2011 IDAHO WOLF MONITORING PROGRESS REPORT

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EXECUTIVE SUMMARY

During January 1995 and January 1996, the U.S. Fish and Wildlife Service 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 April 2009, the U.S. Fish and Wildlife Service delisted gray wolves in the northern Rocky Mountain Distinct Population Segment, excluding Wyoming, from the protections of the Endangered Species Act (ESA), and returned wolf management authorities to those states. Following a Federal District Court decision, wolves were relisted under the ESA on August 5, 2010, when Judge Molloy vacated the rule that delisted wolves in Montana and Idaho and returned them to protections of the ESA. 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 the northern Rocky Mountains of the United States, except in Wyoming, and wolf management responsibility returned to the State of Idaho on May 5, 2011.

The Idaho Legislature adopted the ***Idaho Wolf Conservation and Management Plan*** (2002 Wolf Plan)(Idaho Legislative Wolf Oversight Committee 2002) in March 2002. The 2002 Wolf Plan is the governing document that guides wolf management and monitoring. The State of Idaho and Nez Perce Tribe worked cooperatively in 2011 to monitor wolves in Idaho through a Memorandum of Agreement signed in 2005. Following delisting in May 2011, the Idaho Fish and Game Commission authorized Idaho's second wolf hunting season and a wolf trapping season in portions of the state.

Wolves range throughout Idaho from the Canadian border south to Interstate 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 2011, 213 wolf observations were reported on IDFG's website wolf observation report form.

Biologists documented 101 Idaho packs alive at the end of 2011. The year-end population was estimated at 746 wolves (Appendix A). In addition, there were 24 documented border packs counted by Montana, Wyoming, and Washington that had established territories overlapping the Idaho boundary. Of 63 Idaho packs known to have reproduced, 40 qualified as breeding pairs at the end of the year. These reproductive packs produced a minimum of 177 pups. Biologists confirmed the deaths of 296 wolves during 2011. Of known wolf mortalities, harvest accounted for 200 deaths. Agency control and legal landowner take in response to wolf-livestock depredation, and IDFG-authorized wolf removals, accounted for 63 deaths. Eighteen wolf mortalities were attributed to other human causes (including illegal take). The cause of 12 wolf mortalities could not be determined, and 3 wolves died of natural causes.

During 2011, 71 cattle, 121 sheep, 3 horses, 6 dogs, and 2 domestic bison were classified by USDA APHIS Wildlife Services as confirmed wolf kills. Nineteen (19) cattle, 26 sheep, 1 horse, and 1 dog were considered probable wolf kills.

In this annual progress report, we summarize wolf activity and related monitoring in Idaho during 2011.

ACKNOWLEDGEMENTS

Wolf monitoring in Idaho is a cooperative effort between the State of Idaho, Nez Perce Tribe (NPT), USDA Wildlife Services (WS), and the U.S. Fish and Wildlife Service (USFWS). The NPT's Executive Committee and Wildlife Program Director Keith Lawrence provided support and input. We would like to acknowledge and thank the Governor's Office of Species Conservation director, Nate Fisher, and Dustin Miller for assistance and oversight. Todd Grimm, George Graves, and all WS field personnel helped resolve wolf-livestock conflicts. USFWS personnel Ed Bangs (retired), Brian Kelly, Hilary Cooley, Gary Burton, Robert Romero, Scott Kabasa, Scott Winkler, and Dirk Hoy provided support and assistance in wolf monitoring responsibilities. Idaho Department of Fish and Game (IDFG) leadership personnel Virgil Moore, Jim Unsworth, Sharon Kiefer, Jeff Gould, Brad Compton, and Cal Groen, provided support, input and direction. 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 while wolves were delisted. The advice of State of Idaho Deputy Attorney General Kathleen Trever was invaluable to wolf management and monitoring.

We would like to thank IDFG personnel Bryan Aber, Regan Berkley, Toby Boudreau, Ben Cadwallader, Crystal Christensen, Dave Collins, Michelle Commons-Kemner, Jay Crenshaw, Linn French, Lee Garwood, Jim Hayden, Clay Hickey, Debbie Hribik, Mike Keckler, Michael Lucid, Daryl Meints, Rob Morris, Steve Nadeau, Niels Nokkentved, Jim Pagel, Jake Powell, Laura Wolf, Steve Roberts, Lacy Robinson, Tom Schrempp, David Spicer, Eric Stansbury, Ben Studer, Lucas Swanson, Brent Thomas, Jack Whitman, and Rick Williamson for contributions to wolf monitoring efforts beyond their normal duties. These individuals contributed immensely by participating in pups counts, telemetry flights, capture efforts, tracking harvest, recording and mapping observation reports and movement data, tracking depredation information, and conducting public outreach. Dr. Mark Drew provided training, advice, and information. IDFG Wildlife Research staff Trent Brown, Jake Gelineau, Mark Hurley, Brian Kertson, John Nelson, Katie Oelrich, George Pauley, and Pete Zager shared wolf monitoring data and provided critical collaborative assistance both in the field and in the office. We appreciate the support and assistance of Jon Heggen, Greg Wooten, and Chris Wright of the Bureau of Enforcement for help with rule development and administration, and thank the many Conservation Officers throughout the state for their contributions and dedicated service.

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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.

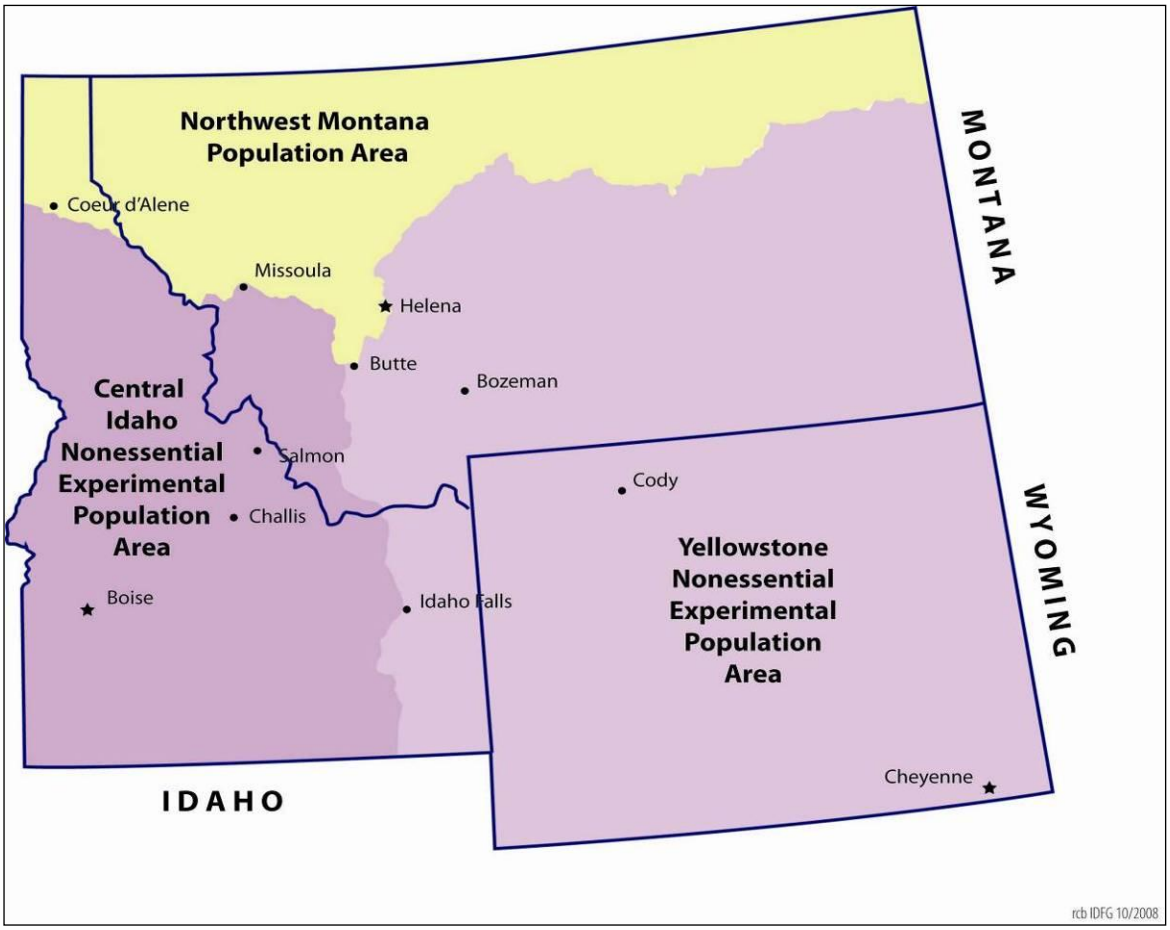

Figure 1. Recovery areas established by the U.S. Fish and Wildlife Service to restore gray wolf populations in the northern Rocky Mountains of Idaho, Montana, and Wyoming.

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 and effectively nullified the NRM DPS (USFWS 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://www.fishandgame.idaho.gov/cms/wildlife/wolves/timeline.cfm.

Wolf monitoring and management activities have been reported by Wolf Management Zone since 2008. The Idaho Department of Fish and Game (IDFG) split the Southern Mountains Wolf Management Zone into 2 zones in 2011: the Southern Mountains and the Beaverhead Wolf Management zones. The Upper Snake Wolf Management Zone was renamed the Island Park Wolf Management Zone (Figure 3). In this annual progress report, we summarize wolf population status information and monitoring activities carried out during 2011 and present information organized into 13 Wolf Management Zones.

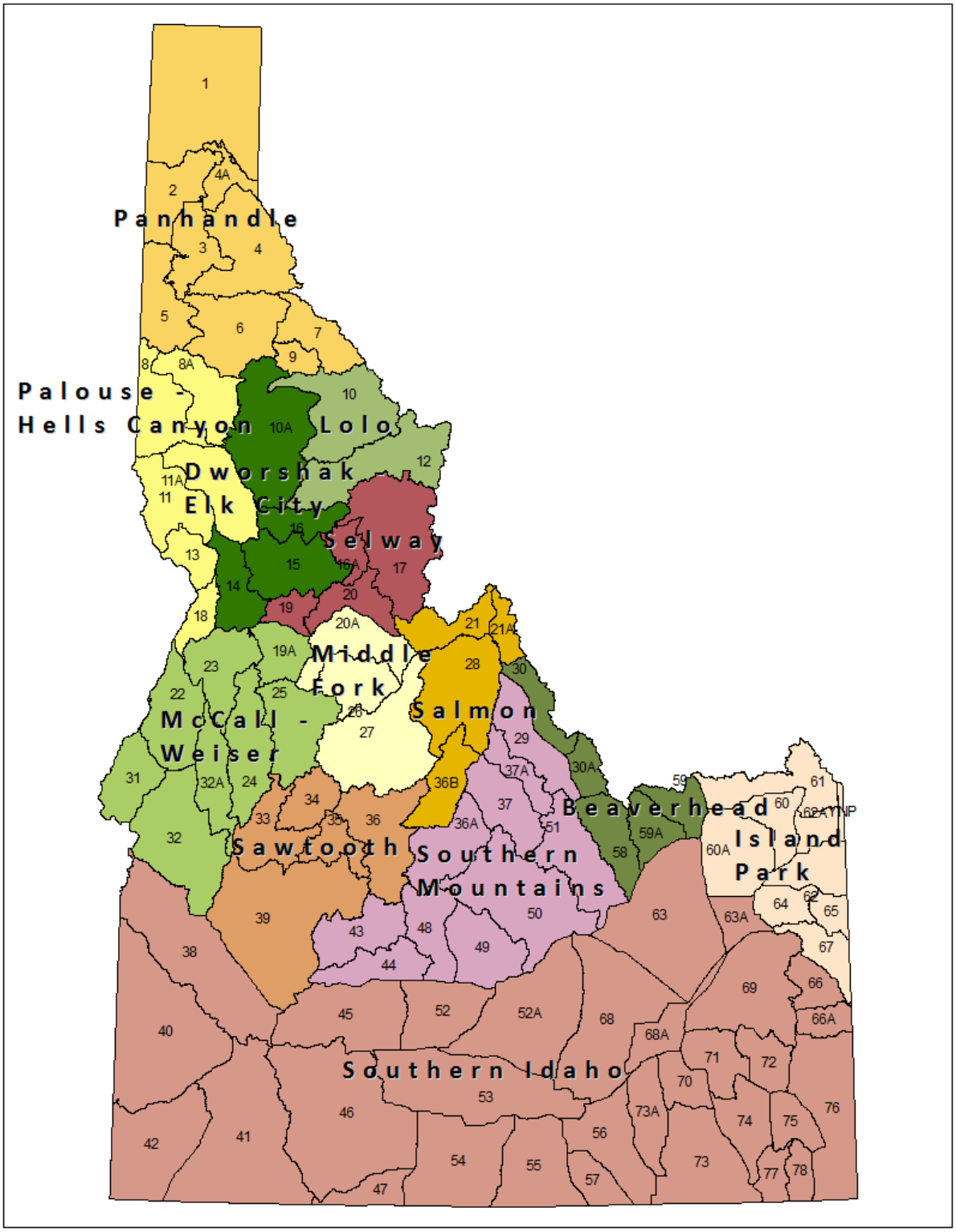

Figure 3. Idaho Wolf Management Zones. Wolf Management Zones were created by combining one or more elk management zones with similarity in wolf population, prey base, and current or potential conflicts with livestock and ungulates.

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 encompassing almost 4 million acres (1.6 million ha), which represent the largest block of federally-designated wilderness in the lower 48 states. Outside of wilderness areas, land ownership and human use patterns result in varying levels of potential human conflict with wolves. Southern Idaho includes the vast Snake River Plain, which is predominantly private agricultural land and also contains most of Idaho's urban centers. Three major mountain chains and 2 large river systems help blend these very different landscapes together, many of which are managed for multiple uses. A moisture gradient also influences habitats of both wolves and their prey, with maritime climates in the north supporting western red cedar (*Thuja plicata*)-western hemlock (*Tsuga heterophylla*) vegetation types, transitioning into continental climates of Douglas-fir (*Pseudotsuga menziesii*) and ponderosa pine (*Pinus ponderosa*) to the south. Elevations vary from 1,500 feet (457 m) to just over 12,000 feet (3,657 m). Annual precipitation varies from less than 8 inches (20 cm) at lower elevations to almost 100 inches (254 cm) at upper elevations.

Wolf Population Status

The Idaho wolf population expanded in numbers since initial reintroductions in 1995 and 1996 (Figures 4 and 5). Although the number of documented packs increased between 2010 and 2011 (Figure 5), the estimated year-end population count declined approximately 4%, primarily due to a reduction in the pack size in 2011 as compared to 2010. Average (median) pack size may be smaller than in past years due to harvest seasons, effective depredation control, or potentially other factors.

The population estimate for 2011 was 746 wolves (Appendix A).

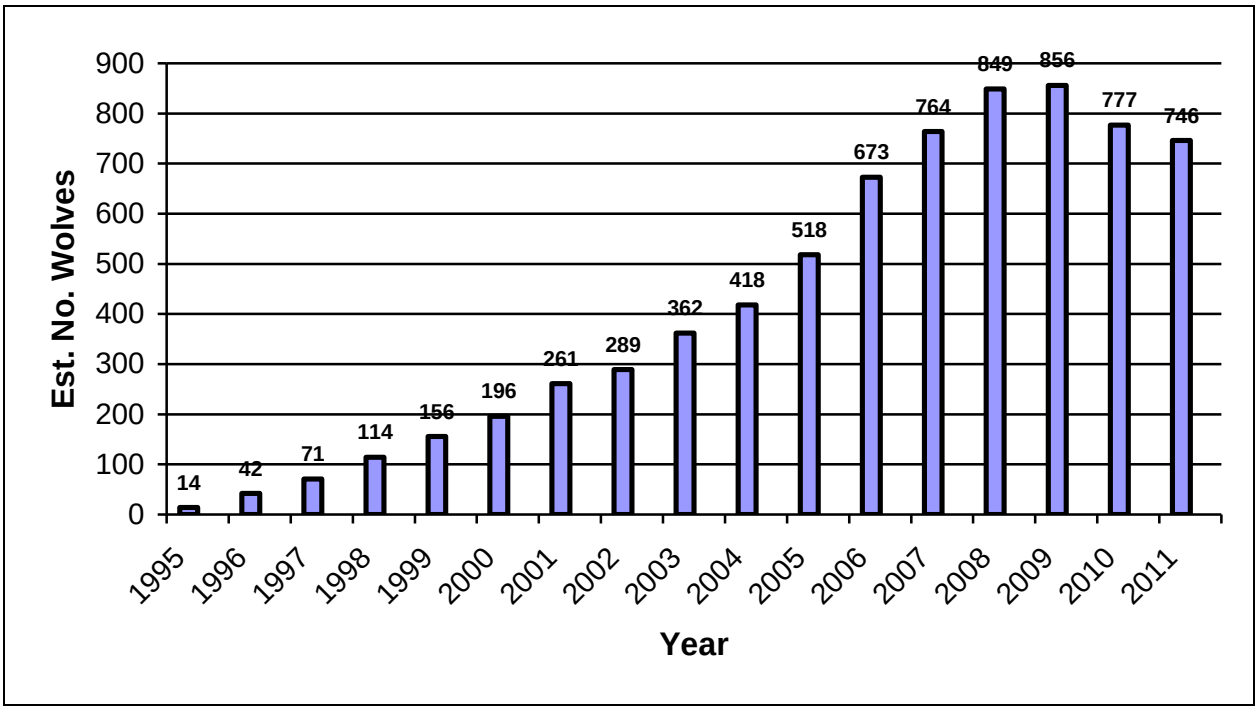

Figure 4. Estimated number of wolves in Idaho at year end, 1995-2011. Annual numbers were based on best information available and were retroactively updated as new information was obtained. See Appendix A for population estimation technique.

