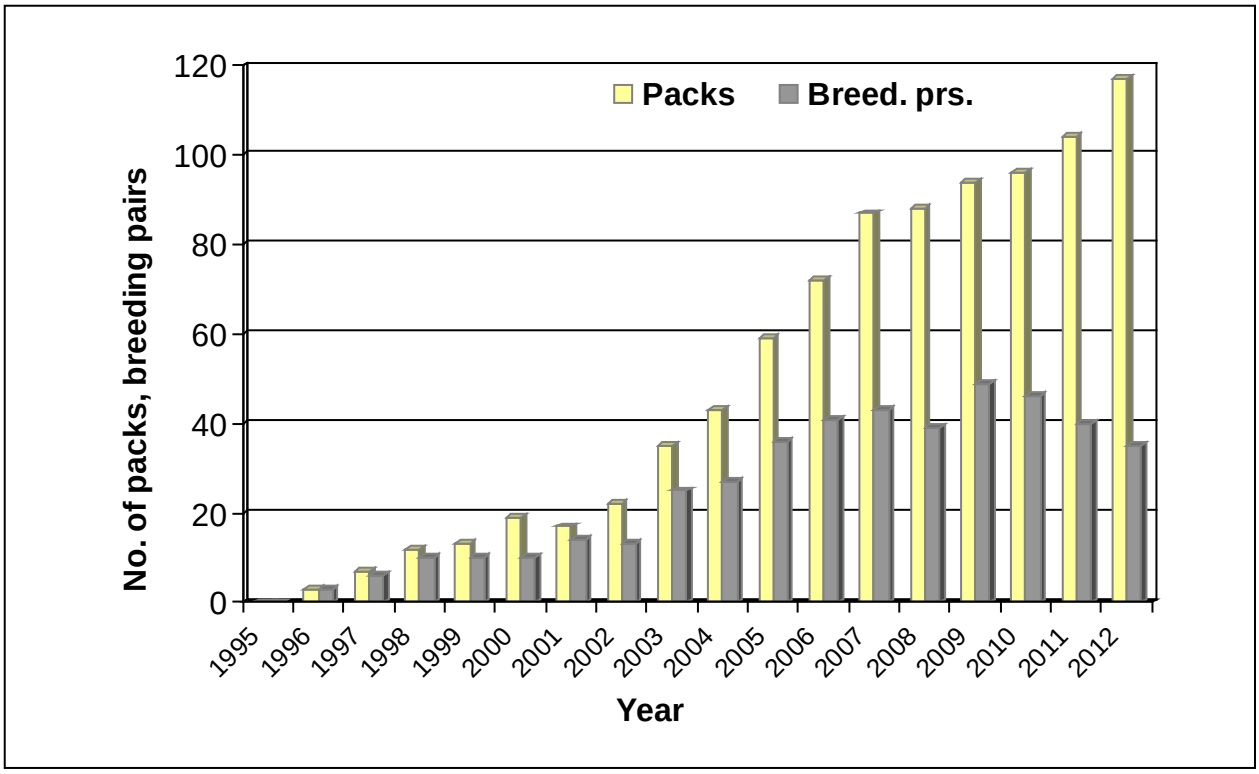

Figure 5. Number of documented wolf packs and breeding pairs in Idaho, 1995-2012. Annual numbers were based on best information available and were retroactively updated as new information was obtained.

Population Status, Distribution, and Reproduction

The Idaho year-end wolf population estimate was obtained by adding the minimum number of wolves detected in the documented packs with complete counts, plus an estimate of wolves in documented packs without complete counts, plus the number of wolves documented in wolf groups that do not qualify as packs, and adjusted for lone wolves not associated with groups or packs. See Appendix A for a more detailed documentation of the population estimate. This method incorporates a count of a portion of the wolf packs and uses this data to produce an estimate.

Estimates of wolf numbers, pup production, and breeding pairs are conservative. The "minimum number of wolves detected" is the number of wolves observed from the air during winter (December through January) telemetry flights or through other methods, and represents our year-end knowledge regarding status of wolf packs and groups (Table 1). Breeding pair status was evaluated considering all data collected for a pack from spring through winter. Breeding pairs were determined by either: harvest or capture of ≥2 pups after December 31, 2012 from a documented pack with ≥2 adults known present at end of year, or summer verification (via visual/aural/remote camera observations or DNA analysis) of ≥2 pups and 2 adults and one or more of the following: late fall/winter aerial, ground, or trail camera observations by IDFG/NPT or cooperating agency biologists consistent with the persistence of ≥2 pups and 2 adults; late fall/winter verified public observations consistent with existing pack information and indicating the persistence of ≥2 pups and 2 adults; and/or no documented mortality indicating <2 pups or <2 adults at end of year.

Wolves are 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 117 documented packs present at the end of 2012, territories of most were predominantly on public lands managed by the U.S. Forest Service (USFS). Twenty packs were newly documented in 2012 for Idaho or reinstated after having been previously removed: 5 in the Panhandle and Sawtooth zones, 4 in the Southern Mountains Zone, 2 in the Island Park Zone, and one each in the Beaverhead, McCall-Weiser, Middle Fork, and Southern Idaho zones. Three of the newly documented packs were determined to have been established prior to 2012 and were retroactively added as documented packs in 2011. Six packs were eliminated from documented status by the end of 2012 due to disbanding or lack of evidence during the past 2 years that indicated they remained extant.

Of 117 documented packs, we confirmed that a minimum of 66 produced litters, and 35 packs qualified as breeding pairs (Table 1). A minimum of 187 pups were produced in 2012, and were identified either through spring/summer field investigations or from aging of harvested individuals during mandatory checks. Documented litter sizes ranged from 1-8 pups.
The average minimum litter size for those packs where counts were presumed complete (n = 19) was 4.6 pups per litter. Wolf pup counts and breeding pair determinations were conservative because complete pup counts could not always be obtained, and some documented packs were not surveyed.

Based on the presence of multiple adults (>2), 3 packs newly documented or reinstated in 2012 were presumed to be extant during the previous year and were retroactively added to the number

of documented packs for 2011. Based on this retroactively corrected pack count, the estimated wolf population decreased ~11% between 2011 ($\hat{N}$ = 768) and 2012 ($\hat{N}$ = 683; Figure 4). In 2012, the median pack size calculated based on those packs (n = 16) for which complete counts was obtained was 5 wolves, compared to a median of 6.5 wolves per pack in 2011. The reduction in estimated median pack size has strong influence on the statewide population estimate (Appendix A).

Table 1. Number of wolves detected, documented packs, and other documented wolf groups; pack reproductive status, known dispersal, and documented mortality by cause; and wolf-caused livestock depredations within Idaho Wolf Management Zones, 2012.

	Panhandle	Palouse-Hells Canyon	Dworshak-Elk City	Lolo	Selway	McCall-Weiser	Middle Fork	Salmon	Sawtooth	Southern Mtns	Beaver-head	Island Park	South Idaho	Total
Minimum number wolves detected[a]	55	10	29	33	0	18	2	27	70	20	4	54	1	323
Documented packs														
No. during year	20	3	14	7	4	14	8	12	20	10	3	7	1	123
No. removed[b]	0	0	0	1	1	1	2	0	1	0	0	0	0	6
No. at end of year[c]	20	3	14	6	3	13	6	12	19	10	3	7	1	117
Other documented groups[d]														
No. during year	1	1	1	2	0	3	1	2	1	0	0	1	0	13
No. removed[b]	0	0	0	0	0	2	0	0	0	0	0	0	0	2
No. at end of year[c]	1	1	1	2	0	1	1	2	1	0	0	1	0	11
Reproductive status														
Minimum no. pups produced(died)	46(5)	9	21(4)	8	4(4)	14(3)	1(1)	16(3)	40(11)	9(3)	4(2)	13(1)	2	187(37)
No. of reproductive packs	11	3	11	3	1	5	1	5	15	3	2	5	1	66
No. of breeding pairs[e]	8	1	5	2	0	4	0	4	5	1	1	4	0	35
Known dispersal	0	0	1	1	0	1	0	2	7	0	0	0	0	12
Documented mortalities														
Natural	0	0	0	1	0	0	0	0	0	1	0	0	0	2
Control[f]	3	1	2	14	0	12	0	2	19	9	6	4	1	73
Harvest	66	8	69	27	29	27	18	34	28	10	2	10	1	329
Other human-caused[g]	1	1	1	1	0	3	1	1	4	0	1	2	0	16
Unknown	0	0	0	2	1	1	0	0	1	0	0	0	0	5
Total mortalities	70	10	72	45	30	43	19	37	52	20	9	16	2	425
Confirmed (probable) wolf-caused livestock losses														
Cattle	0	1(3)	3(2)	0	0	12(2)	0	8	4(3)	34(4)	8(1)	2(3)	1(1)	73(19)
Sheep	0	23	0	0	0	38(1)	0	0	73(3)	79(21)	70	29	0	312(25)
Dogs	1	0	0	0	0	0	0	0	0	1	0	0	0	2
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0

[a] Number of wolves detected by wolf program personnel from field observations throughout the year, monitoring flights conducted during winter 2012/2013, and documented mortalities occurring from 1/1 – 1/15/12; represents end of year (2012) data. Summing this row does not equate to number of wolves estimated to be present in the population.

[b] Includes documented packs/other documented groups removed via agency control, other human-related, or natural causes. Includes documented border packs tallied for Idaho.

Table 1. Continued.

[c] Number remaining extant at end of 2012 after subtracting those removed via agency control, other human-related, or natural cause, and those removed due to lack of verified evidence for the preceding 2 years. Includes documented border packs tallied for Idaho.

[d] Other documented wolf groups include known and suspected mated pairs or verified groups of wolves that do not meet Idaho's definition of a documented pack.

[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 least 2 pups that survive until December 31 of the year of their birth…".

[f] Includes agency lethal control and legal take by landowners or authorized by the State.

[g] Includes all other human-related deaths.

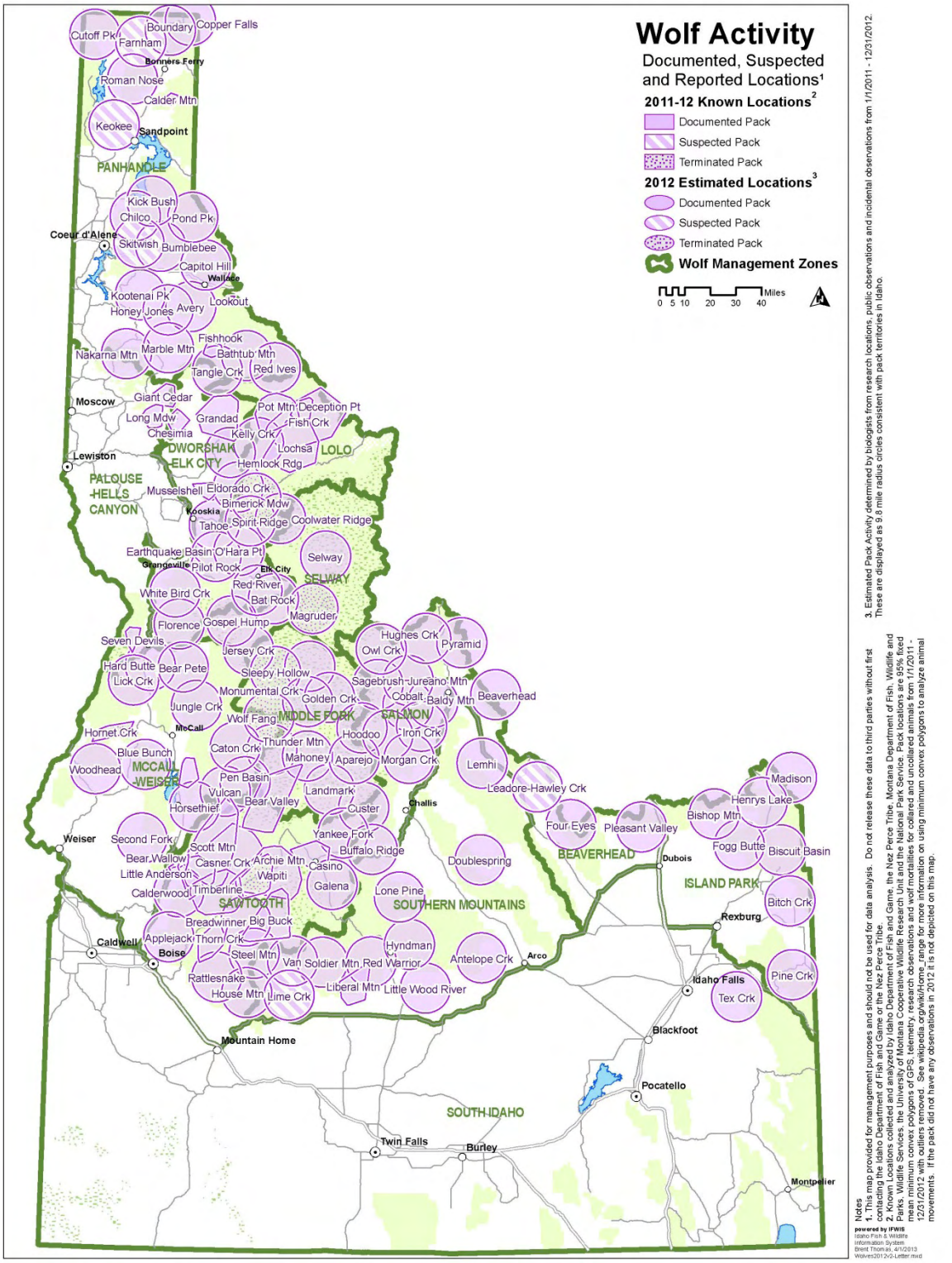

Figure 6. Distribution of documented and suspected wolf packs in Idaho, 2012.

Mortality

We documented 425 wolf mortalities within the state in 2012. Nearly all documented mortalities were human-caused (*n* = 418; 98%). Of the 418 confirmed human-caused mortalities, 329 wolves were harvested legally by hunters and trappers, 73 wolves were lethally controlled (59 wolves removed by Wildlife Services [WS] in response to livestock depredations or killed by livestock producers and landowners in defense of property, 14 wolves were removed for predator control in the Lolo Zone), and the remaining 16 were attributed to other human-caused sources (illegal take, *n* = 7; wounding loss/illegal take, *n* = 3; vehicle strike, *n* = 3; non-target and over-limit harvest, *n* = 2; capture related, *n* = 1). Wolf mortality not associated with human causes was attributed to unknown (*n* = 5) and natural (*n* = 2) causes. More wolves were lethally removed by WS and livestock producers in Idaho in 2012 than in 2011 (*n* = 59 and *n* = 50, respectively; Figure 7). These mortality figures underestimate mortality occurring within the wolf population, as documenting mortalities of uncollared wolves is difficult. For example, only 2 wolf mortalities due to natural causes were recorded, whereas more individuals likely died from non-human related factors that went undocumented. Further, we are unable to estimate deaths of pups that occurred before field surveys were conducted.

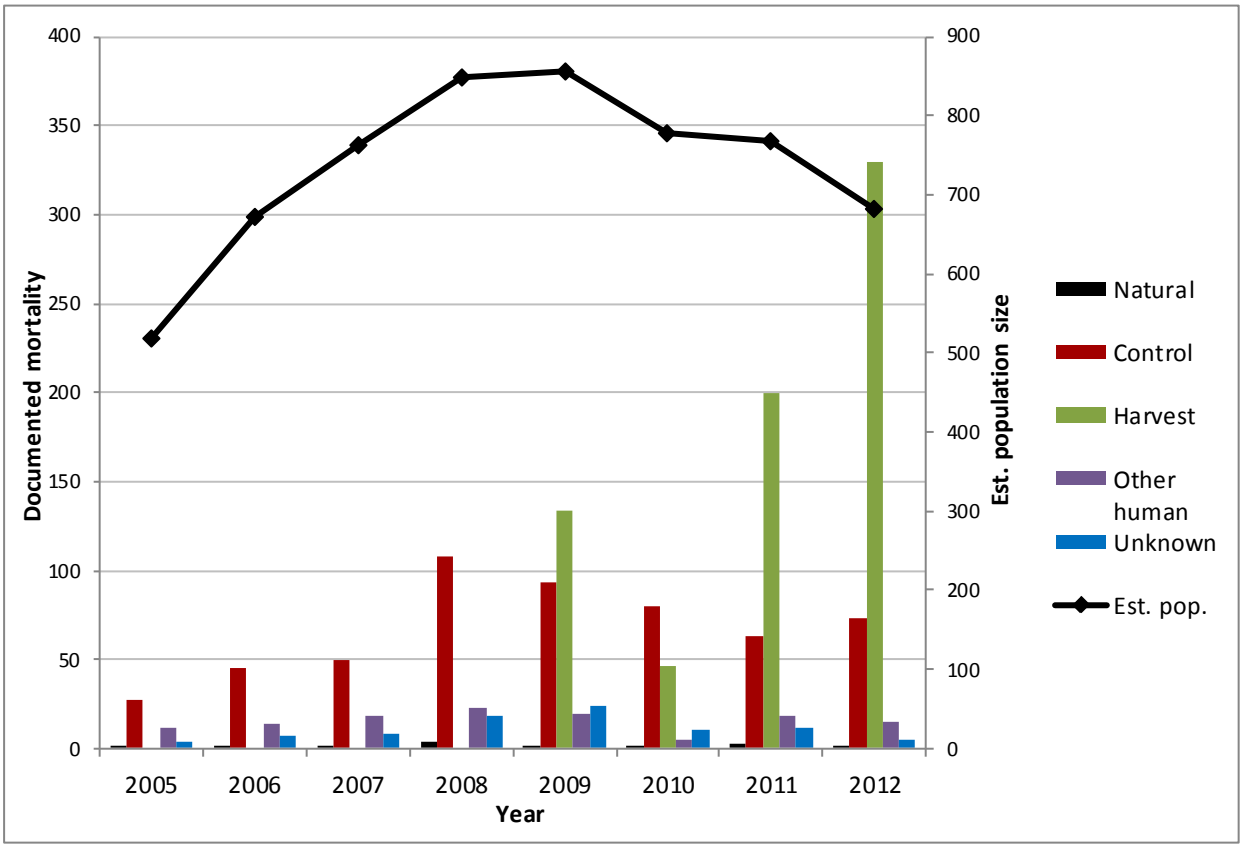

Figure 7. Annual documented wolf mortality plotted against year-end estimated population size, 2005-2012.

Livestock and Dog Mortalities

Wildlife Services recorded 92 cattle, 337 sheep, and 2 dogs that were classified as confirmed or probable wolf depredations (killed by wolves) during the 2012 calendar year (Table 1; USDA-APHIS Idaho Wildlife Services unpublished data 2012). Wolf depredations and cattle losses were highest in the Southern Mountains Zone (Figure 8). Wolf depredation incidents and losses for sheep occurred primarily within the McCall-Weiser, Sawtooth, and Southern Mountains zones, although notable losses were also recorded on the U.S. Sheep Experiment Station, which is situated on the borders of the Beaverhead and Island Park zones (Figure 9). During 2012, 59 wolves were killed by WS or killed legally by livestock producers or private citizens to resolve wolf conflicts with livestock or dogs in Idaho (Figure 10).

Research

The IDFG, NPT, and other organizations continued to coordinate and support scientific research assisting in long-term wolf monitoring efforts, conservation, and management.

Elk/Wolf Ecology Study

During 2012, IDFG continued efforts to measure the effects of wolf predation and habitat on elk populations across Idaho. Project objectives included: 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 Clearwater River study area in the Lolo Zone) where detailed information regarding wolf and ungulate interactions is being gathered via satellite radiocollars. These data will improve our understanding of predator/prey dynamics 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.

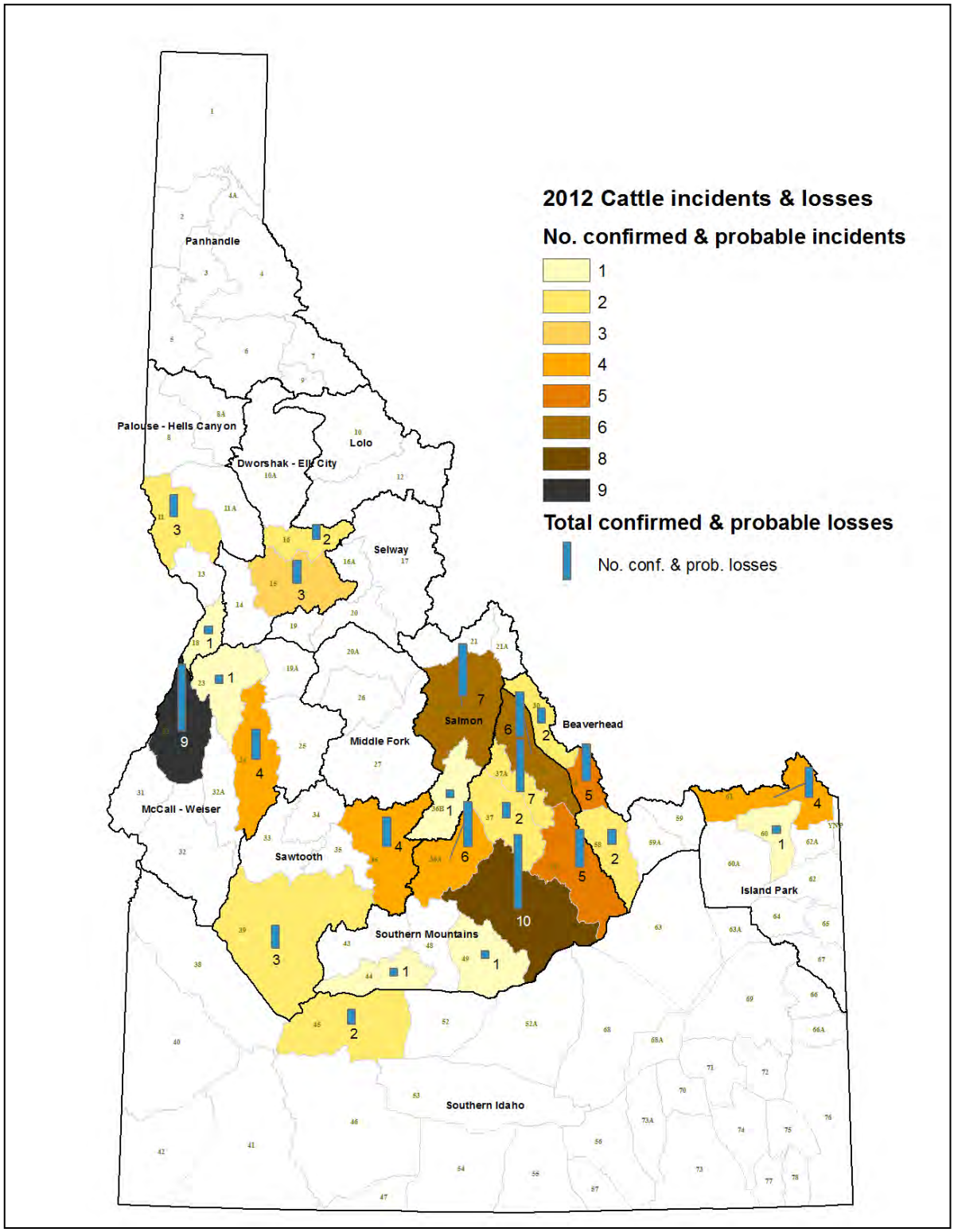

Figure 8. Number of confirmed and probable cattle depredation incidents and corresponding losses in Idaho attributed to wolves by Game Management Unit and Wolf Management Zone, 2012.

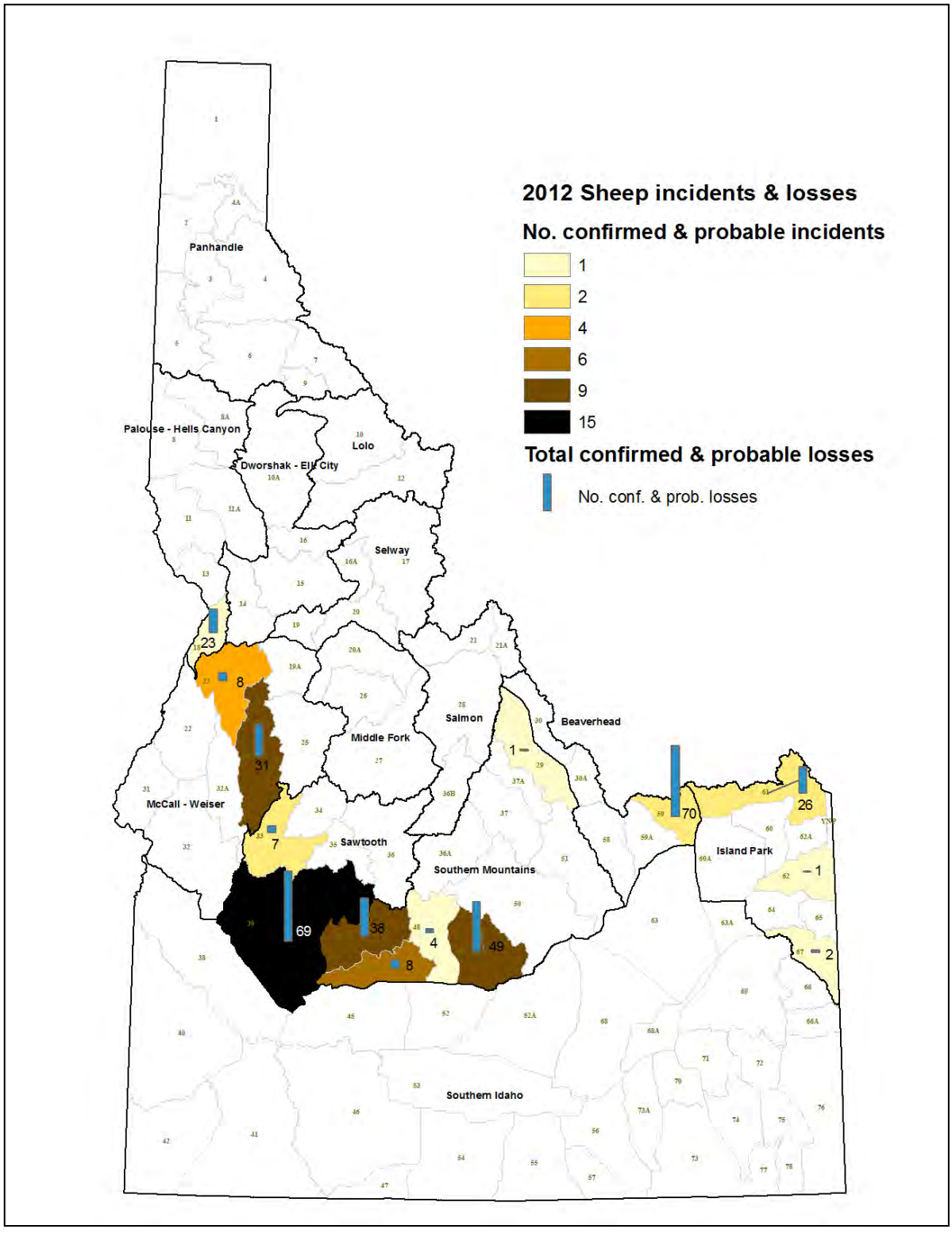

Figure 9. Number of confirmed and probable sheep depredation incidents and corresponding losses in Idaho attributed to wolves by Game Management Unit and Wolf Management Zone, 2012.

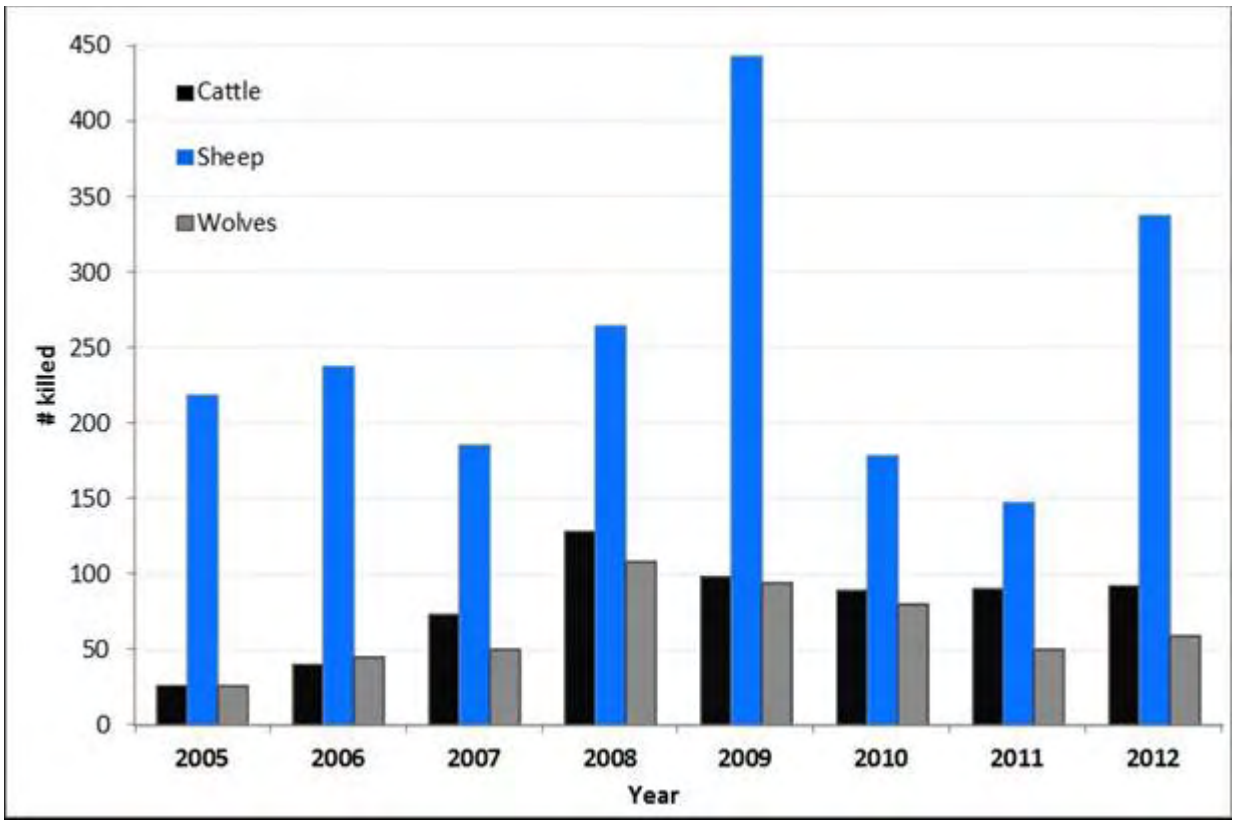

Figure 10. Number of confirmed and probable cattle and sheep killed by wolves, and corresponding number of wolves removed through agency control and legal take by private citizens under federal and state regulations, 2005-2012.

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

Collaborators with The University of Montana and Montana Cooperative Wildlife Research Unit have devised a 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, collaborators evaluated a variety of survey methods that have demonstrated strong relationships to wolf abundance and distribution. Methods tested were hunter surveys, rendezvous site surveys, howl boxes, and rub stations.

In 2010 and 2011, collaborators conducted a statewide survey of wolf observations made by 13,000 hunters in Idaho to generate data for use in an occupancy model. Data from howling and sign surveys at predicted wolf rendezvous sites and locations from radiocollared wolves were also used to populate the occupancy model. Agreement was found between occupancy modeling results and estimates of wolf abundance and distribution reported by IDFG and NPT derived from intensive radiotelemetry-based monitoring in 2009 and 2010. Estimates from occupancy models that did not include data from radiocollared wolves were commensurate with existing statewide counts. Furthermore, models populated with hunter survey and rendezvous site survey

data outperformed those populated with radiotelemetry data. Estimates of abundance with precision can be useful for addressing state management objectives, evaluating population responses to management actions such as regulated hunting, and documenting federal recovery requirements for listed species. Each of the survey methods collaborators designed over the course of this project (hunter surveys, rendezvous site surveys, howlboxes, and rub stations) can provide the data needed to populate a patch occupancy model; further, some of the methods can yield highly detailed information on wolves in focal areas, providing biologists with unprecedented tools for understanding wolves in areas where management interest is high. Collaborators 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 population size.

To facilitate patch occupancy modeling, IDFG included a question on hunter reports required of all deer and elk hunters that asked hunters if they saw a wolf while hunting deer or elk in 2012. IDFG mailed survey questionnaires to 9,374 hunters who reported seeing wolves while hunting to collect specific information on their sightings. Survey results are currently being analyzed and will be reported in 2013.

Gray Wolves and Human-caused Mortality

Wolves live in family groups comprised of a breeding pair, their offspring, and several related helper wolves. Mortality, however, can affect this family group structure and result in smaller packs with adopted, unrelated individuals. Little is known about how characteristics of groups (i.e., size, composition, tenure) affect population growth. Furthermore, group characteristics may also affect individual behavior, group stability, and reproduction. States in the Rockies recently initiated public hunting and trapping seasons for gray wolves and our study is well-positioned to answer important questions about how that new source of mortality might affect gray wolf pack composition and reproduction.