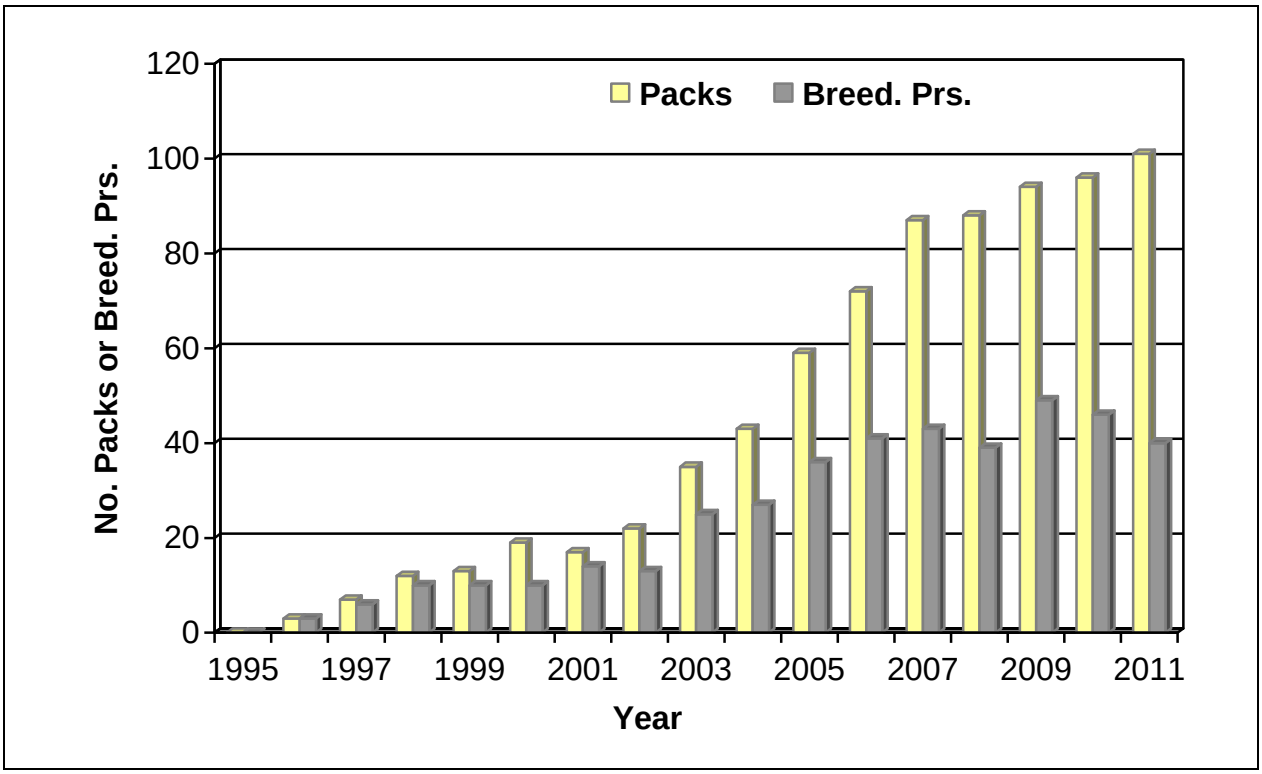

Figure 5. Number of documented wolf packs and breeding pairs in Idaho, 1995-2011. Annual numbers were on based best information available and were retroactively updated as new information was obtained.

Distribution, Reproduction, and Population Status

The Idaho year-end wolf population estimate was obtained by adding the minimum number of wolves detected in the documented packs with complete counts to an estimate of wolves in documented packs without a complete count, plus the number of wolves documented in wolf groups that do not qualify as a pack, and adjusted for lone wolves. See Appendix A for a more detailed documentation of the population estimate for 2011. This method incorporates a count for a proportion of the wolf packs, and uses this data to produce an estimate.

Our 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 - January) telemetry flights or through other methods, and represents our year-end knowledge regarding wolf packs and groups (Table 1). For those packs where a year-end count is labeled "complete" in the narrative, we felt all of the wolves in that pack were observed. For those packs where a year-end count is labeled "incomplete," we were not certain that all wolves in that pack were observed, and the actual size of the pack may have been higher than that reported.

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 101 documented packs present at the end of 2011, territories of most were predominantly on U.S. Forest Service (USFS) public lands. Ten packs were newly documented in 2011: 3 in the Salmon Zone, 2 in Dworshak-Elk City, and 1 each in the Beaverhead, McCall-Weiser, Panhandle, Sawtooth, and Southern Mountains zones. One pack (Yuba River) was removed because there was evidence that it was actually another pack (Big Buck), 2 packs (Antelope Creek, Mahoney) were considered disbanded because of harvest, and 1 pack (Phantom Hill) was removed because we had no evidence during the past 2 years to indicate it remained extant by the end of 2011.

Of 101 documented packs, a minimum of 63 produced litters and 40 packs qualified as breeding pairs (Table 1). Biologists observed 177 wolf pups at dens or rendezvous sites in spring and summer 2011. Documented litter sizes ranged from 1-8 pups. Average minimum litter size for those packs where counts were presumed complete (n = 25) was 4.2 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), 1 pack newly documented in 2011 was presumed to be extant during the previous year and was retroactively added to the number of documented packs for 2010. Also, 8 packs that were removed as documented packs at the end of 2010 based on lack of evidence for the prior 2 years were re-documented from 2011 findings. Based on this retroactively corrected pack count, the estimated wolf population decreased ~4% between 2010 ($\hat{N}$ = 777) and 2011 ($\hat{N}$ = 746; Figure 4). In 2011 median pack size (based on 16 packs for which counts were considered complete) was 6.5 wolves, compared to a mean of 7.1 wolves per pack (n = 20) in 2010. The reduction in estimated median/mean pack size had strong influence on the statewide population estimate (Appendix A).

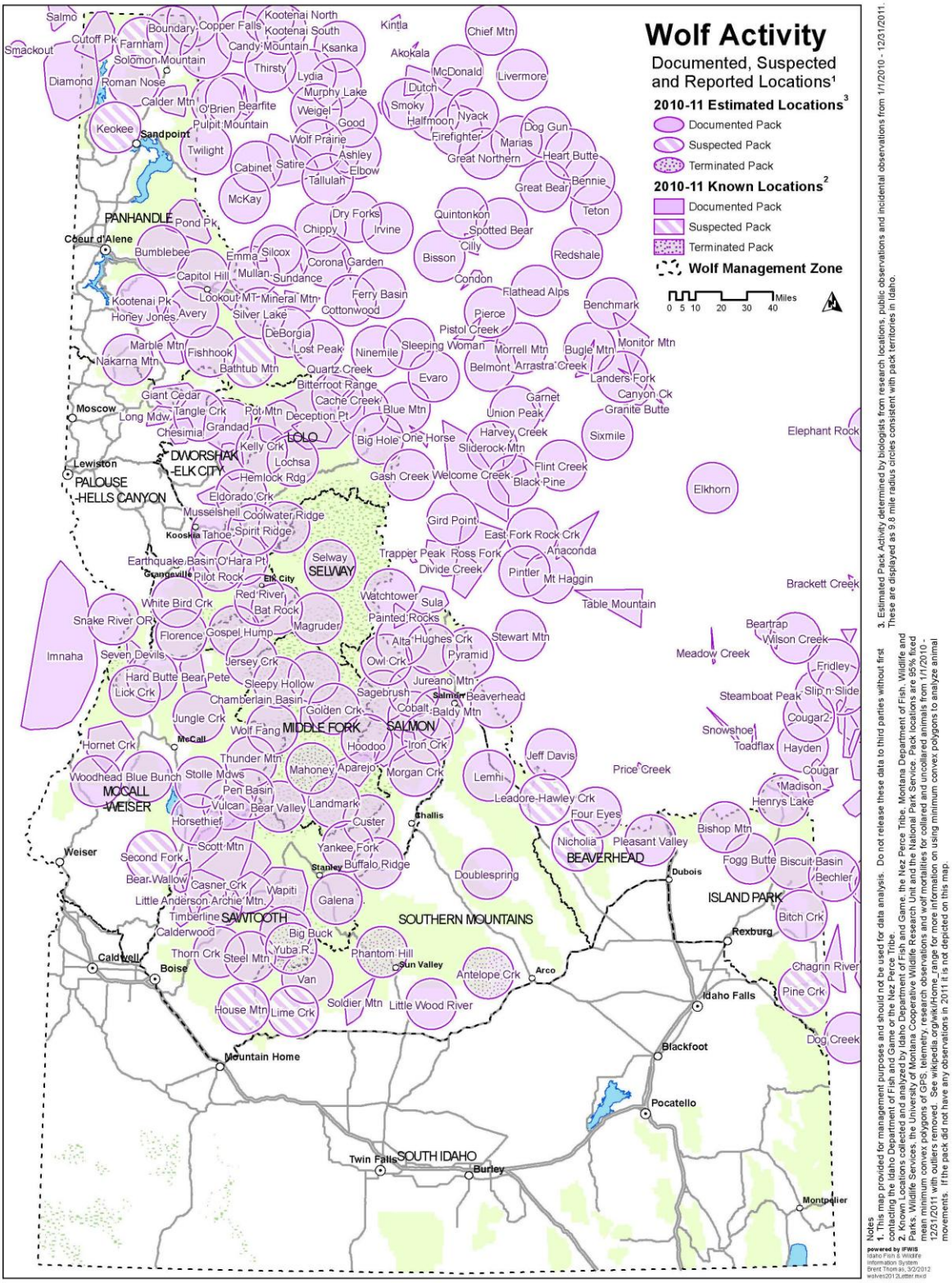

Figure 6. Distribution of documented and suspected wolf packs in Idaho, 2011.

Table 1. Number of wolves detected, documented packs, and other documented wolf groups; pack reproductive status, documented mortality by cause, known dispersal, and monitoring status; and wolf-caused livestock depredations within Idaho Wolf Management Zones, 2011.

	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]	26	18	33	36	8	31	10	20	51	10	7	9	0	259
Documented packs														
No. during year	14	3	15	7	4	12	8	12	16	7	2	5	0	105
No. removed[b]	0	0	0	0	0	0	1	0	1	2	0	0	0	4
No. at end of year[c]	14	3	15	7	4	12	7	12	15	5	2	5	0	101
Other documented groups[d]														
No. during year	1	0	0	0	1	2	1	0	1	2	0	1	0	9
No. removed[b]	0	0	0	0	1	0	0	0	0	1	0	0	0	2
No. at end of year[c]	1	0	0	0	0	2	1	0	1	1	0	1	0	7
Reproductive status														
Minimum no. pups produced	19	11	28	11	8	25	10	22	28	9	1	5	0	177
No. of reproductive packs	7	3	8	4	2	7	3	9	12	4	1	3	0	63
No. of breeding pairs[e]	5	3	6	3	2	5	1	4	7	2	0	2	0	40
Known dispersal	1	1	0	2	0	0	0	3	6	0	0	0	0	14
Monitoring status														
No. of wolf captures[f]	2	1	0	12	0	3	0	0	18	0	0	1	0	37
No. of wolves missing[g]	1	0	3	0	1	1	1	0	0	0	0	1	0	8
Documented mortalities														
Natural	0	0	0	1	0	0	0	0	2	0	0	0	0	3
Control[h]	0	0	8	6	0	11	0	5	17	12	1	2	1	63
Harvest	33	3	35	12	11	17	27	19	14	18	1	10	0	200
Other human-caused[i]	1	1	0	1	0	5	0	1	7	1	1	0	0	18
Unknown	0	1	2	0	0	1	1	5	2	0	0	0	0	12
Total mortalities	34	5	45	20	11	34	28	30	42	31	3	12	1	296

Table 1. Continued.

	Panhandle	Palouse-Hells Canyon	Dworshak -Elk City	Lolo	Selway	McCall-Weiser	Middle Fork	Salmon	Sawtooth	Southern Mtns	Beaver-head	Island Park	South Idaho	Total
Confirmed (probable) wolf-caused livestock losses														
Cattle	0	0	8(3)	0	0	19(6)	0	8(2)	1	32(7)	2(1)	1	0	71(19)
Sheep	0	0	0	0	0	22(1)	0	0	24(7)	41(9)	3(3)	31(6)	0	121(26)
Dogs	0	0	0	0	0	0	0	0	1	3(1)	1	1	0	6(1)
Other	0	0	0	0	0	0(1)	0	2	0	2	0	1	0	5(1)

[a] Number of wolves detected by wolf program personnel from field observations throughout the year, monitoring flights conducted during winter 2011-2012, and documented mortalities occurring from 1/1 – 1/15/12; represents end of year (2011) data. Sum of 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 resident border packs.

[c] Number remaining extant at end of 2011 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 resident border packs.

[d] Other documented wolf groups include suspected packs and known and suspected mated pairs; 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 wolves captured for monitoring purposes during 2011. Most, but not all, were radiocollared.

[g] Radiocollared wolves that became missing in 2011.

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

[i] Includes all other human-related deaths.

Mortality

We documented 296 wolf mortalities within the state in 2011. Nearly all documented mortalities were human-caused (*n* = 281; 95%). Of the 281 confirmed human-caused mortalities, 200 wolves were harvested legally by hunters and trappers, 63 wolves were lethally controlled (50 wolves removed by WS in response to livestock depredations or killed by livestock producers, 13 wolves removed under authorization of IDFG), 11 were killed or suspected to have been killed illegally, and 7 died from other human causes (vehicle or non-target). Wolf mortality not associated with human causes was attributed to unknown (*n* = 12) and natural (*n* = 3) causes. Fewer wolves were lethally removed by WS and livestock producers in Idaho in 2011 than in 2010 (*n* = 50 and *n* = 80, respectively). Lethal removals, ranging from 1 - 7 wolves, occurred in 21 documented wolf packs, 1 other documented group, 1 suspected pack, and unknown wolves. These mortality figures underestimate mortality occurring within the wolf population, as documenting mortalities of uncollared wolves is difficult. Only 3 wolf deaths due to natural causes were recorded, another indication that mortality was underestimated, as more individuals likely succumbed to non-human-related factors. Lastly, we are unable to estimate deaths of pups that occurred before our surveys.

Mortality of radiocollared wolves since 1995: Since the release of the first reintroduced wolves into Idaho in January 1995, over 500 wolves have been captured and instrumented with radiocollars across a large proportion of the state, allowing program biologists to assess the various sources of wolf mortality. Additionally, radiocollared wolves have dispersed into Idaho from adjacent states, augmenting our sample of radiocollared wolves. From 1995 through 2011, 328 radiocollared wolves marked in Idaho or that entered Idaho from an adjacent state were confirmed or suspected to be dead (as in the case when remoteness or logistics prevented retrieval of a radiocollar transmitting a mortality signal). Of these 328 mortalities, 304 were wolves originating in Idaho that died within the state, whereas 24 radiocollared wolves captured or released in Idaho left the state and were killed in an adjacent state or province (Montana: *n* = 20; Wyoming: *n* = 2, Oregon: *n* = 1; British Columbia: *n* = 1). Most wolf mortality was human-caused (66%; *n* = 218), most of which (35%) was associated with livestock conflict (agency lethal control and legal take; *n* = 113; Figure 7). Illegal take (22%) was the second highest documented source of mortality of radiocollared wolves (*n* = 71), followed by regulated hunting/trapping harvest (8%, *n* = 27; Figure 7). A significant proportion of mortalities were of unknown cause (27%, *n* = 88; Figure 7), due in large part to the difficulty of detecting and investigating mortality sites in a timely fashion prior to carcass decomposition. We have experienced few capture-related deaths (*n* = 6) over the last 17 years (Figure 7). Few natural mortalities were documented (*n* = 22; Figure 7).

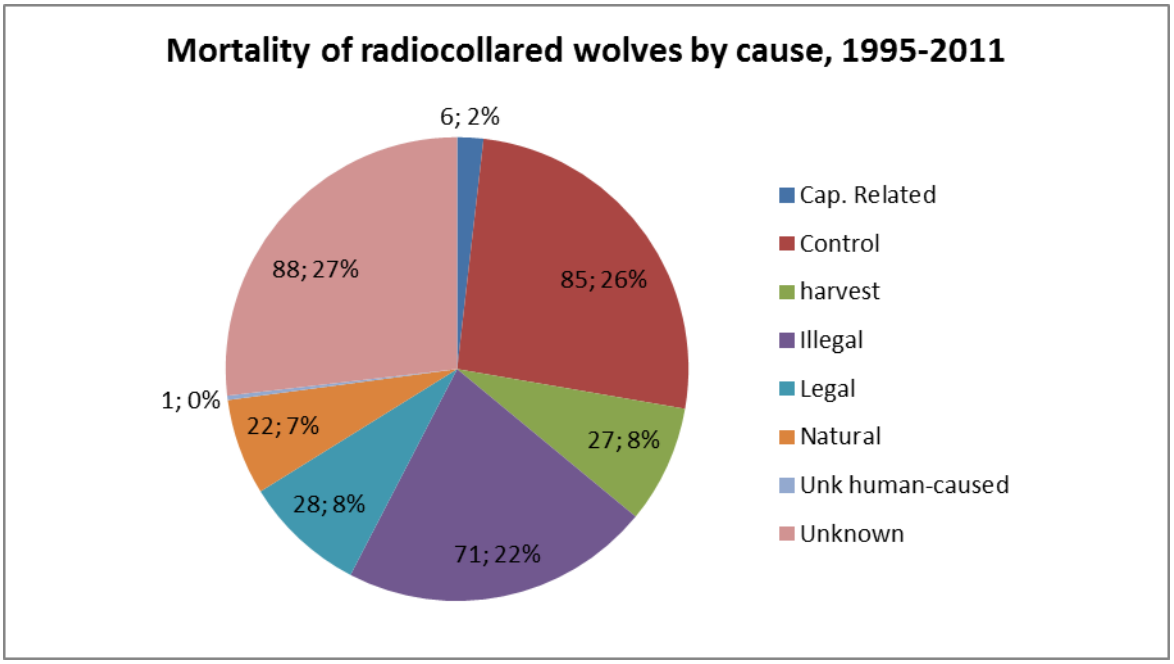

Figure 7. Cause-specific mortality of radiocollared wolves originating from, or dispersing into, Idaho, 1995-2011.

Wolf Harvest Summary

Wolf hunting seasons opened on August 30, 2011 throughout the state. Wolf hunting seasons closed December 31, 2011 in the Island Park and Beaverhead Wolf Management Zones, and are scheduled to close on June 30, 2012 in the Lolo and Selway Zones. Seasons in the other 9 zones close March 31, 2012 (unless harvest limits are met first). Harvest limits were established for 5 of the 13 Wolf Management Zones (Beaverhead, Island Park, Salmon, Sawtooth, and Southern Mountains). In these zones, the season closes when either the harvest limit has been met, or the season closing date is reached, whichever comes first. No harvest limits had been met in any zone by December 31. Hunters could purchase 2 wolf hunting tags per calendar year in 2011. See the wolf seasons brochure for more information.
http://fishandgame.idaho.gov/public/docs/rules/wolfRules.pdf

Wolf Hunting Seasons

Zone (Hunting Units)	Season Dates	Harvest Limit	Notes
Panhandle (1, 2, 3, 4, 4A, 5, 6, 7, 9)	Aug 30 - Mar 31		
Palouse-Hells Canyon (8, 8A, 11, 11A, 13, 18)	Aug 30 - Mar 31		
Lolo (10, 12)	Aug 30 - June 30		
Dworshak-Elk City (10A, 14, 15, 16)	Aug 30 - Mar 31		
Selway (16A, 17, 19, 20)	Aug 30 - June 30		
Middle Fork (20A, 26, 27)	Aug 30 - Mar 31		
Salmon (21, 21A, 28, 36B)	Aug 30 - Mar 31	40	
McCall-Weiser (19A, 22, 23, 24, 25, 31, 32, 32A)	Aug 30 - Mar 31		Motorized hunting restrictions apply in some units. Please see Page 70 of the big game brochure.
Sawtooth (33, 34, 35, 36, 39)	Aug 30 - Mar 31	60	
Southern Mountains (29, 36A, 37, 37A, 43, 44, 48, 49, 50, 51)	Aug 30 - Mar 31	25	Motorized hunting restrictions apply in some units. Please see Page 70 of the big game brochure.
Beaverhead (30, 30A, 58, 59, 59A)	Aug 30 - Dec 31	10	Motorized hunting restrictions apply in some units. Please see Page 70 of the big game brochure.
Island Park (60, 60A, 61, 62, 62A, 64, 65, 67)	Aug 30 - Dec 31	30	Motorized hunting restrictions apply in some units. Please see Page 70 of the big game brochure.
Southern Idaho (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	Aug 30 - Mar 31		Motorized hunting restrictions apply in some units. Please see Page 70 of the big game brochure.