Collaborators with The University of Montana and Montana Cooperative Wildlife Research Unit began genetically sampling wolves in Idaho in 2008 (Game Management Units [GMUs] 28, 33, 34, 35) and currently have a multi-year dataset for packs in central Idaho that spans both before and after hunting and trapping seasons were established. By collecting fecal samples at rendezvous sites, collaborators are able to generate full pack pedigrees for each of our study packs and observe how pack composition and fecundity may change over time. In summer 2012, field surveys were conducted in 3 focal study areas that span a range of human-caused mortality: southwest Alberta, Idaho, and Yellowstone National Park. Two hundred and forty-one potential wolf rendezvous sites were surveyed within pack territories that bred in 2012 and 2,620 fecal samples were collected for DNA analysis. Seventeen litters were detected between the 3 study areas. DNA analyses of collected samples are currently underway. Collaborators will continue to gather wolf satellite-collar location data that can be used to answer questions about how wolf pack composition affects helping behavior, particularly pup-guarding behavior, in packs. Preliminary analyses using data from Idaho wolves indicates that female and male helper wolves do differ in the amount of time they spend guarding pups. Changes to pack composition may affect such helping behavior. Full analyses exploring the effects of group size and genetic relatedness as well as prey and predator abundance will be conducted once all of the data are

compiled. Field sampling will continue through 2014 and full study results will be published in 2015.

Using Remote Cameras and DNA to Monitor Wolf Pack Reproduction in the Idaho Panhandle

Post-delisting monitoring requirements for gray wolves include documentation of wolf pack reproduction and the survival of pups to the end of the year they were born. We evaluated the feasibility of meeting these monitoring requirements through the use of DNA analysis and remote cameras. During summer 2012, we placed remote cameras at 72 locations across the Panhandle Region in an attempt to acquire pack and pup counts. Remote camera results yielded pack counts or pup counts for 5 wolf packs. We also collected DNA samples from scats at wolf rendezvous sites. We compared genotypes from scats collected at rendezvous sites to those collected from captured pups to determine if known individuals could be detected. DNA genotyping will be completed by the University of Idaho in 2013. These techniques have potential to provide an efficient means of monitoring wolf pack reproduction.

Evaluation of Wolf Impacts on Cattle Productivity and Behavior

Oregon State University and the USDA Agricultural Research Service initiated a research project in 2008 to evaluate the effects of gray wolf presence on rangeland cattle production systems in western Idaho and northeastern Oregon (Clark et al. 2009, 2010). This on-going project instruments mature beef cows with custom-made Global Positioning System (GPS) collars (Clark et al. 2006) to monitor cattle resource selection and activity budget responses to spatiotemporal variability in wolf presence levels. Ten collared cows in each of 8 study areas are GPS tracked at 5-minute intervals throughout 5-8 month grazing seasons. Four study areas occurring in western Idaho are ecologically and managerially-paired with 4 study areas in northeastern Oregon. The study areas are USFS grazing allotments ranging from about 39 mi^2 (10,000 ha) to 320 mi^2 (83,000 ha) in size. Study area minimum elevations range from about 1,804 to 4,101 feet (550 to 1,250 m) and maximum elevations from about 5,249 to 8,530 feet (1,600 to 2,600 m). Wolf presence on these study areas is monitored during the grazing season using a number of complementary approaches including GPS- and VHF radiocollaring of wolves, wolf scat sampling routes, trail cameras, direct observation, and depredation reporting. Wolf presence levels are classified among and within grazing seasons using these data.

The project is being implemented in 2 phases. The first phase used a Before-After/Control-Impact Pairing experimental design to contrast cattle responses between Oregon and Idaho study areas during 2008 and 2009 when wolf presence on the Oregon study areas was generally quite low and much higher on Idaho study areas. In 2010, with wolf population expansion in Oregon, the project transitioned to the second phase which uses a longitudinal design contrasting cattle responses between time periods of low and high wolf presence in each of the 8 study areas.

At the end of the 2012 season, all 80 cow collars deployed among the 8 study areas had been recovered. As in all previous years, each study area contained a viable sample (n >3) of collar data sets spanning the entire grazing season

A parent study to this larger project also continues on 2 study areas in central Idaho. This earlier study, initiated in 2005, has now successfully compiled 7 years of GPS-based beef cattle

resource selection response data relative to wolf presence on these study areas. A preliminary report summarizing results from data acquired 2005 - 2007 appeared in the October 2012 issue of the peer-reviewed journal, Rangelands.

Outreach

IDFG, NPT and cooperating agency biologists provided wolf-specific information and education programs to high school and college students, community and professional groups, wildlife biologists, agency personnel, Idaho Master Naturalists, sportsmen's clubs, and outfitters and guides. We participated in dozens of interviews with local radio, newspaper, and TV outlets and talked to countless members of the public via telephone, email, and in person. Also, news articles were released by IDFG regularly that summarized 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.

As part of the 2012-2013 wolf harvest season, the Fish and Game Commission established wolf trapping seasons. Those wishing to participate in the trapping seasons were required to attend a wolf trapper education class before purchasing wolf trapping tags. Program biologists, in collaboration with regional staff and volunteers, developed and delivered a curriculum for the classes. Classes focused on trapping ethics, trapping regulations, wolf biology and conservation, avoiding non-target captures, equipment selection, and trapping and snaring techniques. IDFG held 41 8-hour classes in for the 2011-2012 season and certified 963 individuals to trap wolves. Another 24 classes were held for the 2012-2013 season and approximately 440 trappers were certified.

The IDFG online wolf reporting system continued to provide an opportunity for the public and professionals to record wolf observations in Idaho. During 2012, 218 wolf observations were reported on the website.

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

Background

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

Monitoring Summary

The Panhandle Zone was occupied by 15 documented resident packs, 5 documented resident border packs, 3 suspected packs, and 1 other documented group during 2012 (Figure 11, Table 2). Three new resident packs were documented in 2012. One pack previously residing in the Dworshak-Elk City Zone was reassigned to the Panhandle Zone in 2012. One suspected pack for 2011 was upgraded to documented in 2012, and 1 new suspected pack was identified for 2012. One border pack attributed to Montana in 2011 was claimed by Idaho in 2012. Eight border packs were tallied for Montana and 2 borders packs were tallied for Washington. Eleven documented resident and documented resident border packs produced litters, and 8 qualified as breeding pairs (Table 2). The reproductive status of 9 packs was unknown. Documented mortalities (n = 70) were attributed to harvest (n = 66), control (agency removal and legal take; n = 3) and other human causes (n = 1; Table 3). No confirmed or probable wolf-caused livestock depredations occurred in this zone during 2012 (Table 3). One confirmed domestic dog depredation occurred in this zone in 2012 (Table 3).

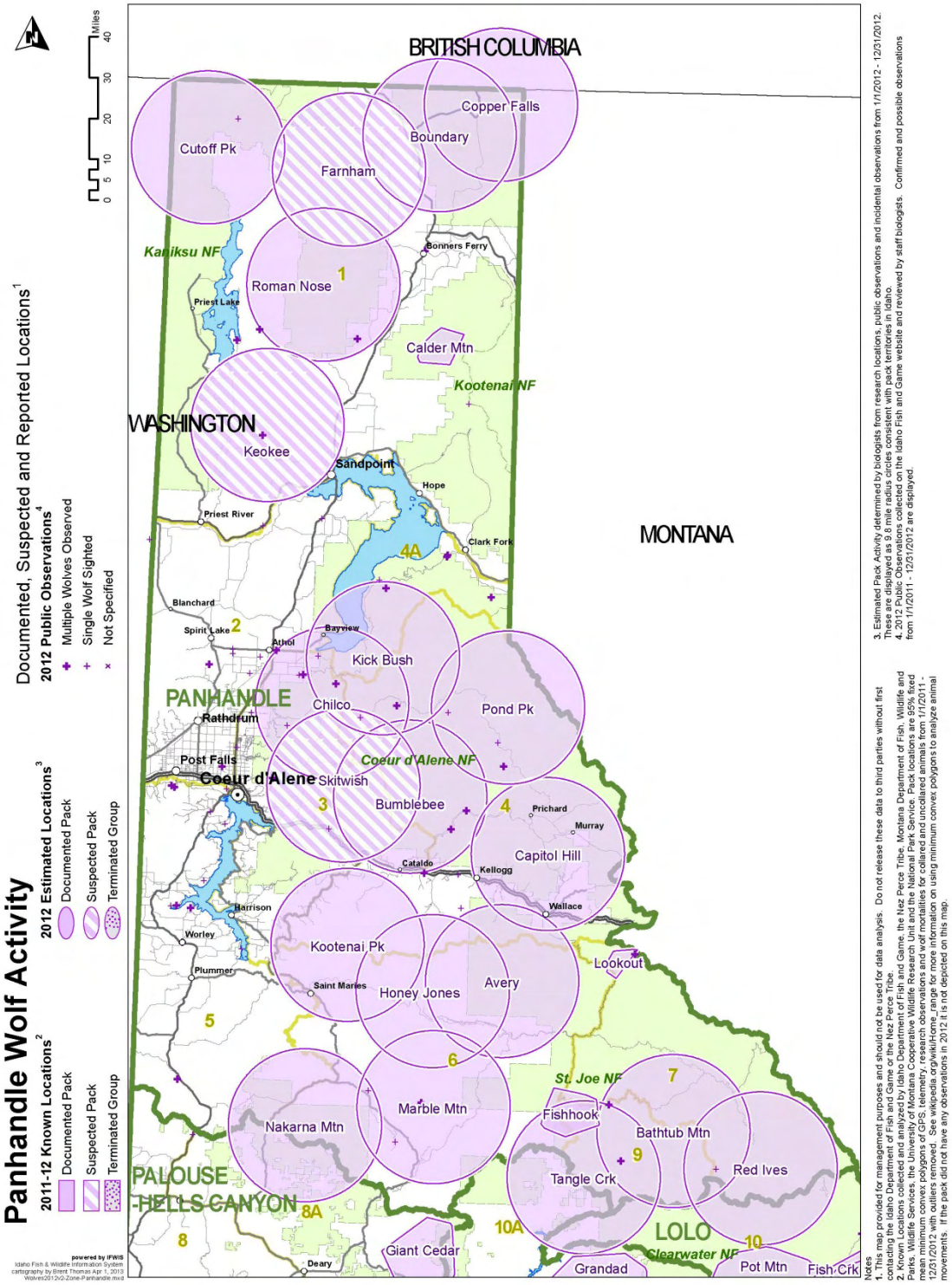

Figure 11. Distribution of documented and suspected wolf packs in the Panhandle Wolf Management Zone, 2012.

Table 2. Minimum number of wolves detected, reproductive status, and dispersal for documented and suspected wolf packs and other documented wolf groups within the Panhandle Wolf Management Zone, 2012.

Wolf group[a]	Min. no. wolves detected[b]	Reproductive status: Min. no. pups prod. (died)[c]	Reproductive status: Breeding pair[d]	Known dispersal
Documented Pack				
Avery	?	?	NO	0
Bathtub Mountain	4	1(1)	NO	0
Blue Creek (MT)				
Boundary	?	?	NO	0
Bumblebee	4	4	YES	0
Calder Mountain (ID)[e]	4	5	YES	0
Capitol Hill	?	?	NO	0
Chilco	5	4(1)	YES	0
Copper Falls (ID)[e]	4	5	YES	0
Cutoff Peak (ID)[e]	4	6(1)	YES	0
DeBorgia (MT)[e]				
Diamond (WA)[e]				
Fishhook	6	8	YES	0
Honey Jones	?	?	NO	0
Kick Bush	4	5	YES	0
Kootenai Peak	?	?	NO	0
Lookout (ID)[e]	4	6(2)	YES	0
Lost Peak (MT)[e]				
Marble Mountain	?	1	NO	0
Mullan (MT)[e]				
Nakarna Mountain	?	?	NO	0
Pond Peak (ID)[e]	?	?	NO	0
Preacher (MT)[e]				
Red Ives	4	?	NO	0
Roman Nose	?	?	NO	0
Salmo (WA)[e]				
Silver Lake (MT)[e]				
Solomon Mountain (MT)[e]				
Tangle Creek	8	1	NO	0
Twilight (MT)[e]				
Subtotal	51	46(5)		0
Suspected Pack				
Farnham	?	0		0
Keokee	3	0		0
Skitwish	?	0		0
Subtotal	3	0		0
Other Documented Group				
B517	1	0		0
Subtotal	1	0		0
Wolf Management Zone (WMZ) Total	55	46(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.).

Table 2. Continued.

[b] Number of wolves detected by wolf program personnel from field observations throughout the year, monitoring flights conducted during winter 2012/2013 and documented mortalities occurring from 1/1 - 1/15/13; represents end of year (2012) data. Summing this column does not equate to number of wolves estimated to be present in the population.
[c] Number in parentheses indicates known pup mortality; pup mortalities tallied in the appropriate row/column in Documented Mortality in Table 3.
[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] Border packs officially tallied to (STATE); territory known/likely shared with ID. Data on these packs can be found in Rocky Mountain Wolf Recovery 2012 Annual Report or other source.

Table 3. Documented wolf mortality and wolf-caused livestock depredations by Game Management Unit within the Panhandle Wolf Management Zone, 2012.

	Documented mortality					Confirmed (probable) wolf-caused livestock losses			
GMU	Natural	Control[a]	Harvest	Other human[b]	Unk.[c]	Cattle	Sheep	Dogs	Other
1	0	1	17	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0
3	0	2	1	0	0	0	0	1	0
4	0	0	9	0	0	0	0	0	0
4A	0	0	5	1	0	0	0	0	0
5	0	0	1	0	0	0	0	0	0
6	0	0	21	0	0	0	0	0	0
7	0	0	12	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0
WMZ Total	0	3	66	1	0	0	0	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.

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

Background

The Palouse-Hells Canyon Zone is composed of GMUs 8, 8A, 11, 11A, 13, and 18. GMUs 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 remain. 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 (IDFG 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 (IDFG 2007).

Management Summary

The Palouse-Hells Canyon Zone was occupied by 3 documented packs at the end of 2012 (Figure 12, Table 4). All were reproductive, but only one qualified as a breeding pair (Table 4). Wolf mortalities (n = 10) were attributed to harvest (n = 8), control (agency removal and legal take; n = 1), and unknown causes (n = 1; Table 5). Confirmed (n =1) and probable (n = 3) wolf-caused cattle losses were attributed to 1 documented pack and unknown wolves (Table 5). Confirmed (n = 23) wolf-caused domestic sheep losses were attributed to 1 documented pack (Table 5).

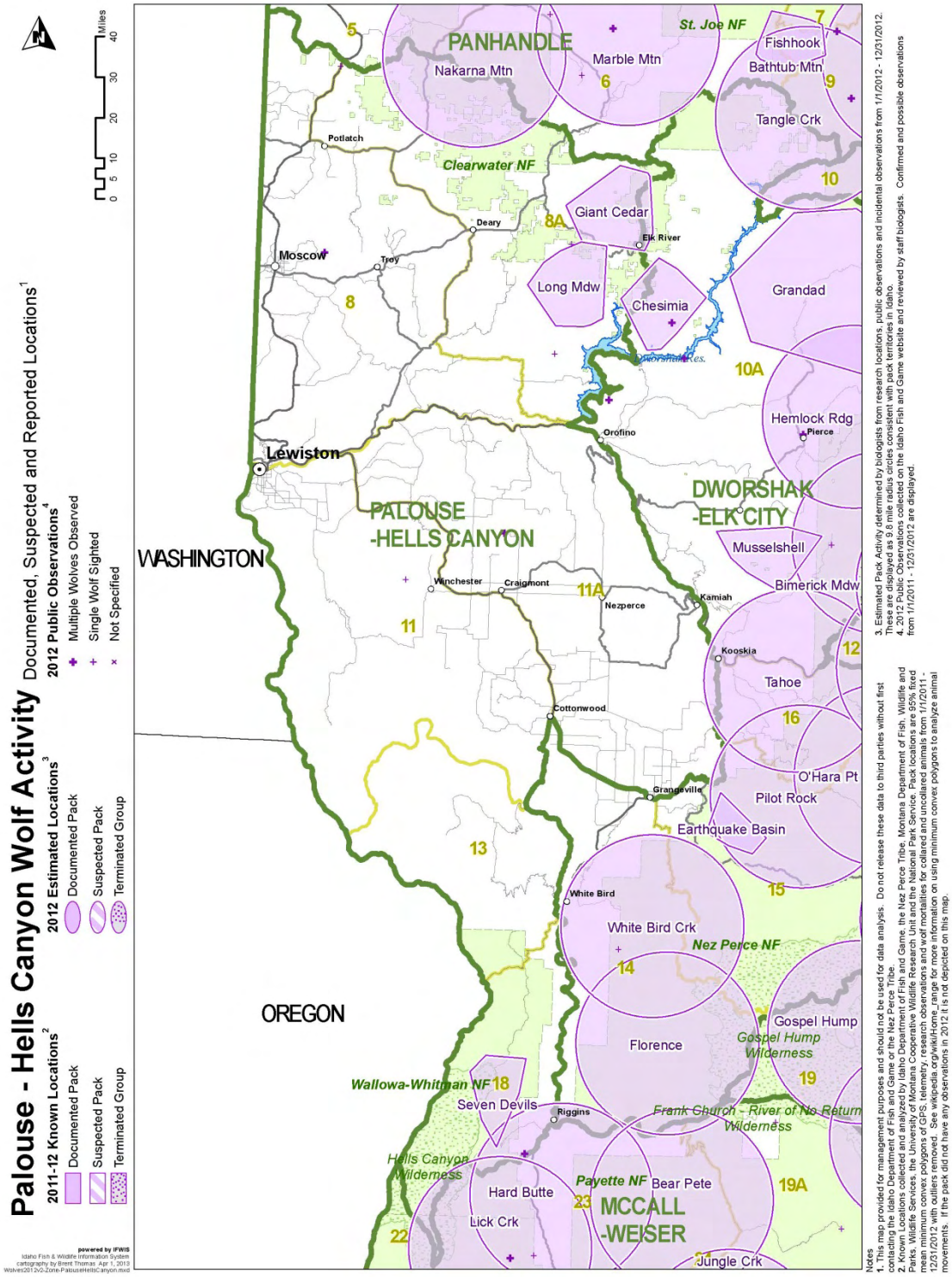

Figure 12. Distribution of documented and suspected wolf packs in the Palouse-Hells Canyon Wolf Management Zone, 2012.

Table 4. Minimum number of wolves detected, reproductive status, and dispersal for documented and suspected wolf packs and other documented wolf groups within the Palouse-Hells Canyon Wolf Management Zone, 2012.

		Reproductive status		
Wolf group[a]	Min. no. wolves detected[b]	Min. no. pups prod. (died)[c]	Breeding pair[d]	Known dispersal
Documented Pack				
Giant Cedar	5	4	YES	0
Long Meadow	2	3	NO	0
Seven Devils	2	2	NO	0
Subtotal	9	9		0
Suspected Pack				
Subtotal	0	0		0
Other Documented Group				
B468	1	0		0
Subtotal	1	0		0
WMZ Total	10	9		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.).

[b] Number of wolves detected by wolf program personnel from field observations throughout the year, monitoring flights conducted during winter 2012/2013 and documented mortalities occurring from 1/1 - 1/15/13; represents end of year (2012) data. Summing this column does not equate to number of wolves estimated to be present in the population.

[c] Number in parentheses indicates known pup mortality; pup mortalities tallied in the appropriate row/column in Documented Mortality in Table 5.

[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…".

Table 5. Documented wolf mortality and wolf-caused livestock depredations by Game Management Unit within the Palouse-Hells Canyon Wolf Management Zone, 2012.

	Documented mortality					Confirmed (probable) wolf-caused livestock losses			
GMU	Natural	Control[a]	Harvest	Other human[b]	Unk.[c]	Cattle	Sheep	Dogs	Other
8	0	0	0	0	0	0	0	0	0
8A	0	0	4	1	0	0	0	0	0
11	0	0	1	0	0	1(2)	0	0	0
11A	0	0	0	0	0	0	0	0	0
13	0	0	1	0	0	0	0	0	0
18	0	1	2	0	0	0(1)	23	0	0
WMZ Total	0	1	8	1	0	1(3)	23	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 remaining 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 and fir due to fire suppression during the past 40 years (IDFG 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 Summary

The Dworshak-Elk City Zone was occupied by 14 documented packs during 2012 (Figure 13, Table 6). Five of 11 reproductive packs qualified as breeding pairs (Table 6). The reproductive status of 3 packs was unknown. Documented mortalities (n = 72) included harvest (n = 69), control (agency removal and legal take; n = 2), and other human causes (n = 1; Table 7). Confirmed (n = 3) and probable (n = 2) wolf-caused cattle losses were attributed to 2 documented wolf packs and unknown wolves in this zone (Table 7). No domestic sheep or dog losses were recorded.

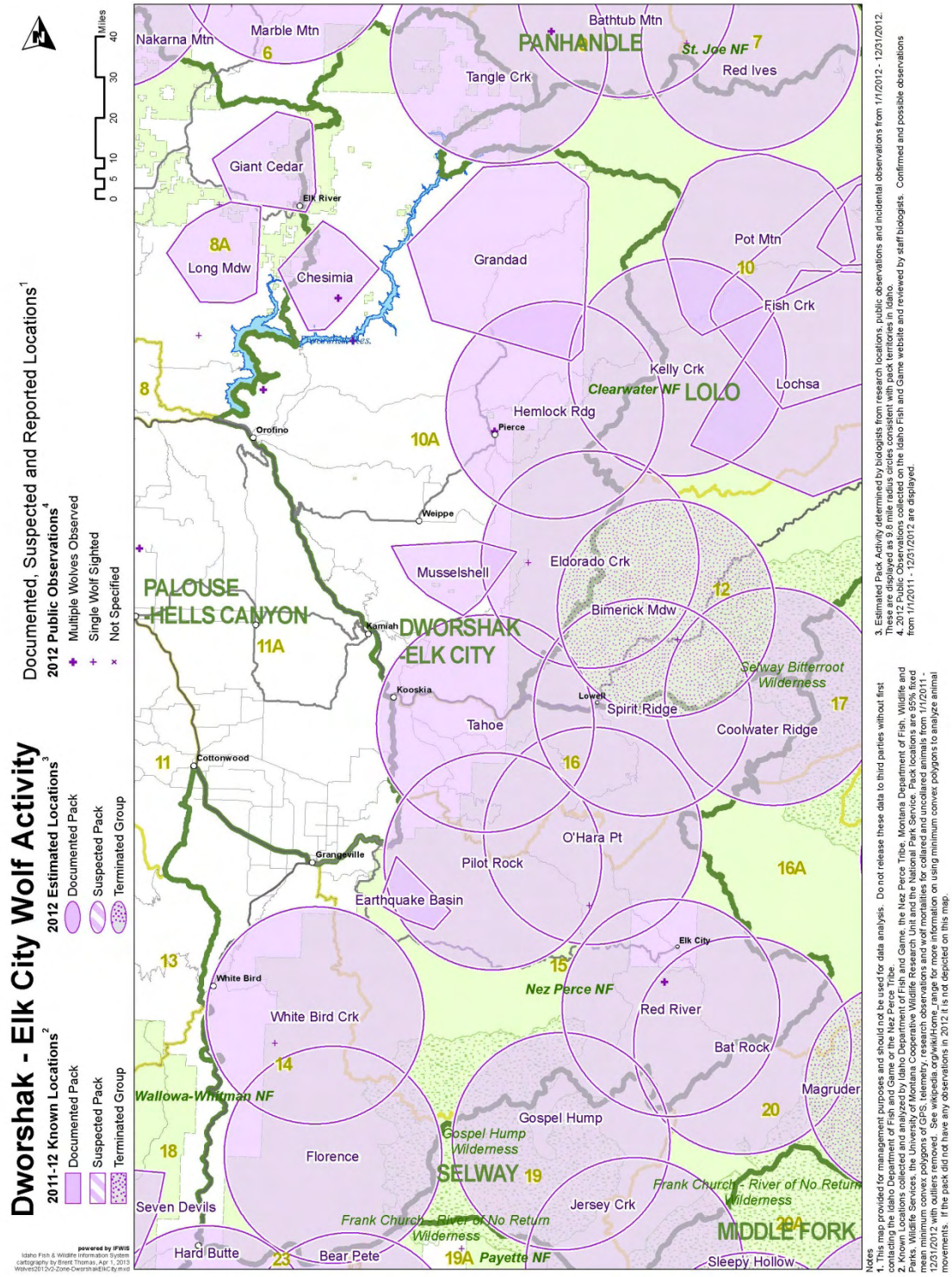

Figure 13. Distribution of documented and suspected wolf packs in the Dworshak-Elk City Wolf Management Zone, 2012.

Table 6. Minimum number of wolves detected, reproductive status, and dispersal for documented and suspected wolf packs and other documented wolf groups within the Dworshak-Elk City Wolf Management Zone, 2012.

Wolf group[a]	Min. no. wolves detected[b]	Reproductive status: Min. no. pups prod. (died)[c]	Reproductive status: Breeding pair[d]	Known dispersal
Documented Pack				
Bat Rock	4	2	YES	0
Chesimia	4	3	YES	1
Coolwater Ridge	4	2	YES	0
Earthquake Basin	4	5	YES	0
Eldorado Creek	?	1(1)	NO	0
Florence	?	1(1)	NO	0
Grandad	6	1	NO	0
Hemlock Ridge	?	1(1)	NO	0
Musselshell	6	3	YES	0
O'Hara Point	?	?	NO	0
Pilot Rock	?	1(1)	NO	0
Red River	?	1	NO	0
Tahoe	?	?	NO	0
White Bird Creek	?	?	NO	0
Subtotal	28	21(4)		1
Suspected Pack				
Subtotal	0	0		0
Other Documented Group				
B536	1	0		0
Subtotal	1	0		0
WMZ Total	29	21(4)		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.).

[b] Number of wolves detected by wolf program personnel from field observations throughout the year, monitoring flights conducted during winter 2012/2013 and documented mortalities occurring from 1/1 - 1/15/13; represents end of year (2012) data. Summing this column does not equate to number of wolves estimated to be present in the population.

[c] Number in parentheses indicates known pup mortality; pup mortalities tallied in the appropriate row/column in Documented Mortality in Table 7.

[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…".

Table 7. Documented wolf mortality and wolf-caused livestock depredations by Game Management Unit within the Dworshak-Elk City Wolf Management Zone, 2012.

	Documented mortality					Confirmed (probable) wolf-caused livestock losses			
GMU	Natural	Control[a]	Harvest	Other human[b]	Unk.[c]	Cattle	Sheep	Dogs	Other
10A	0	0	19	1	0	0	0	0	0
14	0	0	26	0	0	0	0	0	0
15	0	1	12	0	0	2(1)	0	0	0
16	0	1	12	0	0	1(1)	0	0	0
WMZ Total	0	2	69	1	0	3(2)	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. In 1964, most of the southern portion of GMU 12 was designated as part of the Selway-Bitterroot Wilderness (IDFG 2007).

Management Summary

The Lolo Zone was occupied by 4 documented resident packs and 3 documented resident border packs at the conclusion of 2012 (Figure 14, Table 8). One pack was no longer considered extant by the end of the year. Six border packs tallied for Montana resided adjacent to this zone. Two of 3 verified reproductive packs qualified as breeding pairs. The reproductive status of 4 documented packs was unknown (Table 8). Documented mortalities (n = 45) included harvest (n = 27), control (agency removal and legal take; n = 14), unknown (n = 2), natural (n = 1), and other human causes (n = 1; Table 9). There were no confirmed or probable wolf-caused losses to domestic livestock or dogs (Table 9).

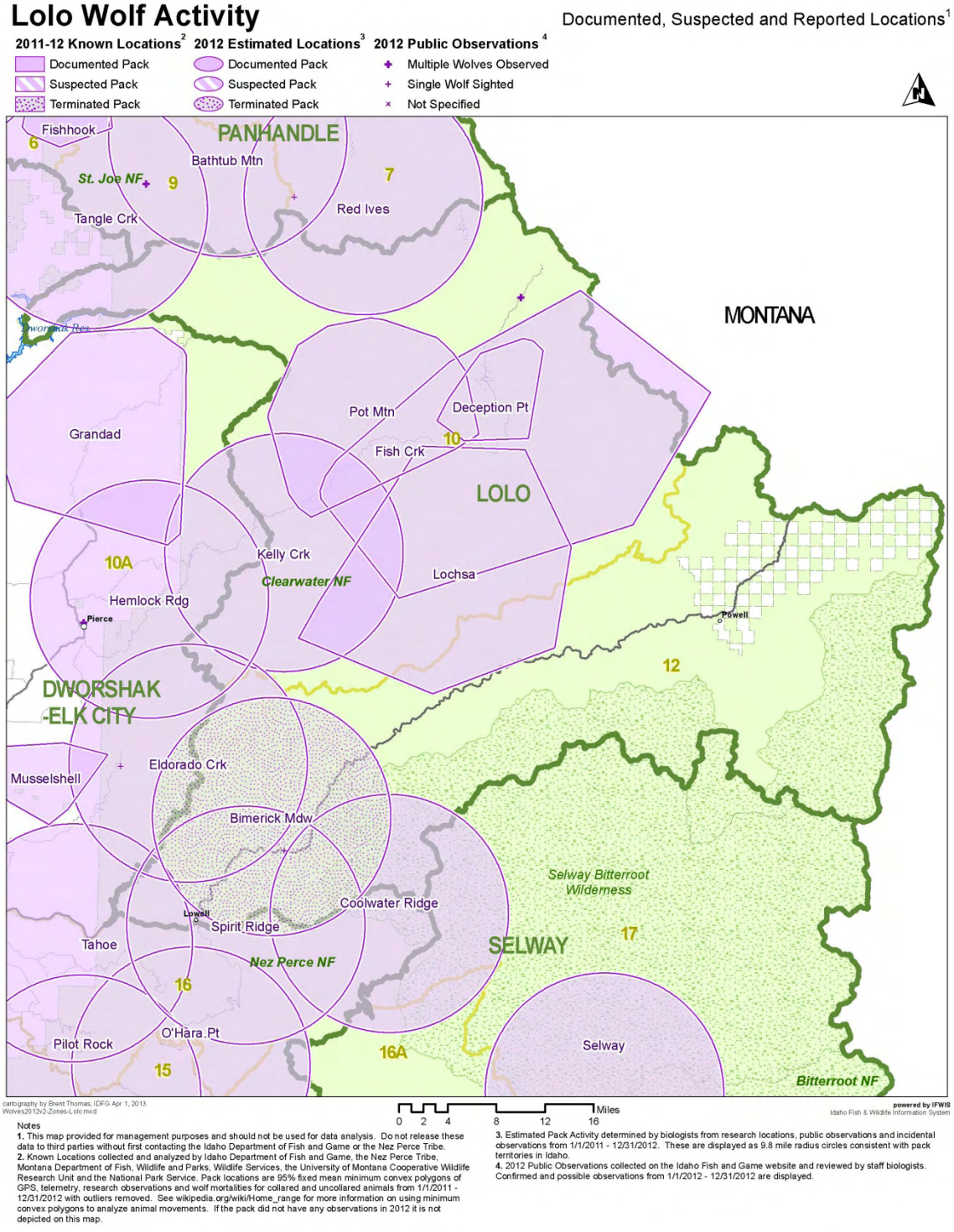

Figure 14. Distribution of documented and suspected wolf packs in the Lolo Wolf Management Zone, 2012.

Table 8. Minimum number of wolves detected, reproductive status, and dispersal for documented and suspected wolf packs and other documented wolf groups within the Lolo Wolf Management Zone, 2012.

Wolf group[a]	Min. no. wolves detected[b]	Reproductive status: Min. no. pups prod. (died)[c]	Reproductive status: Breeding pair[d]	Known dispersal
Documented Pack				
Big Hole (MT)[e]				
~~Bimerick Meadow~~	0	?	NO	1
Bitterroot Range (MT)[e]				
Cache Creek (MT)[e]				
Deception Point (ID)[e]	9	?	NO	0
Fish Creek (ID)[e]	6	?	NO	0
Gash Creek (MT)[e]				
Kelly Creek	8	4	YES	0
Lochsa	4	?	NO	0
One Horse (MT)[e]				
Pot Mountain	?	1	NO	0
Quartz Creek (MT)[e]				
Spirit Ridge	4	3	YES	0
Subtotal	31	8		1
Suspected Pack				
Subtotal	0	0		0
Other Documented Group				
B535	1	0		0
B557	1	0		0
Subtotal	2	0		0
WMZ Total	33	8		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.).

[b] Number of wolves detected by wolf program personnel from field observations throughout the year, monitoring flights conducted during winter 2012/2013 and documented mortalities occurring from 1/1 - 1/15/13; represents end of year (2012) data. Summing this column does not equate to number of wolves estimated to be present in the population.

[c] Number in parentheses indicates known pup mortality; pup mortalities tallied in the appropriate row/column in Documented Mortality in Table 9.

[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] Border packs officially tallied to (STATE); territory known/likely shared with ID. Data on these packs can be found in Rocky Mountain Wolf Recovery 2012 Annual Report or other source.

Table 9. Documented wolf mortality and wolf-caused livestock depredations by Game Management Unit within the Lolo Wolf Management Zone, 2012.

	Documented mortality					Confirmed (probable) wolf-caused livestock losses			
GMU	Natural	Control[a]	Harvest	Other human[b]	Unk.[c]	Cattle	Sheep	Dogs	Other
10	1	6	9	1	2	0	0	0	0
12	0	8	18	0	0	0	0	0	0
WMZ Total	1	14	27	1	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.

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, have encroached upon many low-elevation areas (IDFG 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 (IDFG 2007).

Management Summary

The Selway Zone was occupied by 4 documented packs in 2012, though one was no longer considered extant at years-end (Figure 15, Table 10). Two border packs tallied for Montana resided adjacent to this zone. Reproductive status was known for 1 pack, but it was not a breeding pair, and undetermined for the other 3 (Table 10). Legal harvest (n = 29) and unknown causes (n = 1) accounted for all known mortality (Table 11). Four pups were taken via harvest but could not be assigned to packs. This predominantly wilderness zone contained few domestic livestock and no losses were reported (Table 11).