The Idaho Fish and Game commission set wolf trapping seasons for November 15, 2011 – March 31, 2012, in the Lolo, Selway, and Middle Fork Wolf Management Zones and portions of the Panhandle and Dworshak-Elk City Wolf Management Zones. Individuals interested in trapping wolves were required to attend a wolf trapper education class before buying wolf trapping tags. Certified trappers could purchase up to 3 wolf trapping tags per trapping season; additionally, trappers were permitted to use their hunting tags on trapped wolves. See details on the website: http://fishandgame.idaho.gov/public/docs/rules/wolfTrapRules.pdf

Wolf Trapping Seasons		
Zone (Hunting Units)	**Trapping Season Dates**	**Notes**
Panhandle (1, 2, 3, 4, 4A, 5, 6, 7, 9)	Nov 15 - Mar 31	Trapping season open in Units 1, 4, 4A, 5, 6, 7, 9. Units 2 and 3 CLOSED.
Palouse-Hells Canyon (8, 8A, 11, 11A, 13, 18)	CLOSED	
Lolo (10, 12)	Nov 15 - Mar 31	
Dworshak-Elk City (10A, 14, 15, 16)	Nov 15 - Mar 31	Trapping season open in Units 14, 15, 16 on Nov 15, 2011. (Unit 10A was not open in 2011.)
Selway (16A, 17, 19, 20)	Nov 15 - Mar 31	
Middle Fork (20A, 26, 27)	Nov 15 - Mar 31	
Salmon (21, 21A, 28, 36B)	CLOSED	
McCall-Weiser (19A, 22, 23, 24, 25, 31, 32, 32A)	CLOSED	
Sawtooth (33, 34, 35, 36, 39)	CLOSED	
Southern Mountains (29, 36A, 37, 37A, 43, 44, 48, 49, 50, 51)	CLOSED	
Beaverhead (30, 30A, 58, 59, 59A)	CLOSED	
Island Park (60, 60A, 61, 62, 62A, 64, 65, 67)	CLOSED	
Southern Idaho (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	CLOSED	

Two hundred wolves were harvested legally during 2011, 173 by hunting and 27 by trapping. In comparison, hunters harvested 181 wolves legally during the 2009-2010 hunting season, including 135 wolves taken by December 31, 2009.

Livestock and Dog Mortalities

WS recorded 90 cattle, 147 sheep, 7 dogs, 4 horses, and 2 domestic bison that were classified as confirmed or probable wolf depredations (killed by wolves) during the 2011 calendar year (Table 1; USDA-APHIS Wildlife Services 2011). Wolf depredations and cattle losses were highest in the Southern Mountains and McCall-Weiser Zones (Figure 8). Wolf depredation incidents on sheep were highest in the Southern Mountains and Sawtooth Zones, whereas the greatest sheep losses occurred in the Southern Mountains and Island Park Zones, (Figure 9). During 2011, 50 wolves were killed by WS, or killed legally by livestock producers or private citizens, to resolve wolf conflicts with livestock or dogs in Idaho.

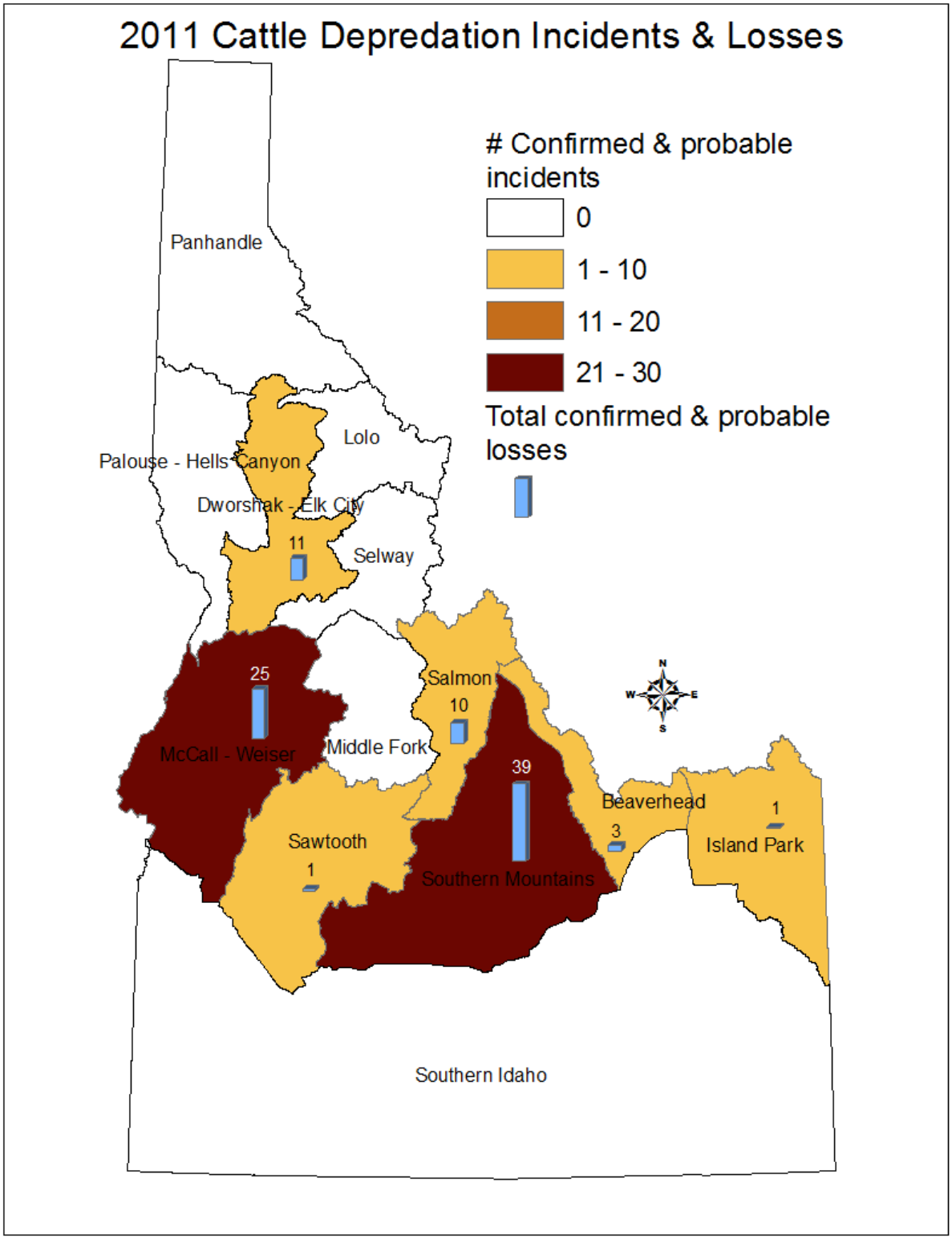

Figure 8. Number of confirmed and probable cattle depredation incidents and corresponding losses in Idaho attributed to wolves by Wolf Management Zone, 2011.

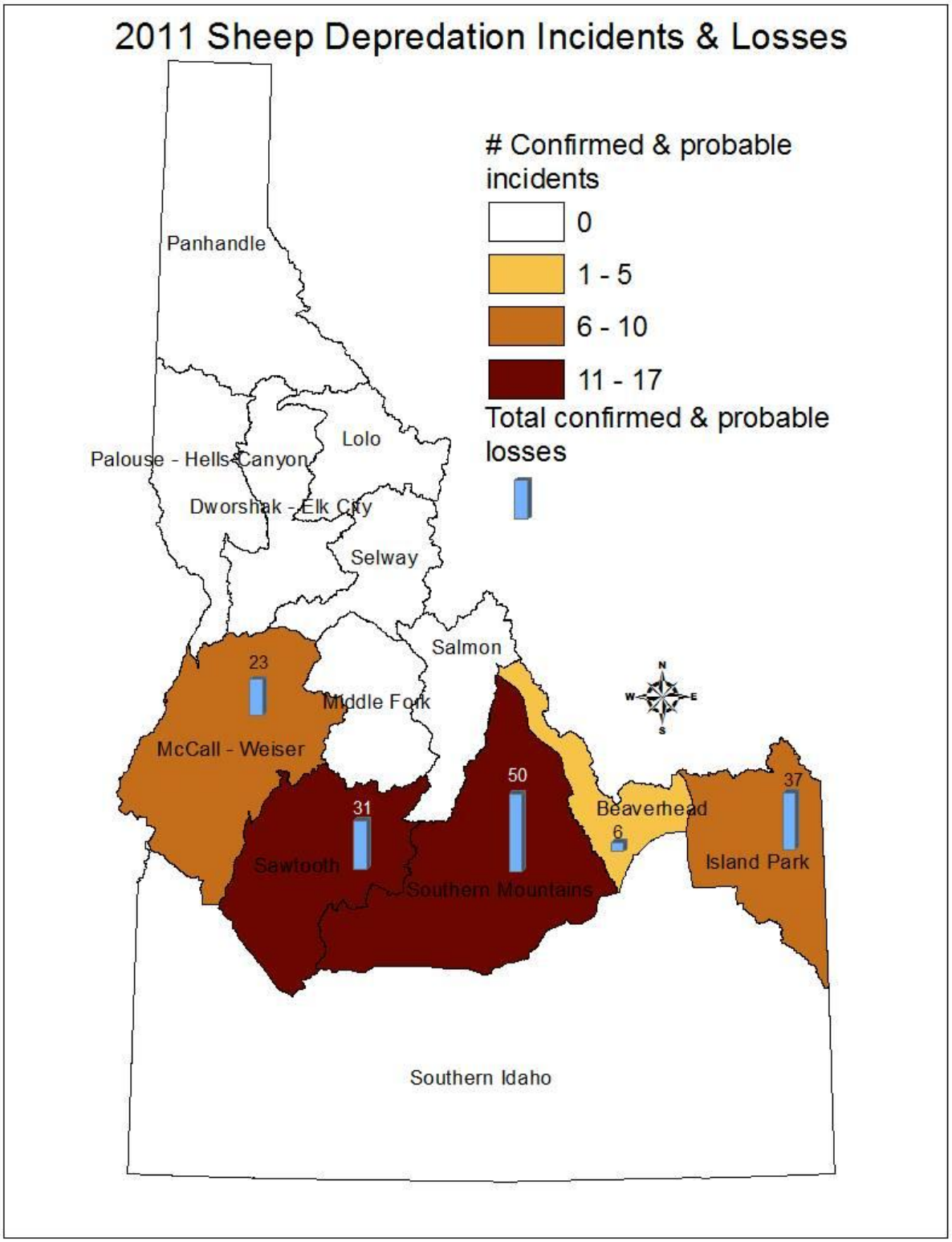

Figure 9. Number of confirmed and probable sheep depredation incidents and corresponding losses in Idaho attributed to wolves by Wolf Management Zone, 2011.

Research

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 2011, IDFG continued efforts to measure the effects of wolf predation and habitat on elk (*Cervus elaphus canadensis*) 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 telemetry. These data will improve our understanding of the predator/prey dynamic in contrasting landscapes. This research is providing contemporary data regarding survival, important mortality factors, and productivity of elk populations that will help biologists identify and evaluate specific predator and habitat management actions necessary to achieve ungulate population objectives.

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

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 are evaluating a variety of survey methods that have demonstrated strong relationships to wolf abundance and distribution. Hunter surveys, rendezvous site surveys, howlboxes, and rub stations are being tested and evaluated. Some of the methods can yield highly detailed information on wolves and provide biologists with tools for better understanding wolves in areas where management interest is high. Collaborators suggest that a monitoring framework based on patch occupancy modeling, using data from survey methods previously described, can provide reliable statewide estimates of wolf population size.

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. This model can estimate wolf abundance and distribution across Idaho without the need for radio-telemetry. Analyses should be finished February or March 2012. To provide more detailed data that could be used for model validation, collaborators developed a habitat model that predicts the locations of wolf pack rendezvous sites. Collaborators conducted surveys at predicted rendezvous sites in 2007-2010, resulting in the detection of 75% of pups and all study packs without the aid of radio-telemetry. Analysis of genetic samples collected during these surveys will be completed in February 2012 by a graduate student at the University of Idaho.

Collaborators worked with the University of Montana's Computer Sciences Department to create a howlbox, an automated wolf detection device that broadcasts wolf howls and records responses from wild wolves. Collaborators deployed the howlbox at wolf pack rendezvous sites and

detected adults and pups quickly and enumerated individuals via analysis of audio spectrograms. This latest inexpensive howlbox can be deployed for 5-6 days using just the internal computer battery, and uses software that is user-friendly and more reliable than previous prototypes.

Additionally, in 5 study areas across Idaho in 2011, collaborators used rub stations to collect >2,300 hair samples to provide occupancy data and to assess measures of genetic diversity. This data is currently being used by a graduate student at The University of Montana and results are expected in 2013.

Biofence for Manipulating Wolf Pack Movements

Gray wolves can conflict with livestock production throughout the NRM. Wolves that prey on domestic livestock are often killed by management agencies or private landowners. These actions typically stop depredations for producers in the short-term, but are not a lasting solution because wolf packs generally fill the recently vacated territory within 1 year and livestock predation often recurs (Bradley 2004). Most tools currently available for non-lethal control of wolves are short-lived in their effectiveness or require constant human presence. Wolves, like most canids worldwide, use scent-marking (deposits of urine, scat, and scratches at conspicuous locations) to establish territories on the landscape and avoid intraspecific conflict. Collaborators with University of Montana and Montana Cooperative Wildlife Research Unit hypothesized that scent-marks consisting of wolf scat and urine (i.e., "biofence"), deployed by humans, could be used to manipulate wolf pack movements in Idaho (Ausband 2010).

Collaborators deployed 65 km of biofence in 2010 and 2011 within 3 wolf pack territories in central Idaho. Location data provided by satellite collared wolves in 2010 showed little to no trespass of the biofence, even though the excluded areas were used by the packs in previous summers. Sign surveys at predicted rendezvous sites in areas excluded by our biofence yielded little to no recent wolf use of those areas. In addition, collaborators opportunistically deployed a biofence in between a resident wolf pack's rendezvous site and a nearby active sheep grazing allotment totaling 2,400 animals. This pack had killed sheep every year since 2006 and 1 guard dog in 2006, but was not implicated in any depredations in summer 2010, even though their rendezvous site was in close proximity to sheep. In 2011, wolves in 2 packs demonstrated little to no trespass of the biofence while wolves in the third pack exhibited notable trespass. Collaborators conclude that biofencing can be used to manipulate movements of wolves, but as with other non-lethal deterrence methods, its effectiveness is not universal.

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 (*Bos taurus*) 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 sq. mi. (10,000 ha) to 320 sq. mi. (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 non-GPS 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 (BACIP) 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.

In July 2011, APHIS-WS captured and collared an adult male wolf with a GPS collar used to track at 15-minute intervals for 210 days before it was lethally controlled for depredating in 2009. The collar on the wolf was programmed to log GPS data at the same 5-minute rate as the cattle GPS collars.

At the end of the 2011 season, 72 of 80 cow collars had been recovered and 61 of these collars contained data sets spanning the entire grazing season for their respective study areas. 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 has been submitted and should appear in the peer-reviewed journal, Rangelands, in 2012.

Outreach

We presented 14 wolf-specific information and education programs to a minimum of 365 people. Audiences included 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. We also participated in interviews with national outlets including NPR and CBC radio which likely reached thousands of people both in the United States and abroad. We 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. Monthly wolf management updates were made available to the public on the IDFG website. 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 2011-2012 wolf harvest season, the Fish and Game Commission established wolf trapping seasons November 15, 2011 through March 31, 2012 in the Lolo, Selway, and Middle Fork Wolf Management Zones and portions of the Panhandle and Dworshak-Elk City Wolf Management Zones. 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 27 8-hour classes in 2011, and certified 604 individuals to trap wolves.

The IDFG online wolf reporting system continued to provide an opportunity for the public and professionals to record wolf observations in Idaho. During 2011, 213 wolf observations were reported on the web site.

PANHANDLE WOLF MANAGEMENT ZONE
Game Management Units ([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 (IDFG 2007).

Monitoring Summary

The Panhandle Zone was occupied by 9 documented resident packs, 5 documented resident border packs, 3 suspected packs, and 1 other documented group during 2011 (Figure 10, Table 2). Two packs were reinstated as documented packs in 2011 after having been removed in 2010 due to lack of verification of activity. One new resident pack was documented in 2011 (reproduction confirmed based on detection of a minimum of one set of pup tracks). Two new suspected packs were identified in 2011 based on multiple hunter observations. Eight border packs were tallied for Montana and 2 borders packs were tallied for Washington.

Seven documented resident and documented resident border packs produced litters and 5 qualified as breeding pairs (Table 2). The reproductive status of 7 packs was unknown.

Two wolves were captured and fitted with radiocollars. One wolf dispersed from the pack from which it was originally captured.

Documented mortalities (n = 34) were attributed to harvest (n = 33) and other human causes (n = 1) (Table 3).

No confirmed or probable wolf-caused livestock or domestic dog depredations occurred in this zone during 2011 (Table 3).