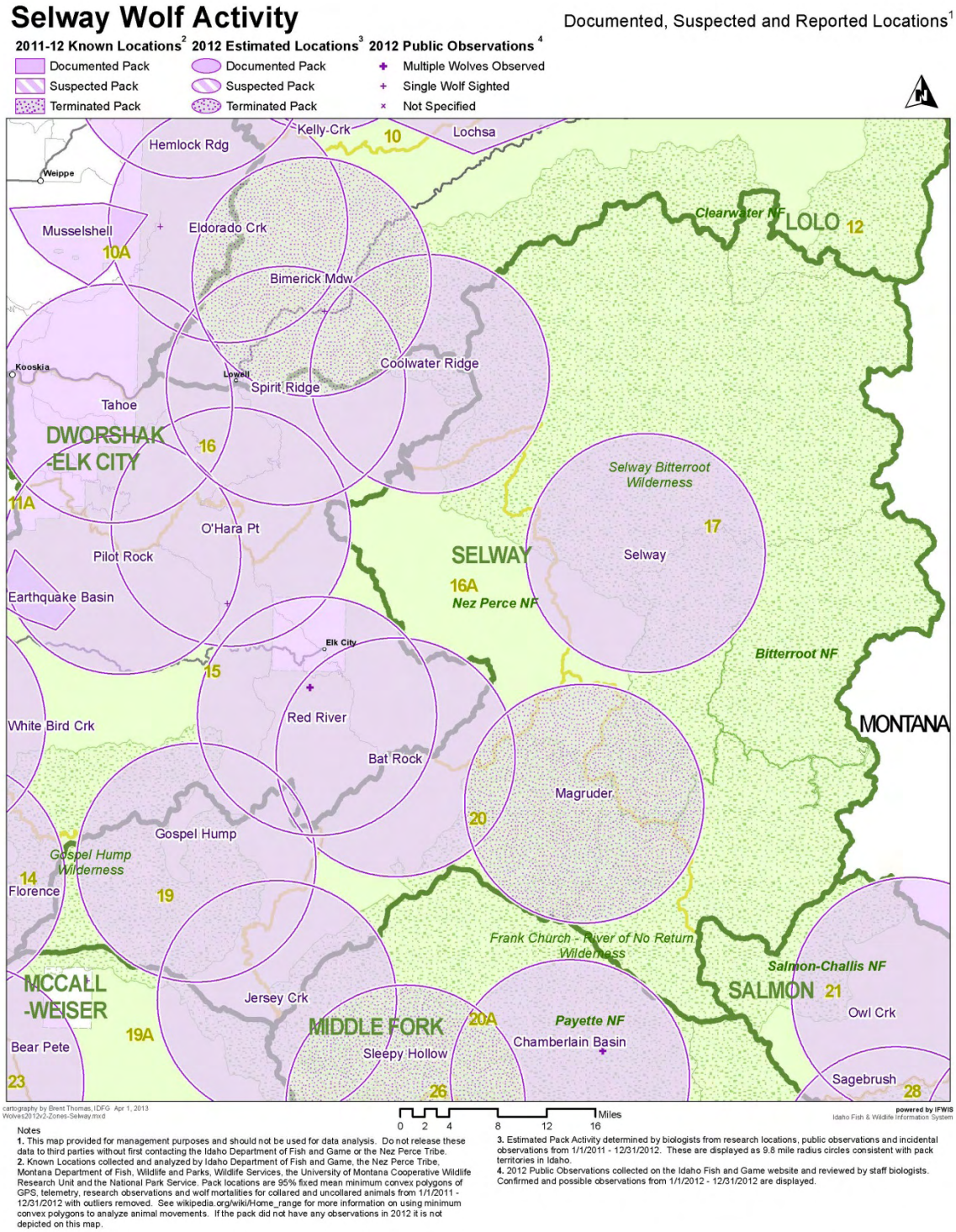

Figure 15. Distribution of documented and suspected wolf packs in the Selway Wolf Management Zone, 2012.

Table 10. Minimum number of wolves detected, reproductive status, and dispersal for documented and suspected wolf packs and other documented wolf groups within the Selway Wolf Management Zone, 2012.

Wolf group[a]	Min. no. wolves detected[b]	Reproductive status: Min. no. pups prod. (died)[c]	Reproductive status: Breeding pair[d]	Known dispersal
Documented Pack				
Gospel Hump	?	1(1)	NO	0
Jersey Creek	?	?	NO	0
~~Magruder~~	0	?	NO	0
Painted Rocks (MT)[e]				
Selway	?	?	NO	0
Watchtower (MT)[e]				
Unknown	0	3(3)		
Subtotal	0	4(4)		0
Suspected Pack				
Subtotal	0	0		0
Other Documented Group				
Subtotal	0	0		0
WMZ Total	0	4(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.).

[b] Number of wolves detected by wolf program personnel from field observations throughout the year, monitoring flights conducted during winter 2012/2013 and documented mortalities occurring from 1/1 - 1/15/13; represents end of year (2012) data. Summing this column does not equate to number of wolves estimated to be present in the population.

[c] Number in parentheses indicates known pup mortality; pup mortalities tallied in the appropriate row/column in Documented Mortality in Table 11.

[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] Border packs officially tallied to (STATE); territory known/likely shared with ID. Data on these packs can be found in Rocky Mountain Wolf Recovery 2012 Annual Report or other source.

Table 11. Documented wolf mortality and wolf-caused livestock depredations by Game Management Unit within the Selway Wolf Management Zone, 2012.

	Documented mortality					Confirmed (probable) wolf-caused livestock losses			
GMU	Natural	Control[a]	Harvest	Other human[b]	Unk.[c]	Cattle	Sheep	Dogs	Other
16A	0	0	1	0	0	0	0	0	0
17	0	0	18	0	1	0	0	0	0
19	0	0	6	0	0	0	0	0	0
20	0	0	4	0	0	0	0	0	0
WMZ Total	0	0	29	0	1	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 (IDFG 2007). Active timber harvest programs are anticipated to dramatically increase these road densities in the near future (IDFG 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 (IDFG 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 (IDFG 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 (IDFG 2007).

Management Summary

The McCall-Weiser Zone was occupied by 14 documented packs and 3 other documented groups during 2012 (Figure 16, Table 12). One pack listed as suspected in 2011was upgraded to a documented pack in 2012. One pack was considered no longer extant. Two of the other documented groups were no longer present at the end of the year. All 4 verified reproductive packs qualified as breeding pairs (Table 12). The reproductive status of 9 packs was undetermined and 1 pack was terminated prior to parturition. Documented mortalities (n = 43) included harvest (n = 27), control (agency removal and legal take; n = 12), other human (n = 3), and unknown causes (n = 1; Table 13). Confirmed (n = 12) and probable (n = 2) wolf-caused cattle losses were attributed to 3 packs and unknown wolves (Table 13). Confirmed (n = 38) and probable (n = 1) wolf-caused domestic sheep losses were attributed to 2 documented packs and unknown wolves (Table 13).

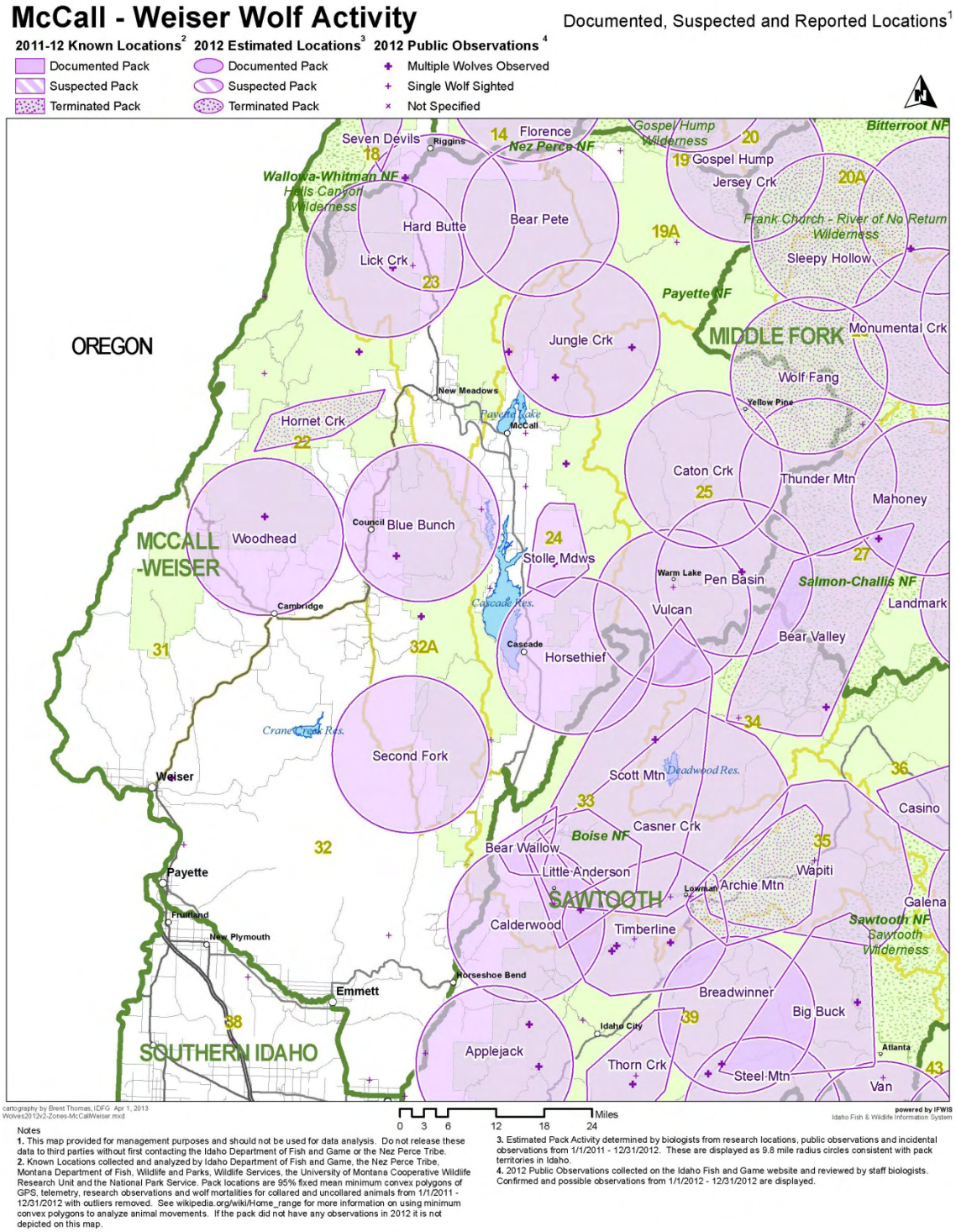

Figure 16. Distribution of documented and suspected wolf packs in the McCall-Weiser Wolf Management Zone, 2012.

Table 12. Minimum number of wolves detected, reproductive status, and dispersal for documented and suspected wolf packs and other documented wolf groups within the McCall-Weiser Wolf Management Zone, 2012.

Wolf group[a]	Min. no. wolves detected[b]	Reproductive status: Min. no. pups prod. (died)[c]	Reproductive status: Breeding pair[d]	Known dispersal
Documented Pack				
Bear Pete	?	2(2)	NO	0
Blue Bunch	?	?	NO	0
Caton Creek	?	?	NO	1
Hard Butte	?	?	NO	0
~~Hornet Creek~~	0	?	NO	0
Horsethief	?	?	NO	0
Jungle Creek	4	4	YES	0
Lick Creek	?	?	NO	0
Pen Basin	4	2	YES	0
Second Fork	?	?	NO	0
Stolle Meadows	?	?	NO	0
Thunder Mountain	4	2	YES	0
Vulcan	?	?	NO	0
Woodhead	4	4(1)	YES	0
Subtotal	16	14(3)		1
Suspected Pack				
Subtotal	0	0		0
Other Documented Group				
Horse Mountain	2	0		0
~~B478~~	0	0		0
~~OR-9~~	0	0		0
Subtotal	2	0		0
WMZ Total	18	14(3)		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.).

[b] Number of wolves detected by wolf program personnel from field observations throughout the year, monitoring flights conducted during winter 2012/2013 and documented mortalities occurring from 1/1 - 1/15/13; represents end of year (2012) data. Summing this column does not equate to number of wolves estimated to be present in the population.

[c] Number in parentheses indicates known pup mortality; pup mortalities tallied in the appropriate row/column in Documented Mortality in Table 13.

[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…".

Table 13. Documented wolf mortality and wolf-caused livestock depredations by Game Management Unit within the McCall-Weiser Wolf Management Zone, 2012.

	Documented mortality					Confirmed (probable) wolf-caused livestock losses			
GMU	Natural	Control[a]	Harvest	Other human[b]	Unk.[c]	Cattle	Sheep	Dogs	Other
19A	0	0	3	2	0	0	0	0	0
22	0	5	2	0	0	7(2)	0	0	0
23	0	3	8	0	0	1	8	0	0
24	0	4	3	0	0	4	30(1)	0	0
25	0	0	5	0	1	0	0	0	0
31	0	0	1	0	0	0	0	0	0
32	0	0	2	1	0	0	0	0	0
32A	0	0	3	0	0	0	0	0	0
WMZ Total	0	12	27	3	1	12(2)	38(1)	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.

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

Background

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 Wilderness. That portion within GMU 27 is primarily publicly-owned USFS lands within the Middle Fork of the Salmon River drainage. Large areas of the wilderness have burned creating a patchwork of vegetative seral stages (IDFG 2007).

Monitoring Summary

The Middle Fork Zone was occupied by 6 documented resident wolf packs at the end of 2012, and 2 packs were no longer considered extant at years-end (Figure 17, Table 14). Lack of radiocollared wolves in conjunction with the remote nature of this management zone precluded efforts to conduct reproductive surveys; reproduction was verified for only one pack based on the harvest of a single juvenile, and the pack did not satisfy breeding pair criteria (Table 14). No radiocollared wolves were known to have dispersed in 2012. Documented mortalities (n = 19) were attributed to harvest (n = 18) and other human causes (n = 1; Table 15). This predominantly wilderness zone contains few domestic livestock and no losses were reported (Table 15).

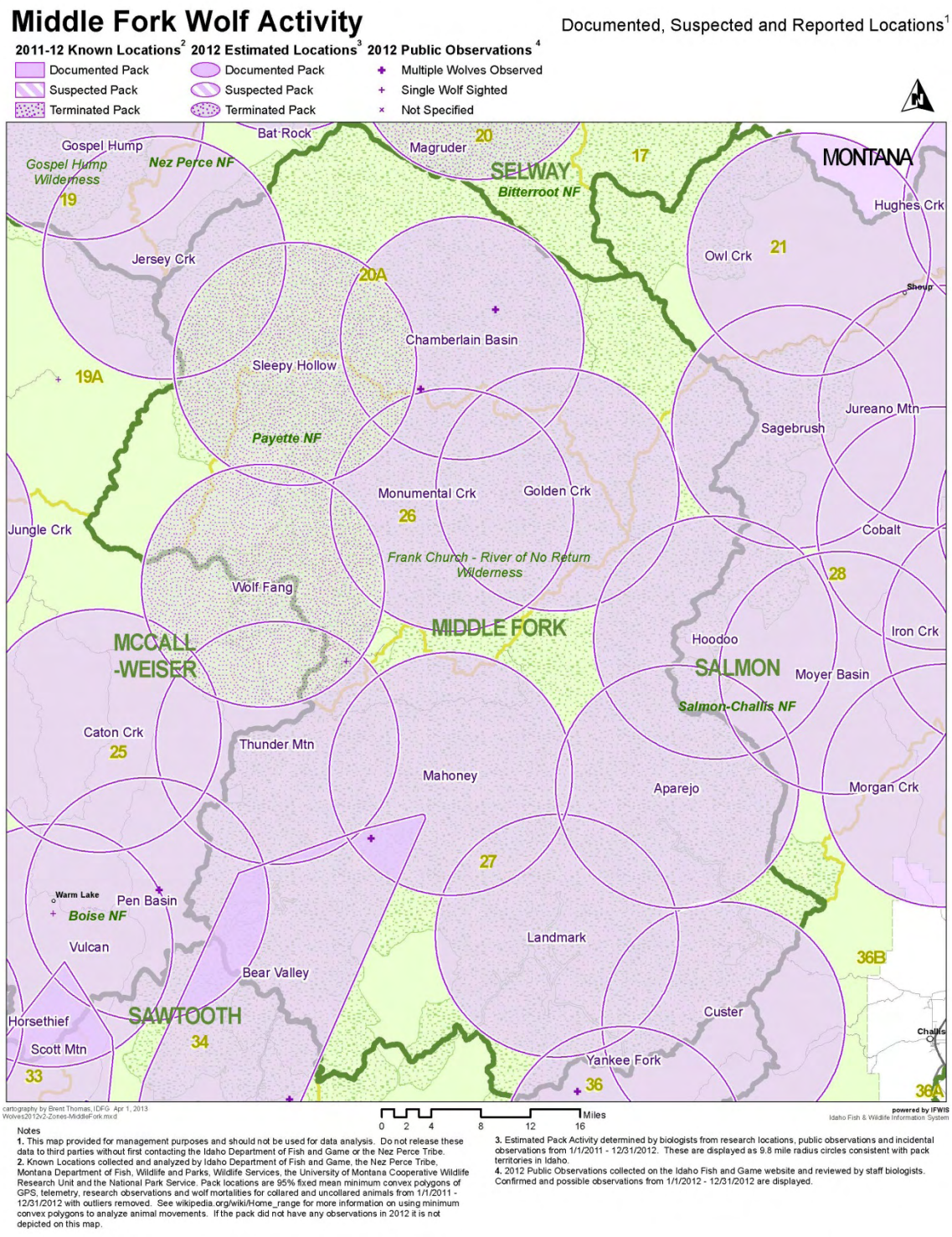

Figure 17. Distribution of documented and suspected wolf packs in the Middle Fork Wolf Management Zone, 2012.

Table 14. Minimum number of wolves detected, reproductive status, and dispersal for documented and suspected wolf packs and other documented wolf groups within the Middle Fork Wolf Management Zone, 2012.

Wolf group[a]	Min. no. wolves detected[b]	Reproductive status: Min. no. pups prod. (died)[c]	Reproductive status: Breeding pair[d]	Known dispersal
Documented Pack				
Aparejo	?	?	NO	0
Chamberlain Basin	?	?	NO	0
Golden Creek	?	?	NO	0
Landmark	?	?	NO	0
Mahoney	?	1(1)	NO	0
Monumental Creek	?	?	NO	0
~~Sleepy Hollow~~	0	?	NO	0
~~Wolf Fang~~	0	?	NO	0
Subtotal	0	1(1)		0
Suspected Pack				
Subtotal	0	0		0
Other Documented Group				
B534	2	0		0
Subtotal	2	0		0
WMZ Total	2	1(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.).

[b] Number of wolves detected by wolf program personnel from field observations throughout the year, monitoring flights conducted during winter 2012/2013 and documented mortalities occurring from 1/1 - 1/15/13; represents end of year (2012) data. Summing this column does not equate to number of wolves estimated to be present in the population.

[c] Number in parentheses indicates known pup mortality; pup mortalities tallied in the appropriate row/column in Documented Mortality in Table 15.

[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…".

Table 15. Documented wolf mortality and wolf-caused livestock depredations by Game Management Unit within the Middle Fork Wolf Management Zone, 2012.

	Documented mortality					Confirmed (probable) wolf-caused livestock losses			
GMU	Natural	Control[a]	Harvest	Other human[b]	Unk.[c]	Cattle	Sheep	Dogs	Other
20A	0	0	4	1	0	0	0	0	0
26	0	0	1	0	0	0	0	0	0
27	0	0	13	0	0	0	0	0	0
WMZ Total	0	0	18	1	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.

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 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 (BLM), or State ownership. Cattle ranching, livestock grazing, mining, timber harvesting, and recreation are the dominant human uses in this region.

Monitoring Summary

The Salmon Zone was occupied by 10 documented resident packs and 2 documented resident border packs during 2012 (Figure 18, Table 16). Three border packs attributed to Montana were presumed to spend some time within Idaho. Five documented resident and documented resident border packs produced litters, 4 of which qualified as breeding pairs (Table 16); one litter was confirmed via the harvest of a juvenile wolf. The reproductive status of the remaining 7 packs was unknown. Two radiocollared wolves dispersed in 2012. Documented mortalities within the Salmon Zone (n = 37; Table 17) were attributed to harvest (n = 34), control (agency removal and legal take; n = 2), and other human causes (n = 1). Confirmed (n = 8) wolf-caused cattle losses were attributed to 5 packs (Table 17).

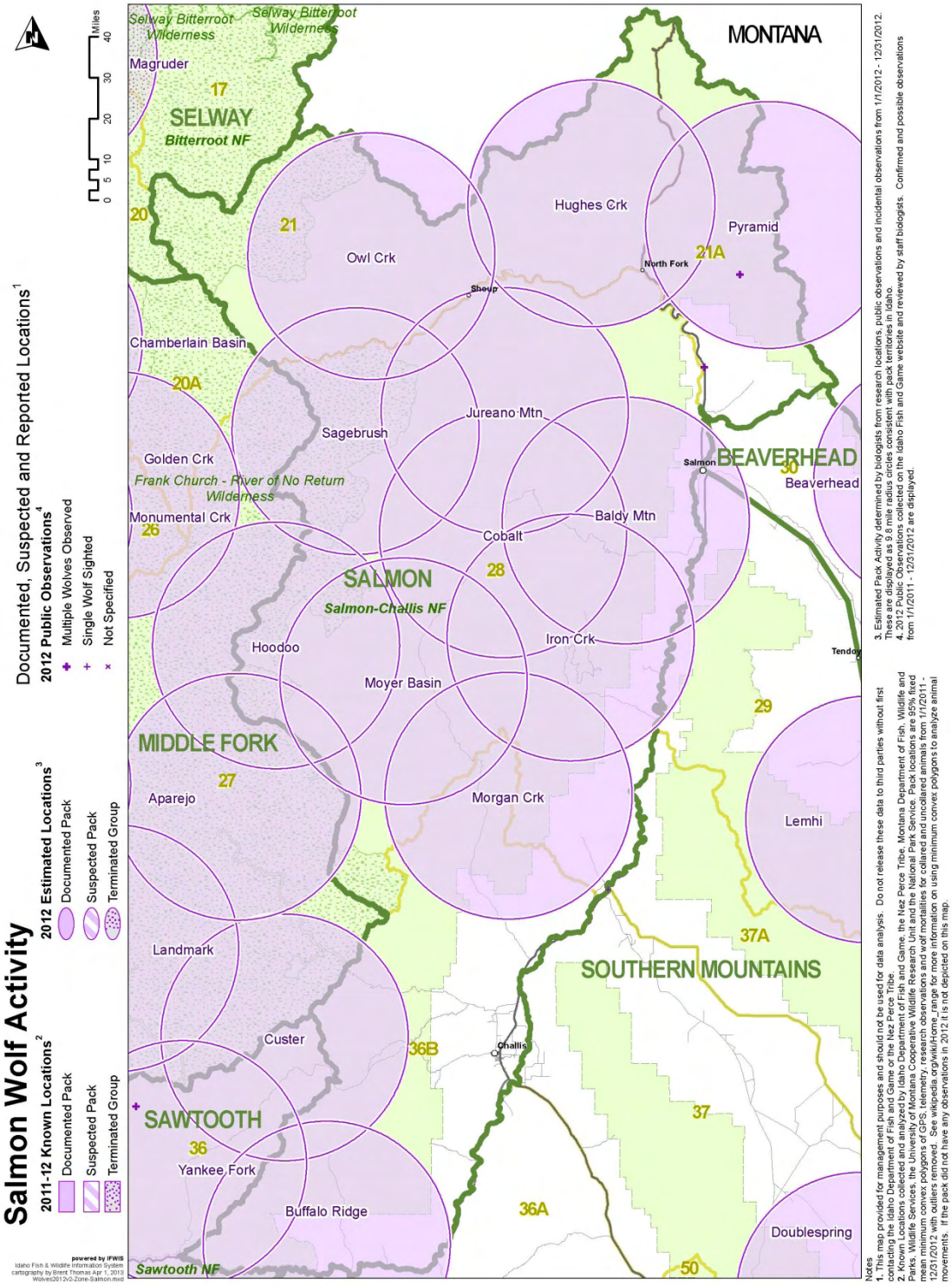

Figure 18. Distribution of documented and suspected wolf packs in the Salmon Wolf Management Zone, 2012.

Table 16. Minimum number of wolves detected, reproductive status, and dispersal for documented and suspected wolf packs and other documented wolf groups within the Salmon Wolf Management Zone, 2012.

Wolf group[a]	Min. no. wolves detected[b]	Reproductive status: Min. no. pups prod. (died)[c]	Reproductive status: Breeding pair[d]	Known dispersal
Documented Pack				
Alta (MT)[e]				
Baldy Mountain	?	?	NO	0
Buffalo Ridge	?	?	NO	0
Cobalt	?	?	NO	0
Hoodoo	4	3	YES	1
Hughes Creek (ID)[e]	8	4(1)	YES	0
Iron Creek	?	?	NO	0
Jureano Mountain	4	5(1)	YES	0
Morgan Creek	?	?	NO	0
Moyer Basin	8	3	YES	1
Owl Creek	?	?	NO	0
Pyramid (ID)[e]	?	1(1)	NO	0
Sagebrush	?	?	NO	0
Sula (MT)[e]				
Trail Creek (MT)[e]				
Subtotal	24	16(3)		2
Suspected Pack				
Subtotal				
Other Documented Group				
B582	1	0		0
B586	2	0		0
Subtotal	3	0		0
WMZ Total	27	16(3)		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.).

[b] Number of wolves detected by wolf program personnel from field observations throughout the year, monitoring flights conducted during winter 2012/2013 and documented mortalities occurring from 1/1 - 1/15/13; represents end of year (2012) data. Summing this column does not equate to number of wolves estimated to be present in the population.

[c] Number in parentheses indicates known pup mortality; pup mortalities tallied in the appropriate row/column in Documented Mortality in Table 17.

[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] Border packs officially tallied to (STATE); territory known/likely shared with ID. Data on these packs can be found in Rocky Mountain Wolf Recovery 2012 Annual Report or other source.

Table 17. Documented wolf mortality and wolf-caused livestock depredations by Game Management Unit within the Salmon Wolf Management Zone, 2012.

	Documented mortality					Confirmed (probable) wolf-caused livestock losses			
GMU	Natural	Control[a]	Harvest	Other human[b]	Unk.[c]	Cattle	Sheep	Dogs	Other
21	0	0	6	0	0	0	0	0	0
21A	0	0	12	0	0	0	0	0	0
28	0	2	11	1	0	7	0	0	0
36B	0	0	5	0	0	1	0	0	0
WMZ Total	0	2	34	1	0	8	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.

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

Background

The Sawtooth Zone is comprised of 2 elk management zones: Sawtooth and Boise River. 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 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 (IDFG 2007).

Monitoring Summary

The Sawtooth Zone was occupied by 20 documented resident packs and 1 other documented group in 2012 (Figure 19, Table 18). One pack was considered no longer extant at years-end. Three new resident packs were documented in 2012. One suspected pack was upgraded to documented based on depredations and harvests in 2012. One pack previously considered no longer extant was reinstated based on sightings and control actions. Fifteen packs were known to have produced litters, and 5 were counted as breeding pairs (Table 18). The reproductive status of 5 packs was unknown. Seven wolves dispersed from the packs from which they were originally captured. Documented mortalities (n = 52) included harvest (n = 28), control (agency removal and legal take; n = 19), other human (n = 4), and unknown causes (n = 1; Table 19). Confirmed (n = 4) and probable (n = 3) wolf-caused cattle losses were attributed to 2 packs and unknown wolf groups (Table 19). Confirmed (n = 73) and probable (n = 3) wolf-caused domestic sheep losses were attributed to 6 packs and unknown wolf groups (Table 19); losses attributed to 1 Sawtooth Zone pack occurred in the Southern Mountains Zone.

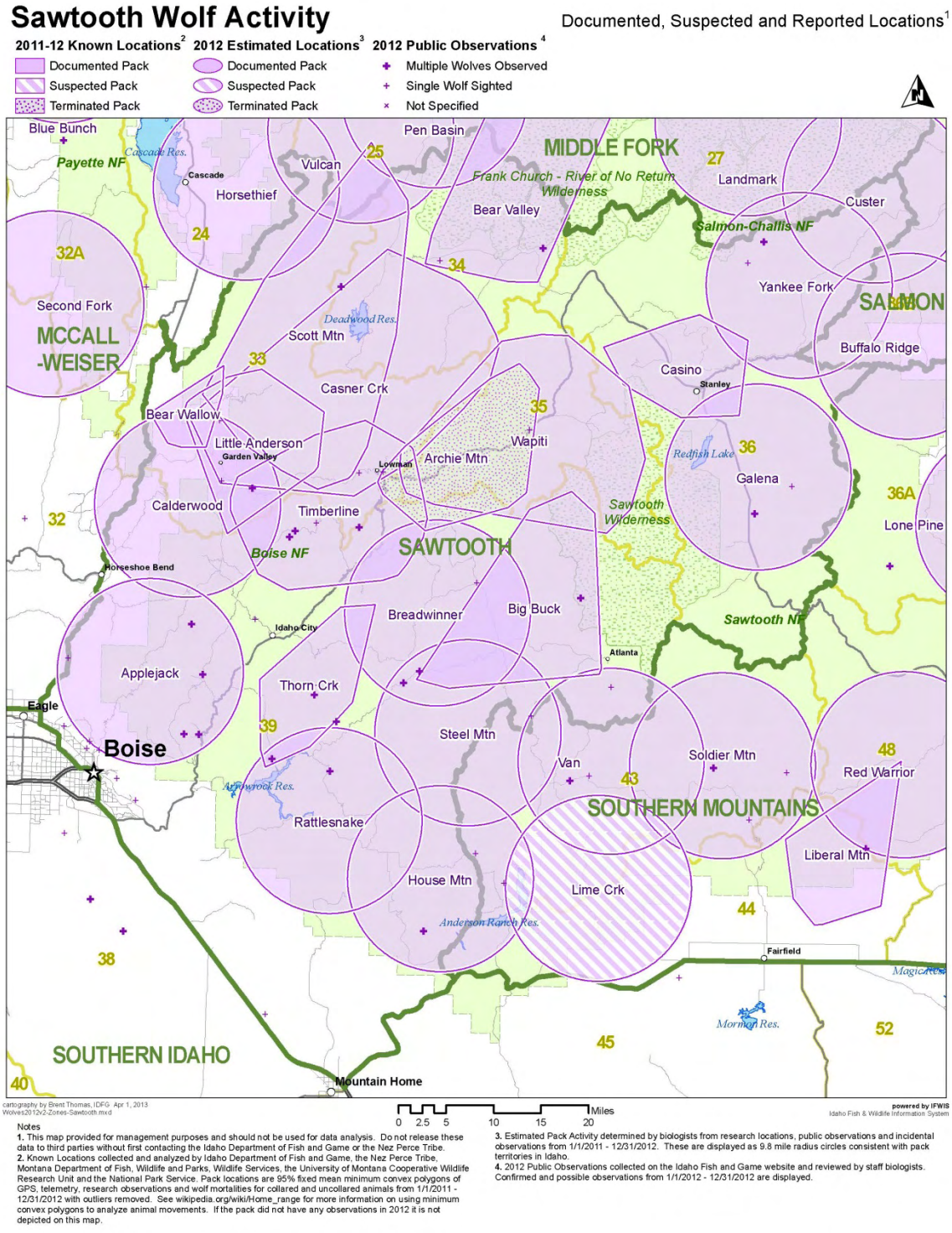

Figure 19. Distribution of documented and suspected wolf packs in the Sawtooth Wolf Management Zone, 2012.

Table 18. Minimum number of wolves detected, reproductive status, and dispersal for documented and suspected wolf packs and other documented wolf groups within the Sawtooth Wolf Management Zone, 2012.

Wolf group[a]	Min. no. wolves detected[b]	Reproductive status: Min. no. pups prod. (died)[c]	Reproductive status: Breeding pair[d]	Known dispersal
Documented Pack				
Applejack	5	?	NO	0
~~Archie Mountain~~	0	?	NO	1
Bear Valley	3	3	NO	3
Bear Wallow	?	1	NO	0
Big Buck	5	1(1)	NO	1
Breadwinner	5	4(4)	NO	0
Calderwood	?	2(1)	NO	0
Casino	6	2	YES	0
Casner Creek	5	3	YES	0
Custer	?	1	NO	0
Galena	?	1(1)	NO	0
House Mountain	4	?	NO	0
Little Anderson	5	7(1)	YES	0
Rattlesnake	5	?	NO	0
Scott Mountain	4	1	NO	0
Steel Mountain	6	?	NO	0
Thorn Creek	7	6	YES	0
Timberline	4	4(3)	NO	1
Wapiti	4	3	YES	1
Yankee Fork	?	1	NO	0
Subtotal	68	40(11)		7
Suspected Pack				
Subtotal	0	0		0
Other Documented Group				
OR16/B594	2	0		0
Subtotal	2	0		0
WMZ Total	70	40(11)		7

[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.).

[b] Number of wolves detected by wolf program personnel from field observations throughout the year, monitoring flights conducted during winter 2012/2013 and documented mortalities occurring from 1/1 - 1/15/13; represents end of year (2012) data. Summing this column does not equate to number of wolves estimated to be present in the population.

[c] Number in parentheses indicates known pup mortality; pup mortalities tallied in the appropriate row/column in Documented Mortality in Table 19.

[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…".