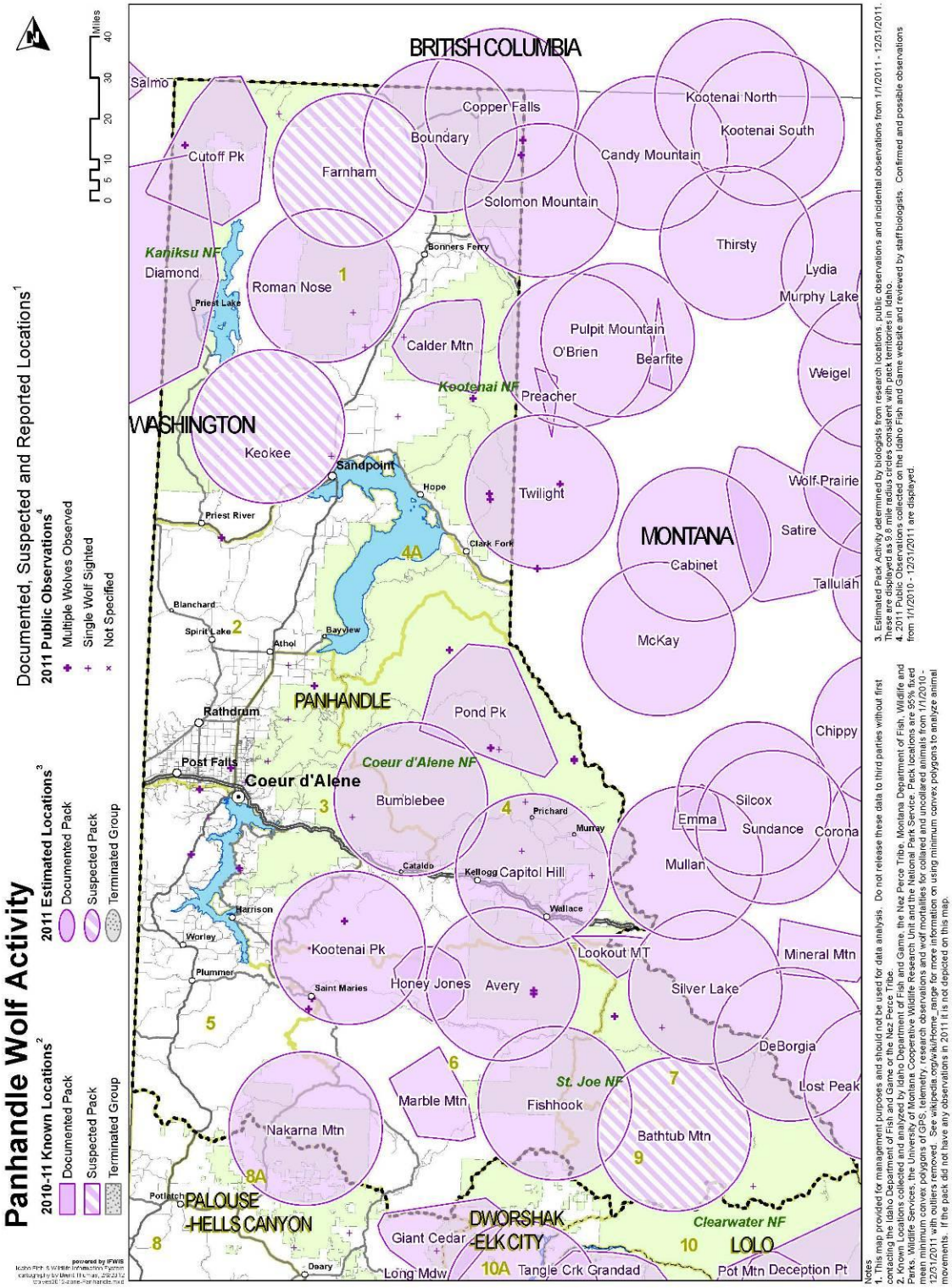

Figure 10. Distribution of documented and suspected wolf packs in the Panhandle Wolf Management Zone, 2011.

Table 2. End of year summary of minimum number of wolves detected, reproductive status, dispersal, and monitoring status for documented and suspected wolf packs and other documented wolf groups within the Panhandle Wolf Management Zone, 2011.

WOLF GROUP[a]	Min. no. wolves detected[b]	Reproductive status			Known dispersal	Monitoring status	
		Min. no. pups prod.(died)[c]	Reported as			No. wolf captures[e]	No. wolves missing[f]
			Reprod. pack	Breeding pair[d]			
DOCUMENTED PACK							
Avery	?	1	YES	NO	1	0	0
Boundary (ID)[g]	?	?	?	NO	0	0	0
Bumblebee	?	?	?	NO	0	0	0
Calder Mountain (ID)[g]	5	2	YES	YES	0	2	0
Capitol Hill	?	1	YES	NO	0	0	0
Copper Falls (ID)[g]	?	?	?	NO	0	0	0
Cutoff Peak (ID)[g]	4	8 (1)	YES	YES	0	0	0
De Borgia (MT)[g]							
Diamond (WA)[g]							
Fishhook	2	?	?	NO	0	0	0
Honey Jones	4	3	YES	YES	0	0	0
Kootenai Peak	2	?	?	NO	0	0	0
Lookout Pass (MT)							
Lost Peak (MT)							
Marble Mountain	4	2	YES	YES	0	0	1
Mullan (MT)[g]							
Nakarna Mountain	4	2	YES	YES	0	0	0
Pond Peak (ID)[g]	?	?	?	NO	0	0	0
Preacher (MT)							
Roman Nose	?	?	?	NO	0	0	0
Salmo (WA)							
Silver Lake (MT)[g]							
Solomon Mountain (MT)[g]							
Twilight (MT)[g]							
SUBTOTAL	25	19(1)			1	2	1
SUSPECTED PACK							
Bathtub Mountain	?				0	0	0
Farnham	?				0	0	0
Keokee	?				0	0	0
SUBTOTAL	0	0			0	0	0
OTHER DOC. GROUP							
B517	1	0			0	0	0
SUBTOTAL	1	0			0	0	0
WMZ TOTAL	26	19(1)			1	2	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.).

Table 2. Continued.

[b] Number of wolves detected by wolf program personnel from field observations throughout the year, monitoring flights conducted during winter 2011/2012 and documented mortalities occurring from 1/1 – 1/15/12; represents end of year (2011) data.
[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] Includes wolves captured for monitoring purposes during 2011. Most, but not all, were radiocollared.
[f] Radiocollared wolves that became missing in 2011.
[g] Border packs officially tallied to (STATE); territory known/likely shared with Idaho. Data on these packs can be found in Rocky Mountain Wolf Recovery 2011 Annual Report or other source.

Table 3. End of year summary of documented wolf mortality and wolf-caused livestock depredations by GMU within the Panhandle Wolf Management Zone, 2011.

GMU	Documented mortality					Confirmed (probable) wolf-caused livestock losses			
	Natural	Control[a]	Harvest	Other human[b]	Unknown[c]	Cattle	Sheep	Dogs	Other
1	0	0	17	0	0	0	0	0	0
4	0	0	6	1	0	0	0	0	0
5	0	0	1	0	0	0	0	0	0
6	0	0	7	0	0	0	0	0	0
7	0	0	2	0	0	0	0	0	0
WMZ TOTAL	0	0	33	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.

Pack Summaries

Documented Resident Packs

Avery

- No estimate of pack size was obtained

Bumblebee

- No estimate of pack size was obtained

Capitol Hill

- New documented pack for 2011
- Reproduction verified by detection of minimum of 1 set of pup tracks
- No estimate of pack size was obtained

Fishhook

- Retroactively reinstated back to 2010 due to re-verification of pack persistence and used to revise the 2010 population estimate
- Reproduction surveys conducted but not successful at verifying pups
- Minimum pack estimate of 2 wolves at end of 2011

Honey Jones

- Minimum pack estimate of 4 wolves at end of 2011

Kootenai Peak

- Minimum pack estimate of 2 wolves at end of 2011

Marble Mountain

- Reproduction verified by howlbox recordings of minimum of 2 pups and tracks observed at rendezvous site
- Minimum pack estimate of 4 wolves at end of 2011

Nakarna Mountain

- Minimum pack estimate of 4 wolves at end of 2011

Roman Nose

- Renamed in 2011 (formerly R1-1)
- No estimate of pack size was obtained

<u>Documented Resident Border Packs</u>

Boundary

- Retroactively reinstated back to 2010 due to re-verification of pack persistence and used to revise the 2010 population estimate
- No estimate of pack size was obtained

Calder Mountain

- Reproduction verified by capture of 2 pups
- Pack count (incomplete) of 5 wolves at end of 2011

Copper Falls

- No estimate of pack size was obtained
- Reproduction surveys conducted but not successful at verifying pups
- No estimate of pack size was obtained

Cutoff Peak

- Reproduction verified by detection of 8 pups via trail camera
- Minimum pack estimate of 4 wolves at end of 2011

Pond Peak

- No estimate of pack size was obtained

Documented Non-Resident Border Packs

De Borgia (MT)

- This documented border pack was tallied for Montana in 2011

Diamond (WA)

- This documented border pack was tallied for Washington in 2011

Lookout (MT)

- This documented border pack was tallied for Montana in 2011

Lost Peak (MT)

- This documented border pack was tallied for Montana in 2011

Mullan (MT)

- This documented border pack was tallied for Montana in 2011

Preacher (MT)

- This documented border pack was tallied for Montana in 2011

Salmo (WA)

- This documented border pack was tallied for Washington in 2011

Silver Lake (MT)

- This documented border pack was tallied for Montana in 2011

Solomon Mountain (MT)

- This documented border pack was tallied for Montana in 2011

Twilight (MT)

- This documented border pack was tallied for Montana in 2011

For more detailed information on border packs counted by other states, please see annual reports for the respective state (Montana: Bradley et al. 2012; Washington: http://wdfw.wa.gov/conservation/gray_wolf/); Wyoming: Jimenez et al. 2012).

Suspected Resident Packs

Bathtub Mountain

- No field effort expended for capture or reproductive surveys

Farnham

- New suspected pack for 2011, based on hunter observations
- No field effort expended for capture or reproductive surveys

Keokee

- New suspected pack for 2011, based on hunter observations
- No field effort expended for capture or reproductive surveys

Other Documented Wolf Groups

B517

- Minimum group estimate of 1 at end of 2011

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 remained. Timber harvest in the corporate timber, private timber, state land, and federal land areas of GMU 8A increased dramatically through the 1980s and 1990s, creating vast acreages of early successional ungulate habitat (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. Most of the Hells Canyon Wilderness Area is in GMU 18 (IDFG 2007).

Monitoring Summary

The Palouse-Hells Canyon Zone was occupied by 3 documented packs at the end of 2011 (Figure 11, Table 4).

All 3 documented packs produced litters and qualified as breeding pairs (Table 4).

One wolf was recaptured and its radiocollar replaced. One wolf dispersed from the pack from which it was originally captured.

Documented mortalities (n = 5) were attributed to harvest (n = 3), other human (n = 1), and unknown (n = 1) causes (Table 5).

No probable or confirmed wolf-caused livestock or domestic dog depredations occurred in this zone (Table 5).

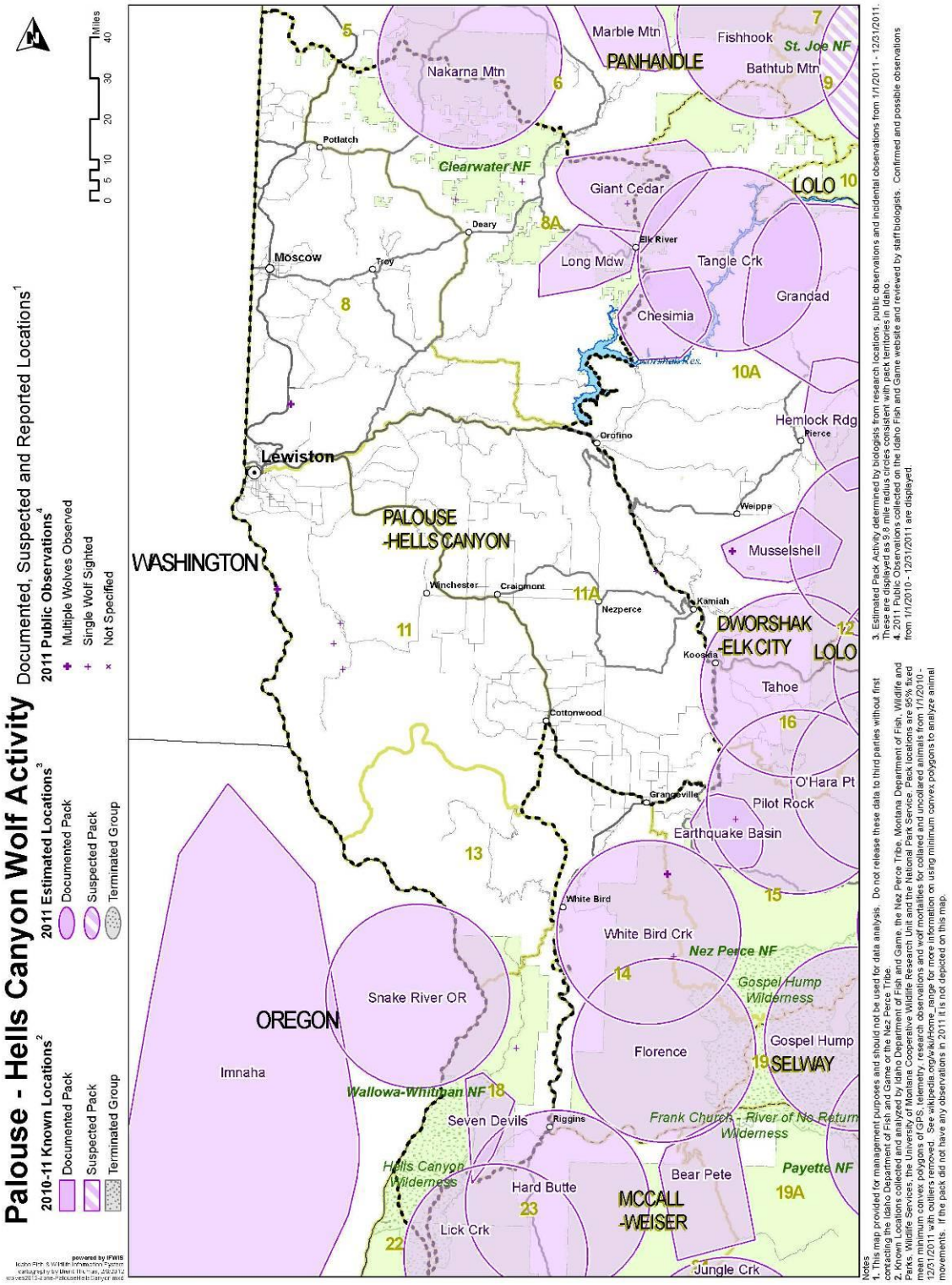

Figure 11. Distribution of documented and suspected wolf packs in the Palouse-Hells Canyon Wolf Management Zone, 2011.

Table 4. End of year summary of minimum number of wolves detected, reproductive status, dispersal, and monitoring status for documented and suspected wolf packs and other documented wolf groups within the Palouse-Hells Canyon Wolf Management Zone, 2011.

WOLF GROUP[a]	Min. no. wolves detected[b]	Reproductive status			Known dispersal	Monitoring status	
		Min. no. pups prod.(died)[c]	Reported as			No. wolf captures[e]	No. wolves missing[f]
			Reprod. pack	Breeding pair[d]			
DOCUMENTED PACK							
Giant Cedar	4	3	YES	YES	1	1	0
Long Meadow	4	2	YES	YES	0	0	0
Seven Devils	10	6	YES	YES	0	0	0
SUBTOTAL	18	11			1	1	0
SUSPECTED PACK							
SUBTOTAL	0	0			0	0	0
OTHER DOC. GROUP							
SUBTOTAL	0	0			0	0	0
WMZ TOTAL	18	11			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 2011/2012 and documented mortalities occurring from 1/1 – 1/15/12; represents end of year (2011) data.

[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…".

[e] Includes wolves captured for monitoring purposes during 2011. Most, but not all, were radiocollared.

[f] Radiocollared wolves that became missing in 2011.

Table 5. End of year summary of documented wolf mortality and wolf-caused livestock depredations by GMU within the Palouse-Hells Canyon Wolf Management Zone, 2011.

GMU	Documented mortality					Confirmed (probable) wolf-caused livestock losses			
	Natural	Control[a]	Harvest	Other human[b]	Unknown[c]	Cattle	Sheep	Dogs	Other
8	0	0	0	0	0	0	0	0	0
8A	0	0	2	0	1	0	0	0	0
11	0	0	0	0	0	0	0	0	0
11A	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0
18	0	0	1	1	0	0	0	0	0
WMZ TOTAL	0	0	3	1	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.

Pack Summaries

Documented Resident Packs

Giant Cedar

- Minimum pack estimate of 4 wolves at end of 2011

Long Meadow

- Minimum of 2 pups verified via howling
- Minimum pack estimate of 4 wolves at end of 2011

Seven Devils

- Pack count (complete) of 10 wolves at end of 2011

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

Monitoring Summary

The Dworshak-Elk City Zone was occupied by 15 documented packs during 2011 (Figure 12, Table 6). One pack was newly documented in 2011, but was retroactively added to 2010 based on the presence of multiple adult-sized wolves. Two packs were reinstated as documented packs in 2011 after having been removed in 2010 due to lack of verification of activity. One pack was changed from suspected to documented pack status in 2011 with the aerial observation of 5 wolves.

Eight documented resident packs produced litters, and 6 qualified as breeding pairs (Table 6). The reproductive status of 7 packs was unknown.

No radiocollared wolves were known to have dispersed in 2011, and no wolves were captured.

Documented mortalities (n = 45) were attributed to harvest (n = 35), control (agency removal and legal take; n = 8), and unknown (n = 2) causes (Table 7).

Confirmed (n = 8) and probable (n = 3) wolf-caused cattle losses were attributed to 3 documented wolf packs and unknown wolf groups in this zone (Table 7). No domestic sheep or dog losses were recorded.