Table 19. Documented wolf mortality and wolf-caused livestock depredations by Game Management Unit within the Sawtooth Wolf Management Zone, 2012.

	Documented mortality					Confirmed (probable) wolf-caused livestock losses			
GMU	Natural	Control[a]	Harvest	Other human[b]	Unk.[c]	Cattle	Sheep	Dogs	Other
33	0	7	9	1	0	0	7	0	0
34	0	0	1	0	0	0	0	0	0
35	0	0	2	2	0	0	0	0	0
36	0	5	4	1	0	3(1)	0	0	0
39	0	7	12	0	1	1(2)	66(3)	0	0
WMZ Total	0	19	28	4	1	4(3)	73(3)	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.

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 zones: The Smoky Mountains, Pioneer, Lemhi, and Beaverhead. 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 in 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 include 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, BLM) within this zone. Cattle ranching, livestock grazing, and recreation were the dominant activities on the landscape within the Southern Mountains Zone.

Monitoring Summary

The Southern Mountains Zone was occupied by 10 documented resident packs and 1 suspected pack in 2012 (Figure 20, Table 20). Two new resident packs were documented in 2012, and 2 packs previously considered no longer extant were reinstated based on sightings, depredations, or evidence of reproduction. One pack that had likely been in existence since 2008 was retroactively added to the Southern Mountains Zone. Three documented resident packs produced litters, one of which qualified as a breeding pair in 2012 (Table 20). No radiocollared wolves were known to have dispersed in 2012. Documented mortalities (n = 20) included harvest (n = 10), control (agency removal and legal take; n = 9), and natural causes (n = 1; Table 21). Confirmed (n = 34) and probable (n = 4) wolf-caused cattle losses were attributed to 6 packs and unknown wolves (Table 21). Confirmed (n = 79) and probable (n = 21) wolf-caused domestic sheep losses were attributed to 7 packs (including 1 pack from an adjacent zone; Table 21). One dog was confirmed killed.

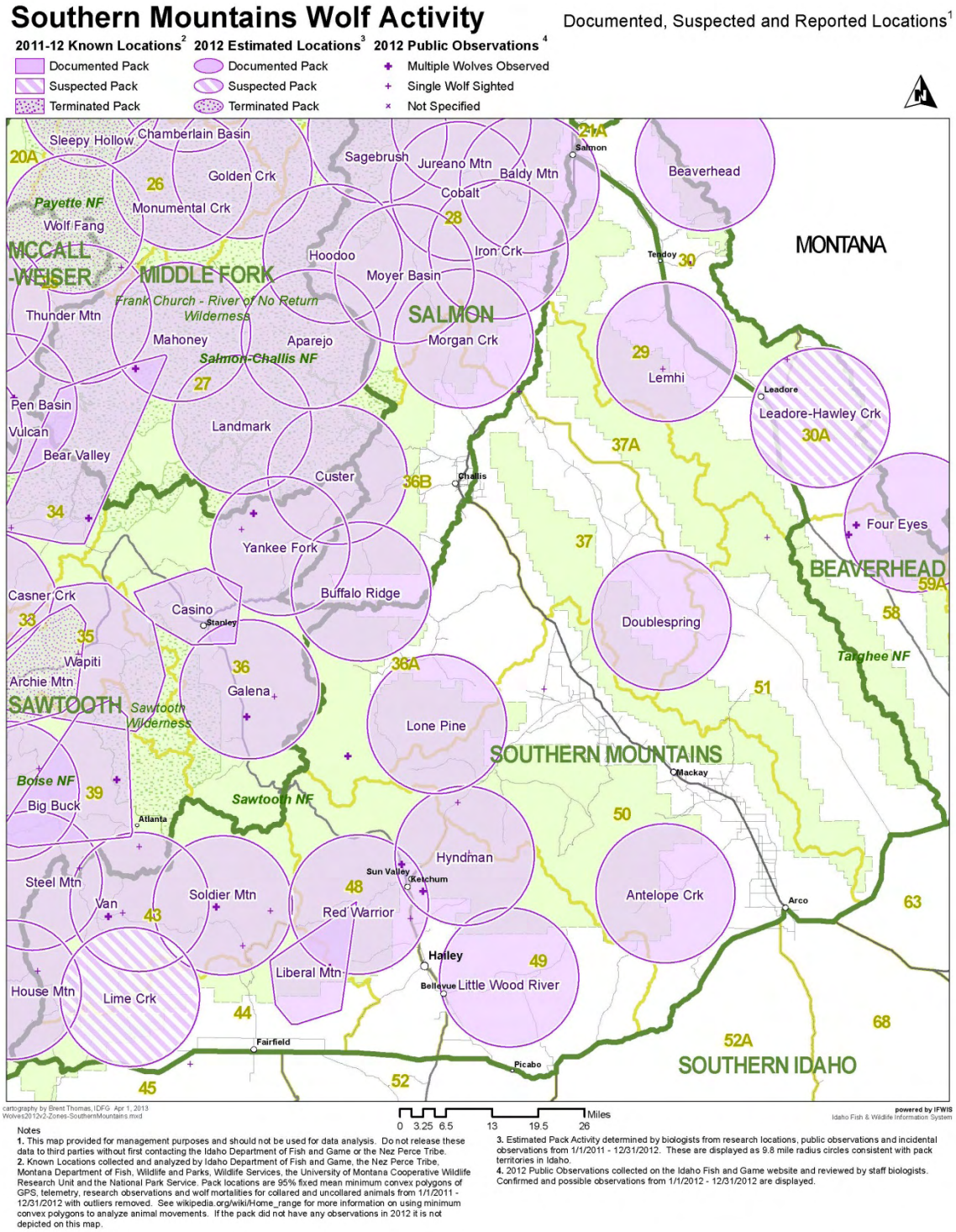

Figure 20. Distribution of documented and suspected wolf packs in the Southern Mountains Wolf Management Zone, 2012.

Table 20. Minimum number of wolves detected, reproductive status, and dispersal for documented and suspected wolf packs and other documented wolf groups within the Southern Mountains Wolf Management Zone, 2012.

Wolf group[a]	Min. no. wolves detected[b]	Reproductive status: Min. no. pups prod. (died)[c]	Reproductive status: Breeding pair[d]	Known dispersal
Documented Pack				
Antelope Creek	3	?	NO	0
Doublespring	3	?	NO	0
Hyndman	4	5(1)	YES	0
Lemhi	?	?	NO	0
Liberal Mountain	3	?	NO	0
Little Wood River	?	?	NO	0
Lone Pine	4	?	NO	0
Red Warrior	?	2(1)	NO	0
Soldier Mountain	?	2(1)	NO	0
Van	3	?	NO	0
Subtotal	20	9(3)		0
Suspected Pack				
Lime Creek	?	0		0
Subtotal	0	0		0
Other Documented Group				
Subtotal	0	0		0
WMZ Total	20	9(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.).

[b] Number of wolves detected by wolf program personnel from field observations throughout the year, monitoring flights conducted during winter 2012/2013 and documented mortalities occurring from 1/1 - 1/15/13; represents end of year (2012) data. Summing this column does not equate to number of wolves estimated to be present in the population.

[c] Number in parentheses indicates known pup mortality; pup mortalities tallied in the appropriate row/column in Documented Mortality in Table 21.

[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…".

Table 21. Documented wolf mortality and wolf-caused livestock depredations by Game Management Unit within the Southern Mountains Wolf Management Zone, 2012.

	Documented mortality					Confirmed (probable) wolf-caused livestock losses			
GMU	Natural	Control[a]	Harvest	Other human[b]	Unk.[c]	Cattle	Sheep	Dogs	Other
29	0	1	0	0	0	5(1)	0(1)	0	0
36A	0	1	1	0	0	6	0	0	0
37	0	0	0	0	0	2	0	0	0
37A	0	0	0	0	0	7	0	0	0
43	0	2	2	0	0	0	19(19)	1	0
44	0	3	1	0	0	1	7(1)	0	0
48	1	0	2	0	0	0	4	0	0
49	0	2	1	0	0	0(1)	49	0	0
50	0	0	2	0	0	9(1)	0	0	0
51	0	0	1	0	0	4(1)	0	0	0
WMZ Total	1	9	10	0	0	34(4)	79(21)	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.

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

Background

The Beaverhead Zone is dominated by the Beaverhead Mountains, a sub-range of the Bitterroot Mountains. The Beaverhead Mountains are characterized by steep, rocky peaks intersected by numerous steep-gradient creek drainages. The northern portion of this zone is bounded to the south by the Lemhi River and its relatively flat, productive pastureland transitioning to lodgepole forest and steep, mountainous terrain. The central and southern portions of the Beaverhead Zone are comprised of high elevation shrub-steppe habitat transitioning to lodgepole forest and mountainous terrain. Land ownership is primarily Federal (BLM and USFS; 85%). Dominant land use activities include livestock production and agriculture.

Monitoring Summary

The Beaverhead Zone was occupied by 3 documented resident border packs and 1 suspected pack during 2012 (Figure 21, Table 22). One resident border pack previously counted by Montana was reassigned to Idaho based on evidence that the pack denned in Idaho. Two documented resident border packs produced litters, one of which met breeding pair criteria (Table 22). The reproductive status of 1 documented resident border pack was unknown. No radiocollared wolves were known to have dispersed in 2012. Documented mortalities (n = 9) resulted from control (agency removal and legal take; n = 6), harvest (n = 2), and other human causes (n = 1; Table 23). Confirmed (n = 8) and probable (n = 1) wolf-caused cattle losses were attributed to 1 pack and unknown wolves (Table 23). Confirmed (n = 70) wolf-caused domestic sheep losses were attributed to 1 pack (Table 23).

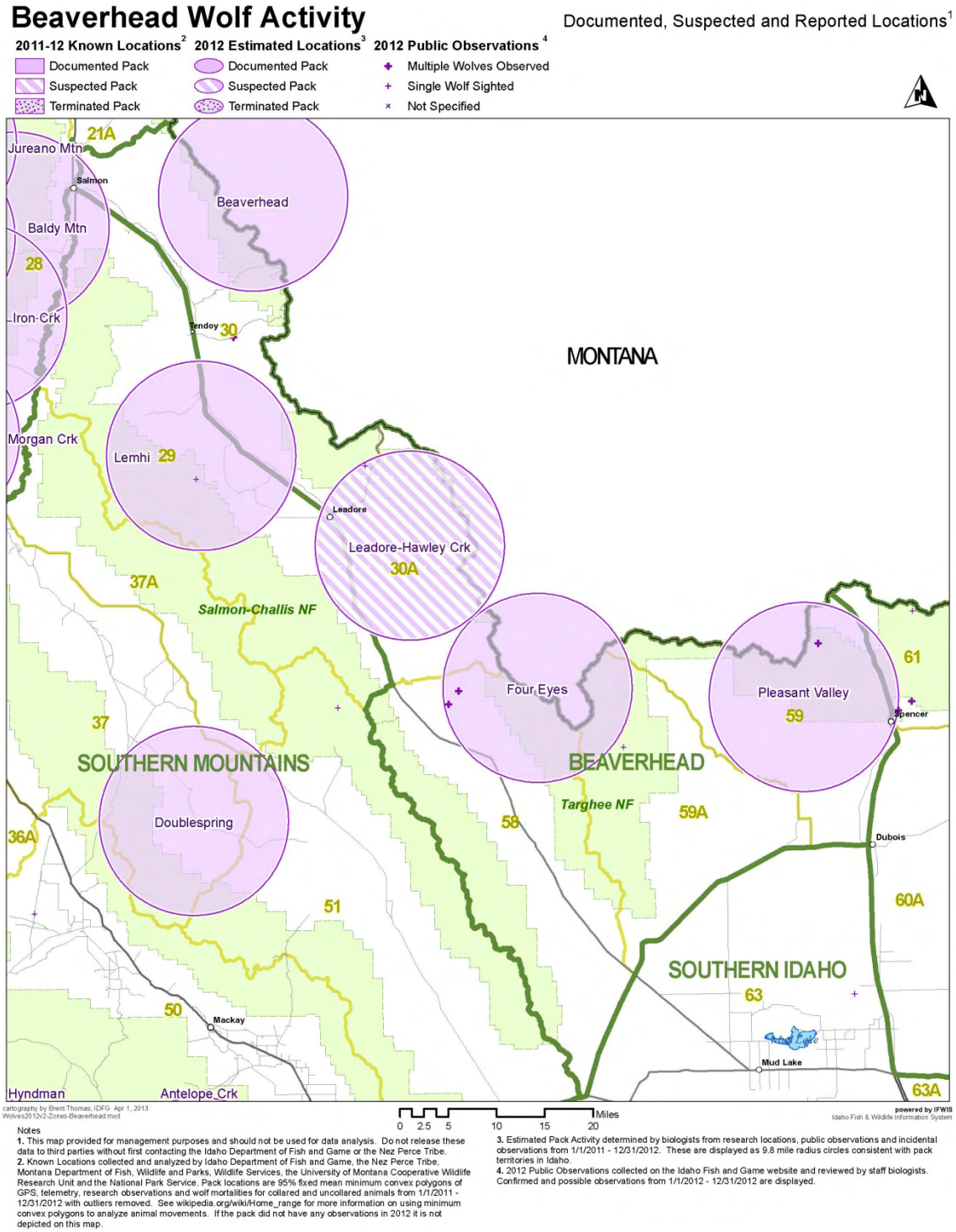

Figure 21. Distribution of documented and suspected wolf packs in the Beaverhead Wolf Management Zone, 2012.

Table 22. Minimum number of wolves detected, reproductive status, and dispersal for documented and suspected wolf packs and other documented wolf groups within the Beaverhead Wolf Management Zone, 2012.

Wolf group[a]	Min. no. wolves detected[b]	Reproductive status: Min. no. pups prod. (died)[c]	Reproductive status: Breeding pair[d]	Known dispersal
Documented Pack				
Beaverhead (ID)[e]	?	?	NO	0
Four Eyes (ID)[e]	?	2(2)	NO	0
Pleasant Valley (ID)[e]	4	2	YES	0
Subtotal	4	4(2)		0
Suspected Pack				
Leadore-Hawley Creek	?	0		0
Subtotal	0	0		0
Other Documented Group				
Subtotal	0	0		0
WMZ Total	4	4(2)		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.).

[b] Number of wolves detected by wolf program personnel from field observations throughout the year, monitoring flights conducted during winter 2012/2013 and documented mortalities occurring from 1/1 - 1/15/13; represents end of year (2012) data. Summing this column does not equate to number of wolves estimated to be present in the population.

[c] Number in parentheses indicates known pup mortality; pup mortalities tallied in the appropriate row/column in Documented Mortality in Table 23.

[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] Border packs officially tallied to (STATE); territory known/likely shared with ID. Data on these packs can be found in Rocky Mountain Wolf Recovery 2012 Annual Report or other source.

Table 23. Documented wolf mortality and wolf-caused livestock depredations by Game Management Unit within the Beaverhead Wolf Management Zone, 2012.

GMU	Documented mortality: Natural	Control[a]	Harvest	Other human[b]	Unk.[c]	Confirmed (probable) wolf-caused livestock losses: Cattle	Sheep	Dogs	Other
30	0	1	0	1	0	2	0	0	0
30A	0	0	1	0	0	4(1)	0	0	0
58	0	4	1	0	0	2	0	0	0
59	0	1	0	0	0	0	70	0	0
59A	0	0	0	0	0	0	0	0	0
WMZ Total	0	6	2	1	0	8(1)	70	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.

ISLAND PARK WOLF MANAGEMENT ZONE
(GMUs 60, 60A, 61, 62, 62A, 64, 65, 67)

Background

Topography in the Island Park Zone 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) 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 one half being under federal/state ownership. Dominant land use activities include timber harvest, livestock production, and agriculture.

Monitoring Summary

The Island Park Zone was occupied by 2 documented resident packs, 5 documented resident border packs, and 1 other documented group during 2012 (Figure 22, Table 24). One border pack previously attributed to Montana denned in Idaho and was counted towards the Island Park Zone in 2012. One suspected pack in 2011 was upgraded to a resident border pack in 2012. Two border packs attributed to Wyoming were presumed to spend some time within Idaho. One other documented group of 2 wolves was verified by agency personnel in 2012. Five documented resident and documented resident border packs produced litters, 4 of which qualified as breeding pairs for 2012 (Table 24). The reproductive status for 2 packs was unknown. No radiocollared wolves were known to have dispersed in 2012. Documented mortalities (n = 16) resulted from harvest (n = 10), control (agency removal and legal take; n = 4) and other human causes (n = 2; Table 25). Confirmed (n = 2) and probable (n = 3) wolf-caused cattle losses were attributed to 3 packs, including 1 pack from the Beaverhead Zone, and unknown wolves (Table 25). Confirmed (n = 29) wolf-caused domestic sheep losses were attributed to 2 packs and unknown wolves (Table 25).

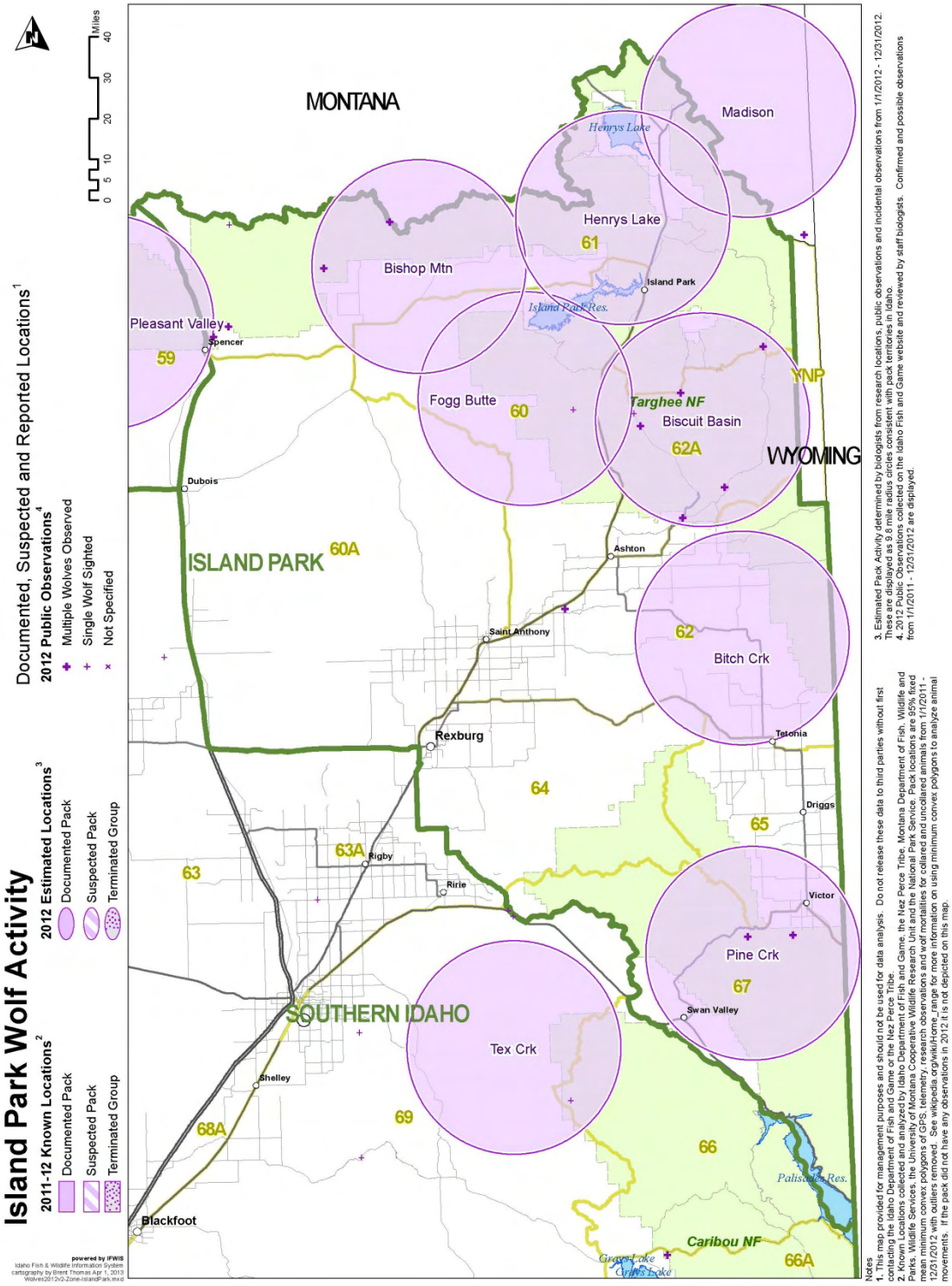

Figure 22. Distribution of documented and suspected wolf packs in the Island Park Wolf Management Zone, 2012.

Table 24. Minimum number of wolves detected, reproductive status, and dispersal for documented and suspected wolf packs and other documented wolf groups within the Island Park Wolf Management Zone, 2012.

Wolf group[a]	Min. no. wolves detected[b]	Reproductive status: Min. no. pups prod. (died)[c]	Reproductive status: Breeding pair[d]	Known dispersal
Documented Pack				
Bechler (WY)[e]				
Biscuit Basin	9	3	YES	0
Bishop Mountain (ID)[e]	5	1	NO	0
Bitch Creek (ID)[e]	6	2	YES	0
Chagrin River (WY)[e]				
Fogg Butte	7	?	NO	0
Henrys Lake (ID)[e]	10	3	YES	0
Madison (ID)[e]	9	4(1)	YES	0
Pine Creek (ID)[e]	6	?	NO	0
Subtotal	52	13(1)		0
Suspected Pack				
Subtotal	0	0		0
Other Documented Group				
Camas Creek				
Subtotal	2	0		0
WMZ Total	54	13(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.).

[b] Number of wolves detected by wolf program personnel from field observations throughout the year, monitoring flights conducted during winter 2012/2013 and documented mortalities occurring from 1/1 - 1/15/13; represents end of year (2012) data. Summing this column does not equate to number of wolves estimated to be present in the population.

[c] Number in parentheses indicates known pup mortality; pup mortalities tallied in the appropriate row/column in Documented Mortality in Table 25.

[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] Border packs officially tallied to (STATE); territory known/likely shared with ID. Data on these packs can be found in Rocky Mountain Wolf Recovery 2012 Annual Report or other source.

Table 25. Documented wolf mortality and wolf-caused livestock depredations by Game Management Unit within the Island Park Wolf Management Zone, 2012.

	Documented mortality					Confirmed (probable) wolf-caused livestock losses			
GMU	Natural	Control[a]	Harvest	Other human[b]	Unk.[c]	Cattle	Sheep	Dogs	Other
60	0	3	1	0	0	1	0	0	0
60A	0	0	0	0	0	0	0	0	0
61	0	0	5	1	0	1(3)	26	0	0
62	0	1	2	1	0	0	1	0	0
62A	0	0	0	0	0	0	0	0	0
64	0	0	0	0	0	0	0	0	0
65	0	0	0	0	0	0	0	0	0
67	0	0	2	0	0	0	2	0	0
WMZ Total	0	4	10	2	0	2(3)	29	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.

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, 73, 73A, 74, 75, 76, 77, 78)

Background

The Southern Idaho Zone includes the Snake River Plain, which comprises an area of heavy agricultural use with a metropolitan corridor along U.S. Interstate 84. 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 could be high. The zone also contains some protected areas including Craters of the Moon National Monument and the Idaho National Laboratory. The climate tends to be hot and dry during summer and cold and wet during winter. Temperatures range from mild in the west to more severe in the east.

Monitoring Summary

During 2012, 1 newly documented pack occupied the Southern Idaho Zone (Figure 23, Table 26). This pack was known to have produced pups but did not qualify as a breeding pair. Documented mortalities (n = 2) included harvest (n = 1) and control (agency removal and legal take, n = 1; Table 27). Confirmed (n = 1) and probable (n = 1) wolf-caused cattle losses were attributed to unknown wolf groups (Table 27). No domestic sheep or domestic dog losses were documented in this zone in 2012.

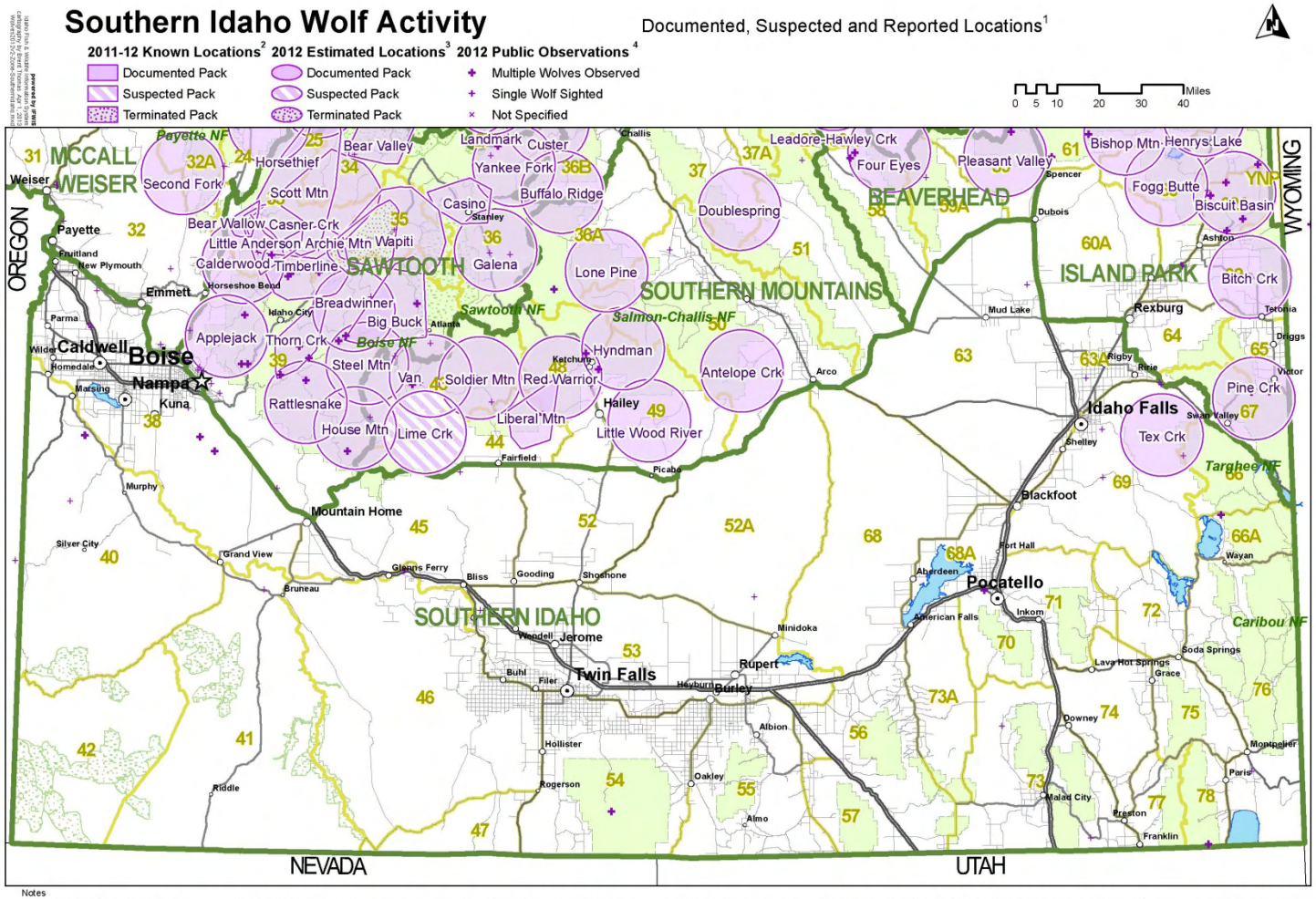

Figure 23. Distribution of documented and suspected wolf packs in the Southern Idaho Wolf Management Zone, 2012.

Table 26. Minimum number of wolves detected, reproductive status, and dispersal for documented and suspected wolf packs and other documented wolf groups within the Southern Idaho Wolf Management Zone, 2012.

Wolf group[a]	Min. no. wolves detected[b]	Reproductive status: Min. no. pups prod. (died)[c]	Reproductive status: Breeding pair[d]	Known dispersal
Documented Pack				
Tex Creek	1	2	NO	0
Subtotal	1	2		0
Suspected Pack				
Subtotal	0	0		0
Other Documented Group				
Subtotal	0	0		0
WMZ Total	1	2		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.).

[b] Number of wolves detected by wolf program personnel from field observations throughout the year, monitoring flights conducted during winter 2012/2013 and documented mortalities occurring from 1/1 - 1/15/13; represents end of year (2012) data. Summing this column does not equate to number of wolves estimated to be present in the population.

[c] Number in parentheses indicates known pup mortality; pup mortalities tallied in the appropriate row/column in Documented Mortality in Table 27.

[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…".

Table 27. Documented wolf mortality and wolf-caused livestock depredations by Game Management Unit within the Southern Idaho Wolf Management Zone, 2012.

	Documented mortality					Confirmed (probable) wolf-caused livestock losses			
GMU	Natural	Control[a]	Harvest	Other human[b]	Unk.[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	1	0	0	0	1(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	0	0	0	0	0	0	0
66	0	0	1	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
73	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
WMZ Total	0	1	1	0	0	1(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.

LITERATURE CITED

Ausband, D., M. Mitchell, A. Mynsberge, C. Mack, J. Stenglein, and L. Waits. 2009. Developing wolf population monitoring techniques: A cooperative research effort between University of Montana, Nez Perce Tribe, University of Idaho, Idaho Department of Fish and Game, Montana Fish, Wildlife and Parks, and U.S. Fish and Wildlife Service. TWG Funding Final Report. University of Montana, Missoula.

Clark, P. E., D. E. Johnson, M. A. Kniep, B. Huttash, A. Wood, M. Johnson, C. McGillivan, and K. Titus. 2006. An advanced, low-cost, GPS-based animal tracking system. Rangeland Ecology and Management 59:334-340.

Clark, P. E., K. D. Wilson, L. L. Larson, J. Williams, N. Rimbey, M. D. Johnson, K. Crane, S. K. Ndzieze, and D. E. Johnson. 2009. Evaluation of wolf impacts on cattle productivity and behavior. In: Oregon Beef Council Report. BEEF010:1-12. Oregon State University, Beef Cattle Sciences, Corvallis.

Clark, P. E., J. Williams, J. Chigbrow, L. L. Larson, M. D. Johnson, N. Rimbey, K. Crane, S. K. Ndzeidze, and D. E. Johnson. 2010. Spatial-temporal interactions of beef cattle and wolves on a western Idaho rangeland. In: Oregon Beef Council Report. BEEF051:1-10. Oregon State University, Beef Cattle Sciences, Corvallis.

Idaho Department of Fish and Game. 2007. Elk PR report, Project W-170-R-31. Progress Report. Idaho Department of Fish and Game, Boise.

Idaho Legislative Wolf Oversight Committee. 2002. Idaho wolf conservation and management plan as modified by the 56th Idaho Legislature, second regular session.

Mech, D. L., and L. Boitani. 2003. Wolves: behavior, ecology, and conservation. The University of Chicago Press, Illinois.

USDA-APHIS Wildlife Services. 2012. Unpublished data.

U.S. Fish and Wildlife Service. 2010. Endangered and threatened wildlife and plants; reinstatement of protections for the gray wolf in the northern Rocky Mountains in compliance with a court order. Federal Register 75(206):65574-65579.

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. Since then, we have used an estimation technique that is more applicable to a larger population that is more difficult to monitor. In 2006, we began using an estimation technique that has been peer reviewed by the University of Idaho and northern Rocky Mountain wolf managers. This technique relies on our documented packs, mean or median pack size (mean or median of the sample pool of packs where counts were considered complete), number of wolves documented in small groups not considered packs, and a percentage of the population presumed to be lone wolves. We have modified this technique slightly since first adoption. In recent years we have used a total count of wolves for those packs where we have a high degree of confidence that we observed all pack members and have applied the mean or median pack size to the remaining packs with incomplete counts. We previously used the mean pack size for all packs. We use the statistical mean when number of packs with complete year-end counts is ≥20, otherwise median pack size is applied to the remaining packs. Mathematically this technique is represented as:

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

where;

 # Wolves counted in documented packs with complete count = 89

 # Documented packs lacking complete count = 101
the number of documented packs that were extant at the end of 2012 was 117, complete pack size counts were obtained on 16 of them, leaving 101 packs with counts that were presumed incomplete,

Median pack size = 5.0
median pack size was calculated using only those packs (n = 16) for which biologists presumed complete pack counts were obtained in 2012,

 # Wolves in other documented wolf groups of size ≥2 = 13
"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 middle 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, page 170).

Using this technique, the 2012 wolf population estimate is 683 wolves and represents a decrease of ~11% over 2011's corrected wolf population estimate of 768 wolves:

((89 + (101 * 5.0) + (13)) * 1.125
(89 + (505) + (13)) * 1.125
(607) * 1.125 = 683

APPENDIX B. CONTACTS FOR IDAHO WOLF MANAGEMENT

Idaho Fish and Game Headquarters Wildlife Bureau: (208) 334-2920
For information about wolves in Idaho and IDFG involvement or to report wolf sightings:

http://fishandgame.idaho.gov/public/wildlife/wolves/

https://fishandgame.idaho.gov/ifwis/observations/wolf/

The Nez Perce Tribe's Idaho Wolf Recovery Program:
Telephone: (208) 634-1061
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

To report livestock depredations within Idaho:
USDA/APHIS/Wildlife Services (866) 4-USDAWS
State Director, Boise, ID (208) 373-1630

To report information regarding the illegal killing of a wolf or a dead wolf within Idaho:
Citizens Against Poaching (24hr) 1-800-632-5999
or any IDFG Office

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

Idaho State Office: (877) 661-1908