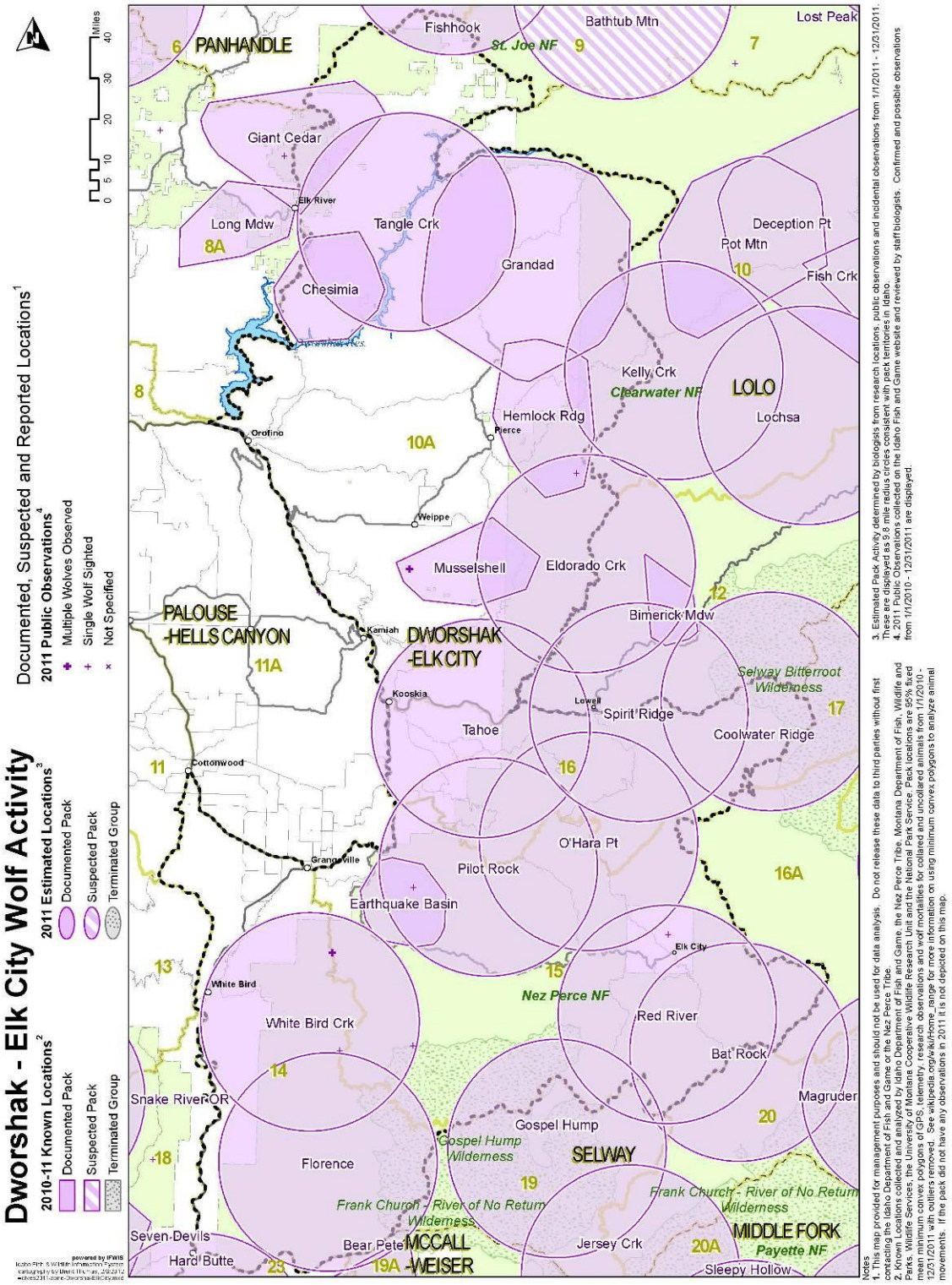

Figure 12. Distribution of documented and suspected wolf packs in the Dworshak-Elk City Wolf Management Zone, 2011.

Table 6. End of year summary of minimum number of wolves detected, reproductive status, dispersal, and monitoring status for documented and suspected wolf packs and other documented wolf groups within the Dworshak-Elk City Wolf Management Zone, 2011.

WOLF GROUP[a]	Min. no. wolves detected[b]	Reproductive status			Known dispersal	Monitoring status	
		Min. no. pups prod.(died)[c]	Reported as			No. wolf captures[e]	No. wolves missing[f]
			Reprod. pack	Breeding pair[d]			
DOCUMENTED PACK							
Bat Rock	4	5(1)	YES	YES	0	0	0
Chesimia	4	4	YES	YES	0	0	1
Coolwater Ridge	?	?	?	NO	0	0	0
Earthquake Basin	7	6	YES	YES	0	0	0
Eldorado Creek	?	1	YES	NO	0	0	0
Florence	4	2	YES	YES	0	0	0
Grandad	6	3	YES	YES	0	0	0
Hemlock Ridge	?	?	?	NO	0	0	0
Musselshell	4	?	?	NO	0	0	0
O'Hara Point	?	?	?	NO	0	0	0
Pilot Rock	?	?	?	NO	0	0	0
Red River	4	4	YES	YES	0	0	0
Tahoe	?	?	?	NO	0	0	1
Tangle Creek	?	?	?	NO	0	0	1
White Bird Creek	?	3(2)	YES	NO	0	0	0
SUBTOTAL	33	28(3)			0	0	3
SUSPECTED PACK							
SUBTOTAL	0	0			0	0	0
OTHER DOC. GROUP							
SUBTOTAL	0	0			0	0	0
WMZ TOTAL	33	28(3)			0	0	3

[a] Documented packs = territorial groups of wolves usually consisting of an adult male and female and their offspring from one or more generations, and has the potential to reproduce (2 adults of opposite sex). Suspected packs = geographic areas where wolf pack presence was suspected but not verified, or where wolf presence was verified but did not meet documented pack status. Other documented group = verified groups not meeting either documented or suspected pack status (e.g., lone wolves, potential mated pairs, etc.).

[b] Number of wolves detected by wolf program personnel from field observations throughout the year, monitoring flights conducted during winter 2011/2012 and documented mortalities occurring from 1/1 – 1/15/12; represents end of year (2011) data.

[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…".

[e] Includes wolves captured for monitoring purposes during 2011. Most, but not all, were radiocollared.

[f] Radiocollared wolves that became missing in 2011.

Table 7. End of year summary of documented wolf mortality and wolf-caused livestock depredations by GMU within the Dworshak-Elk City Wolf Management Zone, 2011.

GMU	Documented mortality					Confirmed (probable) wolf-caused livestock losses			
	Natural	Control[a]	Harvest	Other human[b]	Unknown[c]	Cattle	Sheep	Dogs	Other
10A	0	0	19	0	1	1	0	0	0
14	0	0	6	0	0	0(1)	0	0	0
15	0	7	7	0	1	3(2)	0	0	0
16	0	1	3	0	0	4	0	0	0
WMZ TOTAL	0	8	35	0	2	8(3)	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.

Pack Summaries

Documented Resident Packs

Bat Rock

- New documented pack for 2011, and retroactively added to 2010 due to presence of multiple wolves and used to revise the 2010 population estimate
- Minimum pack estimate of 4 wolves at end of 2011

Chesimia

- Pack count (incomplete) 4 wolves at end of 2011

Coolwater Ridge

- Reproduction surveys conducted but not successful at verifying pups
- No estimate of pack size was obtained

Earthquake Basin

- Pack count (complete) of 7 wolves at end of 2011

Eldorado Creek

- No estimate of pack size was obtained

Florence

- Retroactively reinstated back to 2010 due to re-verification of pack persistence and used to revise the 2010 population estimate
- Minimum pack estimate of 4 wolves at end of 2011

Grandad

- Pack count (complete) of 6 wolves at end of 2011

Hemlock Ridge

- Reproduction surveys conducted but not successful at verifying pups
- No estimate of pack size was obtained

Musselshell

- One confirmed cattle (calf) depredation
- Reproduction surveys conducted but not successful at verifying pups
- No estimate of pack size was obtained

O'Hara Point

- Three confirmed cattle (3 calves), 1 probable cattle (calf) depredations
- Seven wolves lethally controlled (IDFG control action)
- Retroactively reinstated back to 2010 due to re-verification of pack persistence and used to revise the 2010 population estimate
- Reproduction surveys conducted but not successful at verifying pups
- No estimate of pack size was obtained

Pilot Rock

- Reproduction surveys conducted but not successful at verifying pups
- No estimate of pack size was obtained

Red River

- Minimum pack estimate of 4 wolves at end of 2011

Tahoe

- Pack status changed from suspected to documented based on aerial observation of 5 wolves in winter 2010/2011
- Reproduction surveys not conducted due to land ownership concerns
- No estimate of pack size was obtained

Tangle Creek

- Reproduction surveys conducted but not successful at verifying pups
- No estimate of pack size was obtained

White Bird Creek

- One probable (calf) cattle depredation
- No estimate of pack size was obtained

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 has medium road densities and provides good access for motorized vehicles. The remaining portion has low road densities, but contains good hiking trails. Between 1926 and 1990, over 1,181 miles (1,900 km) of roads were built in this area to access marketable timber. State Highway 12 along the Lochsa River was completed in 1962 and is the primary travel corridor. In 1964, most of the southern portion of GMU 12 was designated as part of the Selway-Bitterroot Wilderness (IDFG 2007).

Monitoring Summary

The Lolo Zone was occupied by 5 documented resident packs and 2 documented resident border packs during 2011 (Figure 13, Table 8). Six border packs tallied for Montana resided adjacent to this zone.

Four documented packs produced litters and 3 qualified as breeding pairs. The reproductive status of 3 packs was unknown (Table 8).

No radiocollared wolves were known to have dispersed in 2011. Twelve wolves in 3 packs were captured and radiocollared in 2011.

Documented mortalities (n = 20) included harvest (n = 12), control (agency removal and legal take; n = 6), natural (n = 1), and other human causes (n = 1; Table 9). One juvenile wolf was harvested whose pack association could not be definitively assigned, and was not counted toward the zone pup reproduction total to avoid potential double counting.

No confirmed or probable wolf-caused livestock or domestic dog depredations occurred in this zone (Table 9).

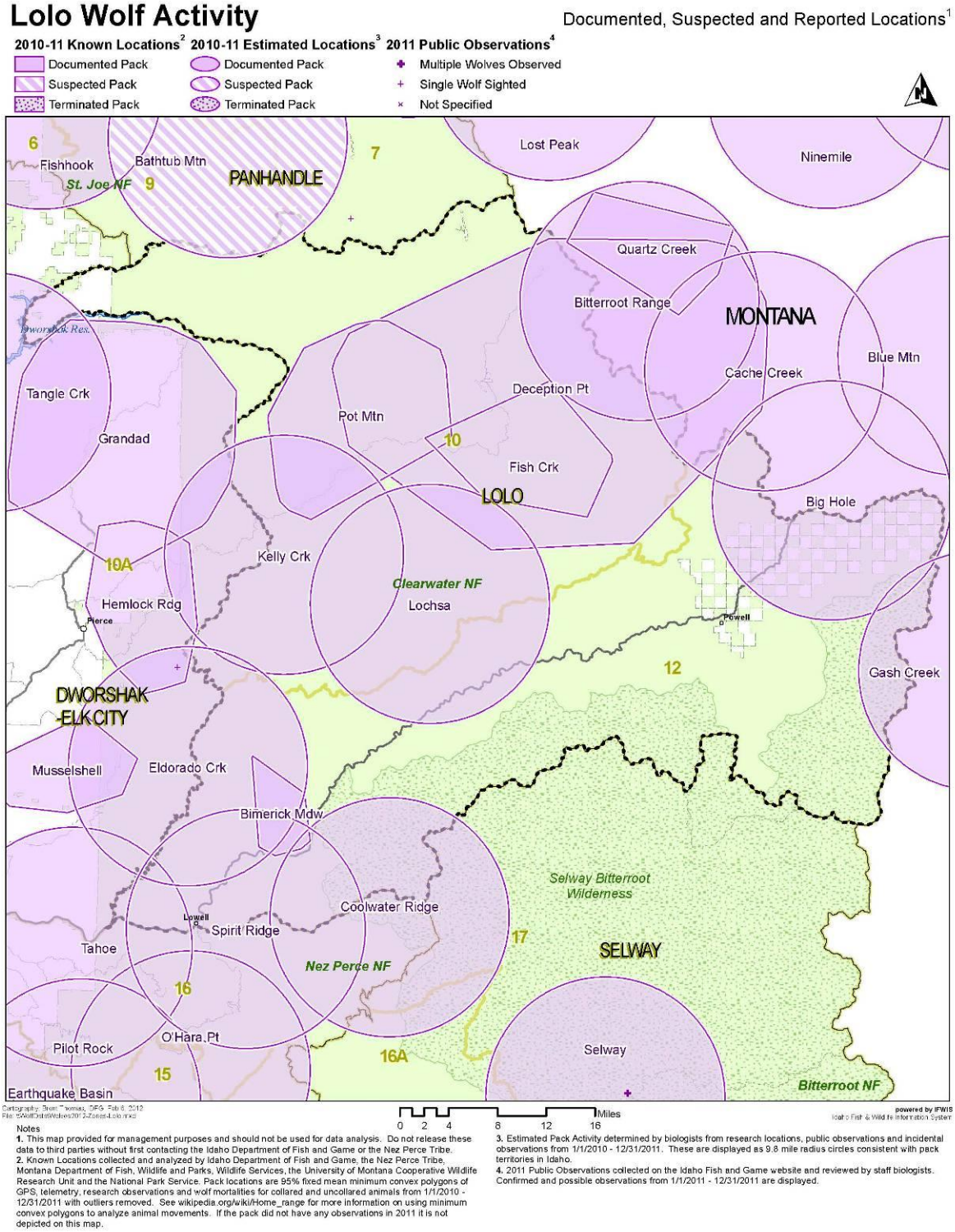

Figure 13. Distribution of documented and suspected wolf packs in the Lolo Wolf Management Zone, 2011.

Table 8. End of year summary of minimum number of wolves detected, reproductive status, dispersal, and monitoring status for documented and suspected wolf packs and other documented wolf groups within the Lolo Wolf Management Zone, 2011.

WOLF GROUP[a]	Min. no. wolves detected[b]	Reproductive status			Known dispersal	Monitoring status	
		Min. no. pups prod.(died)[c]	Reported as			No. wolf captures[e]	No. wolves missing[f]
			Reprod. pack	Breeding pair[d]			
DOCUMENTED PACK							
Big Hole (MT)[g]							
Bimerick Meadow	4	2	YES	YES	0	0	0
Bitterroot Range (MT)[g]							
Cache Creek (MT)[g]							
Deception (ID)[g]	?	?	?	NO	2	2	0
Fish Creek (ID)[g]	5	?	?	NO	0	6	0
Gash Creek (MT)[g]							
Kelly Creek	4	3	YES	YES	0	0	0
Lochsa	16	5	YES	YES	0	0	0
One Horse (MT)[g]							
Pot Mountain	7	1	YES	NO	0	4	0
Quartz Creek (MT)[g]							
Spirit Ridge	?	?	?	NO	0	0	0
Unknown		1(1)			0	0	0
SUBTOTAL	36	11(1)			2	12	0
SUSPECTED PACK							
SUBTOTAL	0	0			0	0	0
OTHER DOC. GROUP							
	0	0			0	0	0
WMZ TOTAL	36	11(1)			2	12	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 2011/2012 and documented mortalities occurring from 1/1 – 1/15/12; represents end of year (2011) data.

[c] Number in parentheses indicates known pup mortality; pup mortalities tallied in the appropriate row/column in DOCUMENTED MORTALITY in Table 9. Pups documented via mortality whose pack association could not be definitively assigned were designated as Unknown in DOCUMENTED PACK column, and were not counted towards the zone reproduction total to avoid potential double-counting.

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

[e] Includes wolves captured for monitoring purposes during 2011. Most, but not all, were radiocollared.

[f] Radiocollared wolves that became missing in 2011.

[g] Border packs officially tallied to (STATE); territory known/likely shared with Idaho. Data on these packs can be found in Rocky Mountain Wolf Recovery 2011 Annual Report or other source.

Table 9. End of year summary of documented wolf mortality and wolf-caused livestock depredations by GMU within the Lolo Wolf Management Zone, 2011.

GMU	Documented mortality					Confirmed (probable) wolf-caused livestock losses			
	Natural	Control[a]	Harvest	Other human[b]	Unknown[c]	Cattle	Sheep	Dogs	Other
10	1	3	10	1	0	0	0	0	0
12	0	3	2	0	0	0	0	0	0
WMZ TOTAL	1	6	12	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.

Pack Summaries

Documented Resident Packs

Bimerick Meadow

- Two wolves lethally controlled (IDFG control action)
- Minimum pack estimate of 4 wolves at end of 2011

Kelly Creek

- Minimum pack estimate of 4 wolves at end of 2011

Lochsa

- Pack count (complete) of 16 wolves at end of 2011

Pot Mountain

- Pack count (complete) of 7 wolves at end of 2011

Spirit Ridge

- Reproduction surveys conducted but not successful at verifying pups
- No estimate of pack size was obtained

Documented Resident Border Packs

Deception

- Reproduction surveys conducted but not successful at verifying pups
- No estimate of pack size was obtained

Fish Creek

- Three wolves lethally controlled (IDFG control action)
- Reproduction surveys conducted but not successful at verifying pups
- Pack count (complete) of 5 wolves at end of 2011

Documented Non-Resident Border Packs

Big Hole (MT)

- This documented border pack was tallied for Montana in 2011

Bitterroot Range (MT)

- This documented border pack was tallied for Montana in 2011

Cache Creek (MT)

- This documented border pack was tallied for Montana in 2011

Gash Creek (MT)

- This documented border pack was tallied for Montana in 2011

One Horse (MT)

- This documented border pack was tallied for Montana in 2011

Quartz Creek (MT)

- This documented border pack was tallied for Montana in 2011

For more detailed information on border packs counted by other states, please see annual reports for the respective state (Montana: Bradley et al. 2012; Washington: http://wdfw.wa.gov/conservation/gray_wolf/); Wyoming: Jimenez et al. 2012).

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

Background

Habitat within the Selway Zone varies from high-precipitation, forested areas along the lower reaches of the Selway River to dry, steep, south-facing Ponderosa pine and grassland habitat along the Salmon River. Many areas along the Salmon River represent a mix of successional stages due to frequent fires within the wilderness. Fire suppression within portions of the Selway River drainage has led to decreasing forage production for big game. Road densities are low. Noxious weeds, especially spotted knapweed (*Centaurea stoebe*), have encroached upon many low-elevation areas (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).

Monitoring Summary

The Selway Zone was occupied by 4 documented packs and 1 other documented group during 2011 (Figure 14, Table 10). Two packs were reinstated as documented packs in 2011, after having been removed in 2010 due to lack of verification of activity. One border pack tallied for Montana resided adjacent to this zone.

Two documented resident packs produced litters, and both qualified as breeding pairs. The reproductive status of 2 packs was unknown (Table 10). Three pups were harvested whose pack association could not be definitively assigned, and were not counted toward the zone pup reproduction total to avoid potential double counting.

No radiocollared wolves were known to have dispersed in 2011, and no wolves were captured.

Harvest accounted for all known mortality (n = 11; Table 11).

This predominantly wilderness zone contained few domestic livestock and no losses were reported (Table 11).

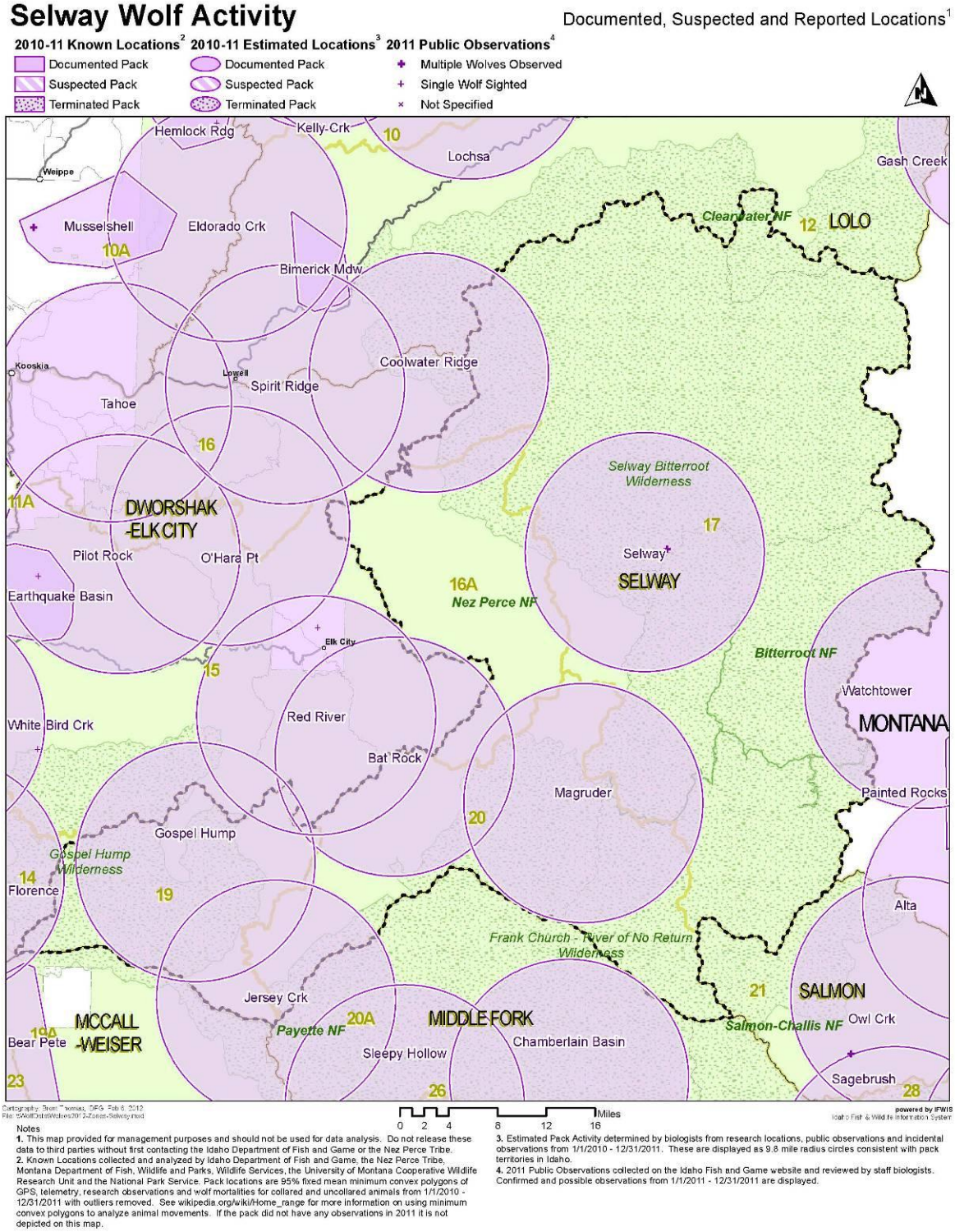

Figure 14. Distribution of documented and suspected wolf packs in the Selway Wolf Management Zone, 2011.

Table 10. End of year summary of minimum number of wolves detected, reproductive status, dispersal, and monitoring status for documented and suspected wolf packs and other documented wolf groups within the Selway Wolf Management Zone, 2011.

WOLF GROUP[a]	Min. no. wolves detected[b]	Reproductive status			Known dispersal	Monitoring status	
		Min. no. pups prod.(died)[c]	Reported as			No. wolf captures[e]	No. wolves missing[f]
			Reprod. pack	Breeding pair[d]			
DOCUMENTED PACK							
Gospel Hump	4	5	YES	YES	0	0	0
Jersey Creek	?	?	?	NO	0	0	0
Magruder	?	?	?	NO	0	0	0
Selway	4	3	YES	YES	0	0	0
Watchtower (MT)[g]							
Unknown	0	3(3)			0	0	0
SUBTOTAL	8	8(3)			0	0	0
SUSPECTED PACK							
SUBTOTAL	0	0			0	0	0
OTHER DOC. GROUP							
~~B356~~	?	0			0	0	1
SUBTOTAL	0	0			0	0	1
WMZ TOTAL	8	8(3)			0	0	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 2011/2012 and documented mortalities occurring from 1/1 – 1/15/12; represents end of year (2011) data.

[c] Number in parentheses indicates known pup mortality; pup mortalities tallied in the appropriate row/column in DOCUMENTED MORTALITY in Table 11. Pups documented via mortality whose pack association could not be definitively assigned were designated as Unknown in DOCUMENTED PACK column, and were not counted towards the zone reproduction total to avoid potential double-counting.

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

[e] Includes wolves captured for monitoring purposes during 2011. Most, but not all, were radiocollared.

[f] Radiocollared wolves that became missing in 2011.

[g] Border packs officially tallied to (STATE); territory known/likely shared with Idaho. Data on these packs can be found in Rocky Mountain Wolf Recovery 2011 Annual Report or other source.

Table 11. End of year summary of documented wolf mortality and wolf-caused livestock depredations by GMU within the Selway Wolf Management Zone, 2011.

GMU	Documented mortality					Confirmed (probable) wolf-caused livestock losses			
	Natural	Control[a]	Harvest	Other human[b]	Unknown[c]	Cattle	Sheep	Dogs	Other
16A	0	0	2	0	0	0	0	0	0
17	0	0	5	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0
20	0	0	4	0	0	0	0	0	0
WMZ TOTAL	0	0	11	0	0	0	0	0	0

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

Pack Summaries

Documented Resident Packs

Gospel Hump

- Retroactively reinstated back to 2010 due to re-verification of pack persistence and used to revise the 2010 population estimate
- Minimum pack estimate of 4 wolves at end of 2011

Jersey Creek

- Reproduction surveys conducted but not successful at verifying pups
- No estimate of pack size was obtained

Magruder

- Reproduction surveys conducted but not successful at verifying pups
- No estimate of pack size was obtained

Selway

- Retroactively reinstated back to 2010 due to re-verification of pack persistence and used to revise the 2010 population estimate
- Minimum pack estimate of 4 wolves at end of 2011

Documented Non-Resident Border Packs

Watchtower (MT)

- This documented border pack was tallied for Montana in 2011

For more detailed information on border packs counted by other states, please see annual reports for the respective state (Montana: Bradley et al. 2012; Washington: http://wdfw.wa.gov/conservation/gray_wolf/); Wyoming: Jimenez et al. 2012).

Other Documented Wolf Groups

B356

- Missing since April 2011
- No minimum estimate of group size was obtained

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 increase road densities in the 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).

Monitoring Summary

The McCall-Weiser Zone was occupied by 12 documented packs, 1 suspected pack, and 3 other documented groups during 2011 (Figure 15; Table 12). One documented group was removed due to mortality via lethal control. One pack was newly discovered and added as a documented pack in 2011. One new suspected pack was identified through confirmed and probable depredation incidents and hunter observations.

Seven documented packs produced litters, and 5 qualified as breeding pairs (Table 12). The reproductive status of 5 packs was unknown. Two juvenile wolves were harvested whose pack association could not be definitively assigned, and were not counted toward the zone pup reproduction total to avoid potential double counting.

No radiocollared wolves were known to have dispersed in 2011. Three wolves from 2 packs were captured in 2011.

Documented mortalities (n = 34) included harvest (n = 17), control (agency removal and legal take; n = 11), other human (n = 5), and unknown (n = 1) causes (Table 13).

Confirmed (n = 19) and probable (n = 6) wolf-caused cattle losses were attributed to 3 packs and unknown wolves (Table 13). Confirmed (n = 22) and probable (n = 1) wolf-caused domestic sheep losses were attributed to 1 other documented group and unknown wolves (Table 13). A probable (n = 1) wolf-caused loss of 1 mule was attributed to 1 pack.

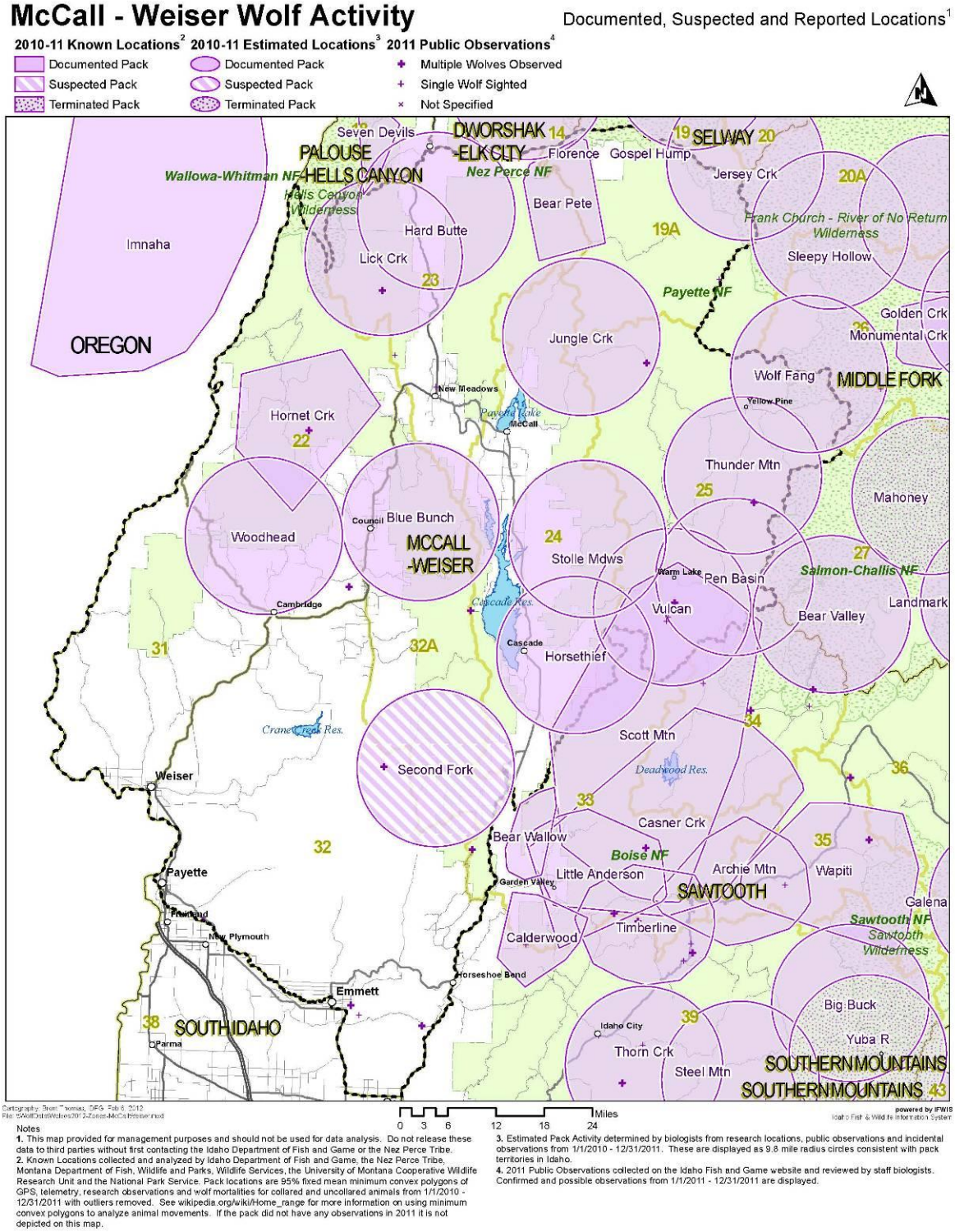

Figure 15. Distribution of documented and suspected wolf packs in the McCall-Weiser Wolf Management Zone, 2011.

Table 12. End of year summary of minimum number of wolves detected, reproductive status, dispersal, and monitoring status for documented and suspected wolf packs and other documented wolf groups within the McCall-Weiser Wolf Management Zone, 2011.

WOLF GROUP[a]	Min. no. wolves detected[b]	Reproductive status			Known dispersal	Monitoring status	
		Min. no. pups prod.(died)[c]	Reported as			No. wolf captures[e]	No. wolves missing[f]
			Reprod. pack	Breeding pair[d]			
DOCUMENTED PACK							
Bear Pete	4	3	YES	YES	0	0	0
Blue Bunch	?	?	?	NO	0	0	0
Hard Butte	?	?	?	NO	0	0	0
Hornet Creek	5	6(1)	YES	YES	0	1	1
Horsethief	?	?	?	NO	0	0	0
Jungle Creek	?	?	?	NO	0	0	0
Lick Creek	?	1(1)	YES	NO	0	0	0
Pen Basin	4	4	YES	YES	0	0	0
Stolle Meadows	?	?	?	NO	0	0	0
Thunder Mountain	12	3(1)	YES	YES	0	2	0
Vulcan	4	4(1)	YES	YES	0	0	0
Woodhead	?	4(3)	YES	NO	0	0	0
Unknown		2(2)					
SUBTOTAL	29	25(9)			0	3	1
SUSPECTED PACK							
Second Fork	?	?			0	0	0
SUBTOTAL	0	0			0	0	0
OTHER DOC. GROUP							
~~B429~~	?	0			0	0	0
B478	1	0			0	0	0
OR-9	1	0			0	0	0
SUBTOTAL	2	0			0	0	0
WMZ TOTAL	31	25(9)			0	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 2011/2012 and documented mortalities occurring from 1/1 - 1/15/12; represents end of year (2011) data.

[c] Number in parentheses indicates known pup mortality; pup mortalities tallied in the appropriate row/column in DOCUMENTED MORTALITY in Table 13. Pups documented via mortality whose pack association could not be definitively assigned were designated as Unknown in DOCUMENTED PACK column, and were not counted towards the zone reproduction total to avoid potential double-counting.

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

[e] Includes wolves captured for monitoring purposes during 2011. Most, but not all, were radiocollared.

[f] Radiocollared wolves that became missing in 2011.

Table 13. End of year summary of documented wolf mortality and wolf-caused livestock depredations by GMU within the McCall-Weiser Wolf Management Zone, 2011.

GMU	Documented mortality					Confirmed (probable) wolf-caused livestock losses			
	Natural	Control[a]	Harvest	Other human[b]	Unknown[c]	Cattle	Sheep	Dogs	Other
19A	0	1	2	0	0	0	0	0	0
22	0	5	1	3	0	7(5)	0	0	0
23	0	1	6	1	0	0	12(1)	0	0(1)[d]
24	0	3	1	0	0	5	10	0	0
25	0	0	4	1	1	0	0	0	0
31	0	0	0	0	0	3	0	0	0
32	0	1	0	0	0	2(1)	0	0	0
32A	0	0	3	0	0	2	0	0	0
WMZ TOTAL	0	11	17	5	1	19(6)	22(1)	0	0(1)

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

Pack Summaries

Documented Resident Packs

Bear Pete

- One probable mule depredation
- One wolf lethally controlled (legal take)
- Minimum pack estimate of 4 wolves at end of 2011

Blue Bunch

- Reproduction surveys conducted but not successful at verifying pups
- No estimate of pack size was obtained

Hard Butte

- Reproduction surveys conducted but not successful at verifying pups
- No estimate of pack size was obtained

Hornet Creek

- Five confirmed cattle (calf) and 2 probable cattle (calf) depredations
- One wolf lethally controlled (WS)
- Pack count (incomplete) of 5 wolves at end of 2011

Horsethief

- Five confirmed cattle (yearling) depredations
- One wolf lethally controlled (WS)
- Reproduction surveys conducted but not successful at verifying pups
- No estimate of pack size was obtained

Jungle Creek

- Reproduction surveys conducted but not successful at verifying pups
- No estimate of pack size was obtained

Lick Creek

- Reproduction verified via hunter harvest of juvenile wolf in Palouse-Hells Canyon Zone
- No estimate of pack size was obtained

Pen Basin

- Minimum pack estimate of 4 wolves at end of 2011

Stolle Meadows

- Reproduction surveys conducted but not successful at verifying pups
- No estimate of pack size was obtained

Thunder Mountain

- Pack count (complete) of 12 wolves at end of 2011

Vulcan

- New documented pack for 2011
- Minimum pack estimate of 4 wolves at end of 2011

Woodhead

- Five confirmed cattle (calf) and 3 probable cattle (1 calf, 2 cows) depredations
- Four wolves lethally controlled (legal take)
- No estimate of pack size was obtained

<u>Suspected Resident Packs</u>

Second Fork

- Three confirmed cattle (2 calves, 1 yearling heifer) depredations
- New suspected pack for 2011 based on depredation incidents and hunter observations
- No field effort expended for capture or reproductive surveys
- No estimate of pack size was obtained

<u>Other Documented Wolf Groups</u>

B429

- Ten confirmed sheep (6 lamb, 4 ewe) depredations
- B429 lethally controlled (WS)
- Group no longer considered extant at end 2011 due to mortality

B478

- Group count (complete) of 1 at end of 2011

OR-9

- Dispersed into Idaho from Oregon's Imnaha pack
- Minimum group estimate of 1 at end 2011

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 8 documented resident wolf packs and 1 documented group during 2011, but 1 pack was no longer considered extant at year's end (Figure 16, Table 14). One documented pack was retroactively reinstated in 2011 after being removed in 2010 due to lack of verification of activity.

Three documented packs produced litters, and 1 met breeding pair criteria (Table 14). Two juvenile wolves were harvested whose pack association could not be definitively assigned, and were not counted toward the zone pup reproduction total to avoid potential double counting.

No radiocollared wolves were known to have dispersed in 2011, and no wolves were captured.

Documented mortalities (n = 28) were attributed to harvest (n = 27) and unknown causes (n = 1; Table 15).

This predominantly wilderness zone contains few domestic livestock and no losses were reported (Table 15).

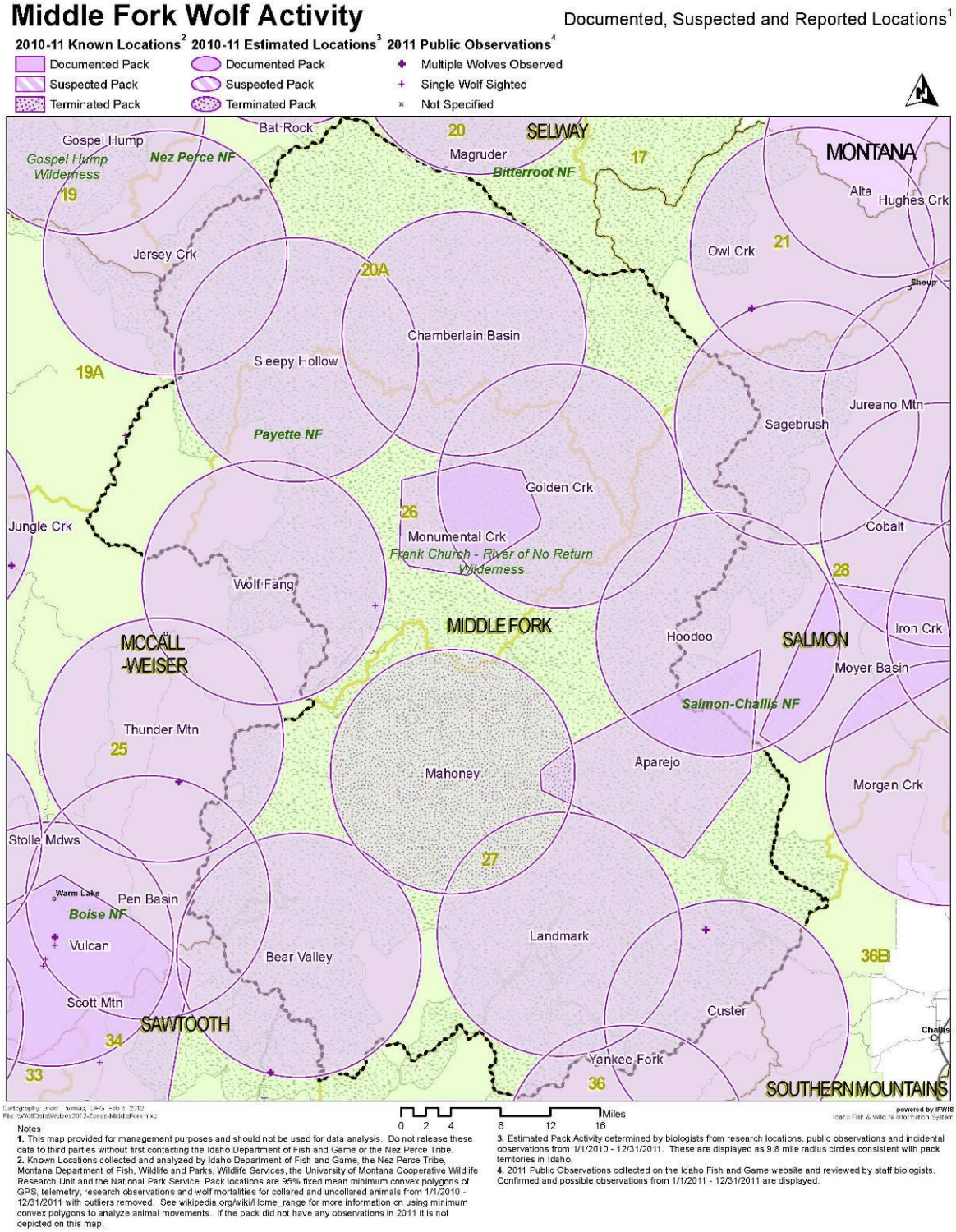

Figure 16. Distribution of documented and suspected wolf packs in the Middle Fork Wolf Management Zone, 2011.

Table 14. End of year summary of minimum number of wolves detected, reproductive status, dispersal, and monitoring status for documented and suspected wolf packs and other documented wolf groups within the Middle Fork Wolf Management Zone, 2011.

WOLF GROUP[a]	Min. no. wolves detected[b]	Reproductive status			Known dispersal	Monitoring status	
		Min. no. pups prod.(died)[c]	Reported as			No. wolf captures[e]	No. wolves missing[f]
			Reprod. pack	Breeding pair[d]			
DOCUMENTED PACK							
Aparejo	3	?	?	NO	0	0	1
Chamberlain Basin	?	1(1)	YES	NO	0	0	0
Golden Creek	?	?	?	NO	0	0	0
Landmark	6	6	YES	YES	0	0	0
~~Mahoney~~	0	?	?	NO	0	0	0
Monumental Creek	?	3(3)	YES	NO	0	0	0
Sleepy Hollow	?	?	?	NO	0	0	0
Wolf Fang	?	?	?	NO	0	0	0
Unknown		2(2)					
SUBTOTAL	9	10(6)			0	0	1
SUSPECTED PACK							
SUBTOTAL	0	0			0	0	0
OTHER DOC. GROUP							
B332	1						
SUBTOTAL	1	0			0	0	0
WMZ TOTAL	10	10(6)			0	0	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 2011/2012 and documented mortalities occurring from 1/1 – 1/15/12; represents end of year (2011) data.

[c] Number in parentheses indicates known pup mortality; pup mortalities tallied in the appropriate row/column in DOCUMENTED MORTALITY in Table 15. Pups documented via mortality whose pack association could not be definitively assigned were designated as Unknown in DOCUMENTED PACK column, and were not counted towards the zone reproduction total to avoid potential double-counting.

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

[e] Includes wolves captured for monitoring purposes during 2011. Most, but not all, were radiocollared.

[f] Radiocollared wolves that became missing in 2011.

Table 15. End of year summary of documented wolf mortality and wolf-caused livestock depredations by GMU within the Middle Fork Wolf Management Zone, 2011.

GMU	Documented mortality					Confirmed (probable) wolf-caused livestock losses			
	Natural	Control[a]	Harvest	Other human[b]	Unknown[c]	Cattle	Sheep	Dogs	Other
20A	0	0	6	0	0	0	0	0	0
26	0	0	10	0	0	0	0	0	0
27	0	0	11	0	1	0	0	0	0
WMZ TOTAL	0	0	27	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.

Pack Summaries

Documented Resident Packs

Aparejo

- Pack count (complete) of 3 wolves at end of 2011

Chamberlain Basin

- Retroactively reinstated back to 2010 due to re-verification of pack persistence and used to revise the 2010 population estimate
- Reproduction verified via harvest of juvenile wolf
- No estimate of pack size was obtained

Golden Creek

- No estimate of pack size was obtained

Landmark

- Dispersed wolf observed with pack in January during IDFG big game aerial survey
- Pack count (complete) of 6 wolves at end of 2011

Mahoney

- Suspected breeding male B332 observed alone all of December 2011, presumably due to hunting harvest causing pack fragmentation
- No longer considered extant pack due to presence of only 1 wolf

Monumental Creek

- Reproduction verified via hunter harvests of juvenile wolves (n = 3)
- No estimate of pack size was obtained

Sleepy Hollow

- No estimate of pack size was obtained

Wolf Fang

- Reproduction surveys conducted but not successful at verifying pups
- No estimate of pack size was obtained

<u>Other Documented Wolf Groups</u>

B332

- See Mahoney

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 (*Artemisia* spp.) 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 2011 (Figure 17, Table 16). Three new documented packs were added in 2011, and for 2 of these, reproduction was verified via hunting harvest of juvenile wolves. One pack was reinstated as a documented pack in 2011 after having been removed in 2010 due to lack of verification of activity. Three border packs were claimed by Montana.

Nine documented resident and documented resident border packs produced litters, 4 of which qualified as breeding pairs (Table 16). One juvenile wolf was harvested whose pack association could not be definitively assigned, and was not counted toward the zone pup reproduction total to avoid potential double counting. The reproductive status of the remaining 3 packs was unknown.

Three radiocollared wolves dispersed in 2011. No wolves were captured in this zone in 2011.

Documented mortalities within the Salmon Zone (n = 30; Table 17) were attributed to harvest (n = 19), control (agency removal and legal take; n = 5), unknown (n = 5), and other-human (n = 1) causes.

Confirmed (n = 8) and probable (n = 2) wolf-caused cattle losses were attributed to 4 packs (Table 17). Two horses were confirmed killed by 2 different packs, one of which was also implicated in confirmed and probable cattle depredations (Table 17).

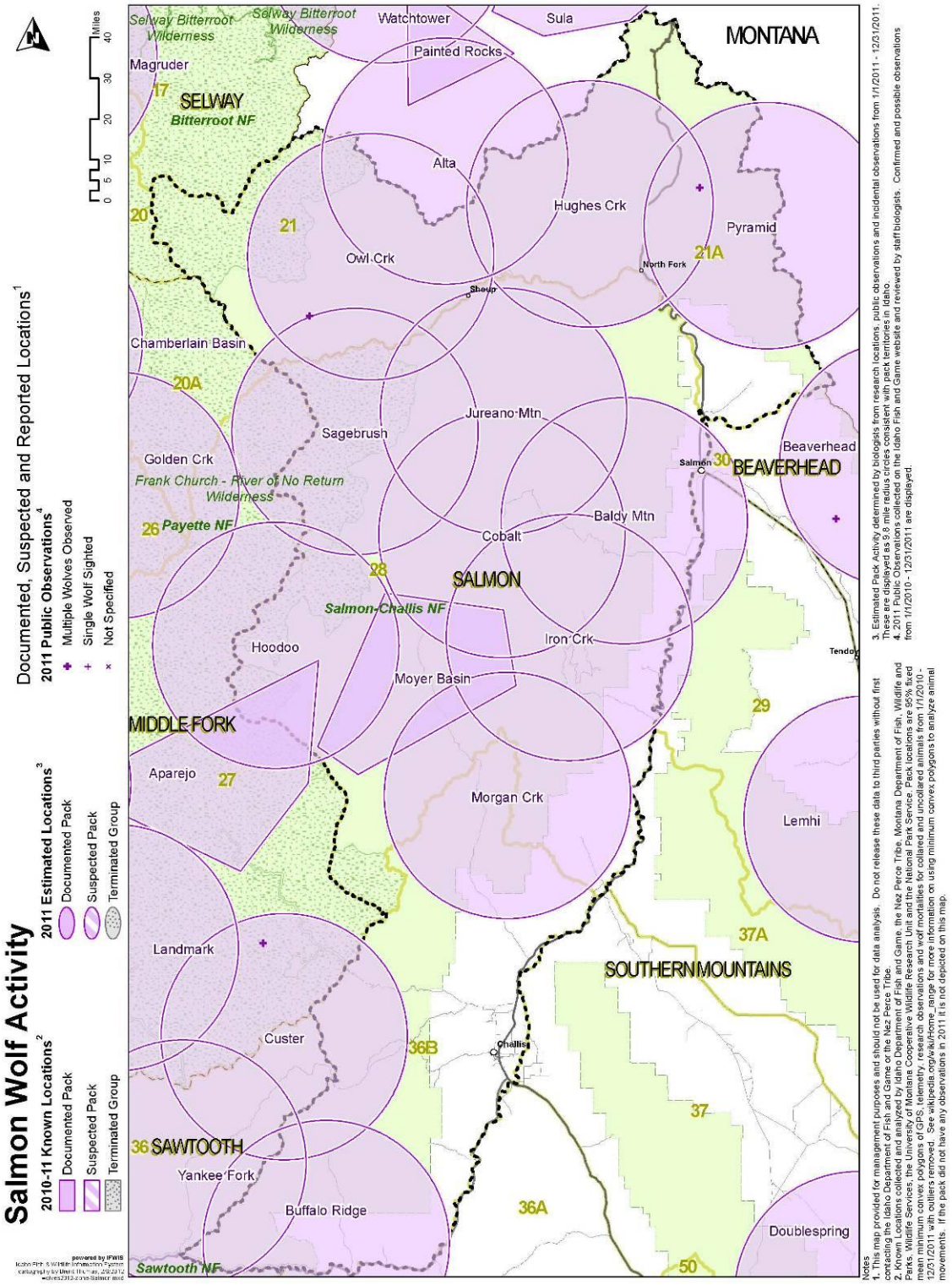

Figure 17. Distribution of documented and suspected wolf packs in the Salmon Wolf Management Zone, 2011.

Table 16. End of year summary of minimum number of wolves detected, reproductive status, dispersal, and monitoring status for documented and suspected wolf packs and other documented wolf groups within the Salmon Wolf Management Zone, 2011.

WOLF GROUP[a]	Min. no. wolves detected[b]	Reproductive status			Known dispersal	Monitoring status	
		Min. no. pups prod.(died)[c]	Reported as			No. wolf captures[e]	No. wolves missing[f]
			Reprod. pack	Breeding pair[d]			
DOCUMENTED PACK							
Alta (MT)[g]							
Baldy Mountain	4	3(1)	YES	YES	0	0	0
Buffalo Ridge	4	4	YES	YES	0	0	0
Cobalt	?	?	?	NO	0	0	0
Hoodoo	2	1	YES	NO	0	0	0
Hughes Creek (ID)[g]	4	2	YES	YES	0	0	0
Iron Creek	?	1(1)	YES	NO	0	0	0
Jureano Mountain	?	1	YES	NO	1	0	0
Morgan Creek	?	?	?	NO	0	0	0
Moyer Basin	4	6(1)	YES	YES	2	0	0
Owl Creek	?	?	?	NO	0	0	0
Painted Rocks (MT)[g]							
Pyramid (ID)[g]	2	2(1)	YES	NO	0	0	0
Sagebrush	?	2(2)	YES	NO	0	0	0
Sula (MT)[g]							
Unknown		1(1)					
SUBTOTAL	20	22(6)			3	0	0
SUSPECTED PACK							
SUBTOTAL	0	0			0	0	0
OTHER DOC. GROUP							
SUBTOTAL	0	0			0	0	0
WMZ TOTAL	20	22(6)			3	0	0

[a] Documented packs = territorial groups of wolves usually consisting of an adult male and female and their offspring from one or more generations, and has the potential to reproduce (2 adults of opposite sex). Suspected packs = geographic areas where wolf pack presence was suspected but not verified, or where wolf presence was verified but did not meet documented pack status. Other documented group = verified groups not meeting either documented or suspected pack status (e.g., lone wolves, potential mated pairs, etc.).

[b] Number of wolves detected by wolf program personnel from field observations throughout the year, monitoring flights conducted during winter 2011/2012 and documented mortalities occurring from 1/1 – 1/15/12; represents end of year (2011) data.

[c] Number in parentheses indicates known pup mortality; pup mortalities tallied in the appropriate row/column in DOCUMENTED MORTALITY in Table 17. Pups documented via mortality whose pack association could not be definitively assigned were designated as Unknown in DOCUMENTED PACK column, and were not counted towards the zone reproduction total to avoid potential double-counting.

[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 16. Continued.

[e] Includes wolves captured for monitoring purposes during 2011. Most, but not all, were radiocollared.
[f] Radiocollared wolves that became missing in 2011.
[g] Border packs officially tallied to (STATE); territory known/likely shared with Idaho. Data on these packs can be found in Rocky Mountain Wolf Recovery 2011 Annual Report or other source.

Table 17. End of year summary of documented wolf mortality and wolf-caused livestock depredations by GMU within the Salmon Wolf Management Zone, 2011.

GMU	Documented mortality					Confirmed (probable) wolf-caused livestock losses			
	Natural	Control[a]	Harvest	Other human[b]	Unknown[c]	Cattle	Sheep	Dogs	Other
21	0	0	2	0	0	0	0	0	0
21A	0	0	1	0	0	0	0	0	0
28	0	5	14	1	2	5(2)	0	0	1[d]
36B	0	0	2	0	3	3	0	0	1[d]
WMZ TOTAL	0	5	19	1	5	8(2)	0	0	2

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

Pack Summaries

Documented Resident Packs

Baldy Mountain

- One confirmed cattle (calf) and 1 probable cattle (calf) depredations
- Three wolves lethally controlled (2 WS, 1 legal take)
- Minimum pack estimate of 4 wolves at end of 2011

Buffalo Ridge

- Three confirmed cattle (calf) depredations
- Minimum pack estimate of 4 wolves at end of 2011

Cobalt

- New documented pack for 2011
- Formed from dispersal or pack splitting of Jureano Mountain pack by wolf B486
- No estimate of pack size was obtained

Hoodoo

- Minimum 1 pup verified from rendezvous site scat surveys
- Pack count (incomplete) of 2 wolves at end of 2011

Iron Creek

- Two confirmed cattle (1 calf, 1 cow) depredations
- One wolf lethally controlled (WS)
- Reproduction verified from hunter harvest of juvenile wolf
- No estimate of pack size was obtained

Jureano Mountain

- Minimum 1 pup verified from rendezvous site scat surveys
- No estimate of pack size was obtained

Morgan Creek

- One confirmed horse depredation
- No estimate of pack size was obtained

Moyer Basin

- One confirmed cattle (calf) depredation
- Minimum pack estimate of 4 wolves at end of 2011

Owl Creek

- Observation of 4 wolves during IDFG big game surveys in January verified continued presence of this pack
- Retroactively reinstated back to 2010 due to re-verification of pack persistence and used to revise the 2010 population estimate
- No estimate of pack size was obtained

Sagebrush

- New reproductive pack for 2011, verified from hunter harvests of juvenile wolves (n = 2)
- No estimate of pack size was obtained

<u>Documented Resident Border Packs</u>

Hughes Creek

- Minimum of 2 pups verified via howling
- Minimum pack estimate of 4 wolves at end of 2011

Pyramid

- New documented pack for 2011, reproduction verified via hunter harvest of juvenile wolf
- Pack count (incomplete) of 2 wolves at end of 2011

<u>Documented Non-Resident Border Packs</u>

Alta (MT)

- This documented border pack was tallied for Montana in 2011

Painted Rocks (MT)

- This documented border pack was tallied for Montana in 2011

Sula (MT)

- This documented border pack was tallied for Montana in 2011

For more detailed information on border packs counted by other states, please see annual reports for the respective state (Montana: Bradley et al. 2012; Washington: http://wdfw.wa.gov/conservation/gray_wolf/); Wyoming: Jimenez et al. 2012).

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

Background

The Sawtooth Zone is comprised of 2 elk management units: 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 16 documented resident packs during 2011, 2 suspected resident packs, and 1 other documented group (Figure 18, Table 18). One documented pack and 1 suspected pack were no longer considered extant at year's end due to lack of verification of wolf activity for the previous 2 years. One new resident pack was documented in 2011 (reproduction was confirmed by the detection of a minimum of 2 pups via a trail camera). One new suspected pack was identified via confirmed and probable depredations, and wolves removed through control actions.

Twelve packs were known to have produced litters of pups and seven were counted as breeding pairs (Table 18). The reproductive status of 4 packs was unknown.

Eighteen wolves from 8 packs were captured in 2011. Fourteen new wolves were radiocollared and collars on 3 other wolves were replaced. Six wolves dispersed from the packs from which they were originally captured.

Documented mortalities (n = 42) included control (agency removal and legal take; n = 17), harvest (n = 14), other-human caused (n = 7), natural (n = 2), and unknown (n = 2) causes (Table 19).

Confirmed (n = 1) wolf-caused cattle losses were attributed to 1 documented group (Table 19). Confirmed (n = 24) and probable (n = 7) wolf-caused domestic sheep losses were attributed to 4 packs and unknown wolf groups (Table 19); losses attributed to 1 Sawtooth Zone pack occurred in the Southern Mountains Zone.

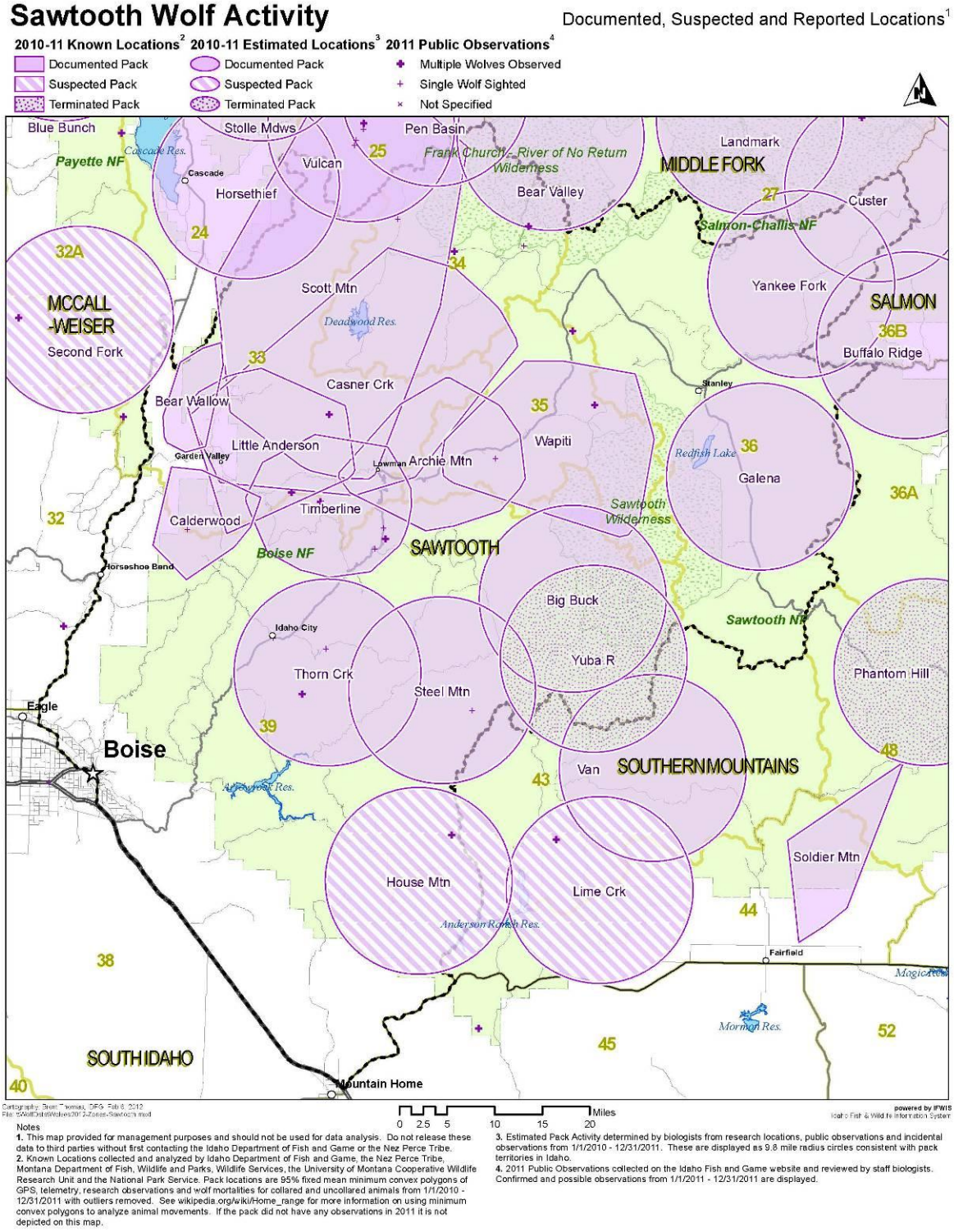

Figure 18. Distribution of documented and suspected wolf packs in the Sawtooth Wolf Management Zone, 2011.

Table 18. End of year summary of minimum number of wolves detected, reproductive status, dispersal, and monitoring status for documented and suspected wolf packs and other documented wolf groups within the Sawtooth Wolf Management Zone, 2011.

WOLF GROUP[a]	Min. no. wolves detected[b]	Reproductive status			Known dispersal	Monitoring status	
		Min. no. pups prod.(died)[c]	Reported as			No. wolf captures[e]	No. wolves missing[f]
			Reprod. pack	Breeding pair[d]			
DOCUMENTED PACK							
Archie Mountain	2	?	NO	NO	1	4	0
Bear Valley	6	2	YES	YES	0	1	0
Bear Wallow	4	3	YES	YES	0	0	0
Big Buck	7	2(2)	YES	NO	0	1	0
Calderwood	4	3(1)	YES	YES	0	0	0
Casner Creek	?	?	NO	NO	1	3	0
Custer	4	2	YES	YES	0	0	0
Galena	?	?	?	NO	0	0	0
Little Anderson	2	1	YES	NO	0	1	0
Scott Mountain	4	2	YES	YES	2	1	0
Steel Mountain	?	2(2)	YES	NO	0	0	0
Thorn Creek	4	2(1)	YES	NO	0	0	0
Timberline	5	4	YES	YES	1	5	0
Wapiti	7	4(1)	YES	YES	1	2	0
Yankee Fork	?	1	YES	NO	0	0	0
~~Yuba River~~	0	?	?	NO	0	0	0
SUBTOTAL	49	28(7)			6	18	0
SUSPECTED PACK							
House Mountain	?	0			0	0	0
~~Lost~~	0	0			0	0	0
SUBTOTAL	0	0			0	0	0
OTHER DOC. GROUP							
B450	2	0			0	0	0
SUBTOTAL	2	0			0	0	0
WMZ TOTAL	51	28(7)			6	18	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 2011/2012 and documented mortalities occurring from 1/1 – 1/15/12; represents end of year (2011) data.

[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…".

[e] Includes wolves captured for monitoring purposes during 2011. Most, but not all, were radiocollared.

[f] Radiocollared wolves that became missing in 2011.

Table 19. End of year summary of documented wolf mortality and wolf-caused livestock depredations by GMU within the Sawtooth Wolf Management Zone, 2011.

GMU	Documented mortality					Confirmed (probable) wolf-caused livestock losses			
	Natural	Control[a]	Harvest	Other human[b]	Unknown[c]	Cattle	Sheep	Dogs	Other
33	0	3	1	1	2	0	2(3)	1	0
34	0	0	3	0	0	0	0	0	0
35	2	0	5	1	0	0	0	0	0
36	0	0	2	2	0	1	3(2)	0	0
39	0	14	3	3	0	0	19(2)	0	0
WMZ TOTAL	2	17	14	7	2	1	24(7)	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.

Pack Summaries

Documented Resident Packs

Archie Mountain

- Reproduction surveys conducted and no evidence of reproduction detected
- Pack count (incomplete) of 2 wolves at end of 2011

Bear Valley

- Minimum of 2 pups verified by howling
- Pack count (complete) of 6 wolves at end of 2011

Bear Wallow

- Two confirmed sheep (2 lambs), 3 probable sheep (1 lamb, 2 ewes) depredations
- One confirmed herding dog depredation
- Three wolves lethally controlled (WS)
- Minimum of 3 pups verified by howling (visual 2)
- Pack count (complete) of 4 wolves at end of 2011

Big Buck

- Minimum of 2 pups verified by howling
- Pack count (complete) of 7 wolves at end of 2011

Calderwood

- Minimum pack estimate of 4 wolves at end of 2011

Casner Creek

- Reproduction surveys conducted and no evidence of reproduction detected
- No estimate of pack size was obtained

Custer

- New documented pack for 2011
- Reproduction verified by detection of minimum of 2 pups via trail camera
- Minimum pack estimate of 4 wolves at end of 2011

Galena

- One probable sheep (ewe) depredation
- Reproduction surveys conducted but not successful at identifying pups
- No estimate of pack size was obtained

Little Anderson

- Dispersed radiocollared wolf from Archie Mountain pack observed with pack during rendezvous site scat surveys
- Pack count (incomplete) of 2 wolves at end of 2011

Scott Mountain

- Minimum of 2 pups verified by howling
- Minimum pack estimate of 4 wolves at end of 2011

Steel Mountain

- Four confirmed sheep (2 lambs, 2 ewes) depredations (in Southern Mountains Zone)
- Four wolves lethally controlled (WS)
- Reproduction verified by lethal control of 2 pups
- No estimate of pack size was obtained

Thorn Creek

- Three confirmed sheep (ewe) depredations
- Two wolves lethally controlled (WS)
- Reproduction verified by lethal control of 1 pup, and detection of 1 additional pup by trail camera
- Pack count (complete) of 4 wolves at end of 2011

Timberline

- Three confirmed sheep (2 lambs, 1 ewe) depredations
- One wolf lethally controlled (WS)
- Minimum of 4 pups verified by howling
- Pack count (complete) of 5 wolves at end of 2011

Wapiti

- Pack count (complete) of 7 wolves at end of 2011

Yankee Fork

- No estimate of pack size was obtained

Yuba River

- No longer considered extant pack at end of 2011 due to lack of documentation
- 2010 depredations and activity attributed to neighboring packs

Suspected Resident Packs

House Mountain

- Five confirmed sheep (lamb), 2 probable sheep (lamb) depredations
- Four wolves lethally controlled (2 legal take, 2 WS)
- New suspected pack for 2011
- No field effort expended for capture or reproductive surveys

Lost

- No longer considered extant at end of 2011 due to lack of activity

Other Documented Wolf Groups

B450

- One confirmed cattle (cow) depredation
- Group count (complete) of 2 wolves at end of 2011

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

Background

The Southern Mountains Zone is comprised of 4 elk management units: The Smoky Mountains, Pioneer, Lemhi, and Beaverhead. 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 7 documented resident packs, 2 suspected packs, and 2 other documented groups during 2011 (Figure 19, Table 20). One documented resident pack and 1 suspected pack were no longer considered extant at year's end due to the lack of verification of wolf activity for the previous 2 years. One other documented group was no longer considered extant at year's end due to mortality. One pack was newly documented in 2011 based on multiple harvests from a single drainage, but was subsequently considered eliminated as only one wolf was assumed to remain. One new suspected pack was identified in 2011 via confirmed and probable depredations.

Four documented resident packs produced litters, 2 of which qualified as breeding pairs in 2011 (Table 20).

No radiocollared wolves were known to have dispersed in 2011, and no wolves were captured.

Documented mortalities (n = 31) included control (agency removal and legal take; n = 12), harvest (n = 18), and other-human causes (n = 1; Table 21).

Confirmed (n = 32) and probable (n = 7) wolf-caused cattle losses were attributed to 5 packs, as well as unknown wolves (Table 21). Confirmed (n = 41) and probable (n = 9) wolf-caused domestic sheep losses were attributed to 5 packs (including 1 pack from an adjacent zone), 1 suspected pack, as well as unknown wolves (Table 21). Three confirmed and 1 probable dog deaths were recorded in this zone. Additionally, 2 domestic bison were confirmed killed.

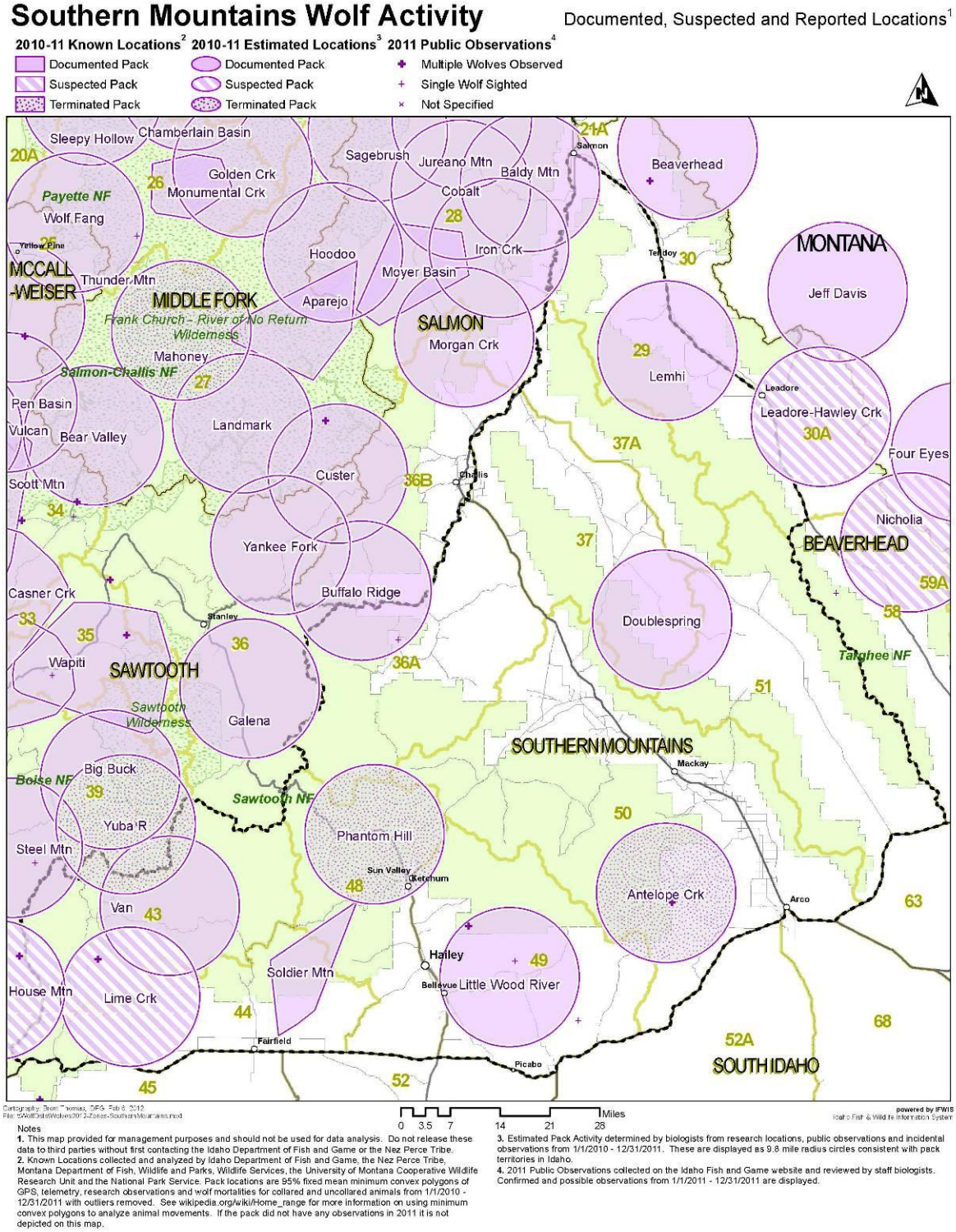

Figure 19. Distribution of documented and suspected wolf packs in the Southern Mountains Wolf Management Zone, 2011.

Table 20. End of year summary of minimum number of wolves detected, reproductive status, dispersal, and monitoring status for documented and suspected wolf packs and other documented wolf groups within the Southern Mountains Wolf Management Zone, 2011.

WOLF GROUP[a]	Min. no. wolves detected[b]	Reproductive status			Known dispersal	Monitoring status	
		Min. no. pups prod.(died)[c]	Reported as			No. wolf captures[e]	No. wolves missing[f]
			Reprod. pack	Breeding pair[d]			
DOCUMENTED PACK							
~~Antelope Creek~~	0	?	?	NO	0	0	0
Doublespring	?	?	?	NO	0	0	0
Lemhi	?	1(1)	YES	NO	0	0	0
Little Wood River	4	4	YES	YES	0	0	0
~~Phantom Hill~~	0	?	?	NO	0	0	0
Soldier Mountain	5	2	YES	YES	0	0	0
Van	?	2(2)	YES	NO	0	0	0
SUBTOTAL	9	9(3)			0	0	0
SUSPECTED PACK							
~~Leadore-Hawley Creek~~	0	0			0	0	0
Lime Creek	?	0			0	0	0
SUBTOTAL	0	0			0	0	0
OTHER DOC. GROUP							
~~B145~~	?	0			0	0	0
B512	1	0			0	0	0
SUBTOTAL	0	0			0	0	0
WMZ TOTAL	10	9(3)			0	0	0

[a] Documented packs = territorial groups of wolves usually consisting of an adult male and female and their offspring from one or more generations, and has the potential to reproduce (2 adults of opposite sex). Suspected packs = geographic areas where wolf pack presence was suspected but not verified, or where wolf presence was verified but did not meet documented pack status. Other documented group = verified groups not meeting either documented or suspected pack status (e.g., lone wolves, potential mated pairs, etc.).

[b] Number of wolves detected by wolf program personnel from field observations throughout the year, monitoring flights conducted during winter 2011/2012 and documented mortalities occurring from 1/1 – 1/15/12; represents end of year (2011) data.

[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…".

[e] Includes wolves captured for monitoring purposes during 2011. Most, but not all, were radiocollared.

[f] Radiocollared wolves that became missing in 2011.

[g] Border packs officially tallied to (STATE); territory known/likely shared with Idaho. Data on these packs can be found in Rocky Mountain Wolf Recovery 2011 Annual Report or other source.

Table 21. End of year summary of documented wolf mortality and wolf-caused livestock depredations by GMU within the Southern Mountains Wolf Management Zone, 2011.

GMU	Documented mortality					Confirmed (probable) wolf-caused livestock losses			
	Natural	Control[a]	Harvest	Other human[b]	Unknown[c]	Cattle	Sheep	Dogs	Other
29	0	2	1	1	0	9(1)	1	0	2[d]
36A	0	0	1	0	0	2	0	0	0
37	0	2	1	0	0	2	11	0	0
37A	0	0	0	0	0	0(1)	0	0	0
43	0	3	4	0	0	0	22(6)	2(1)	0
44	0	2	2	0	0	1	0(2)	0	0
48	0	0	1	0	0	2(1)	0	0	0
49	0	3	2	0	0	2(1)	2(1)	0	0
50	0	0	6	0	0	11	5	1	0
51	0	0	0	0	0	3(3)	0	0	0
WMZ TOTAL	0	12	18	1	0	32(7)	41(9)	3(1)	2

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

Pack Summaries

Documented Resident Packs

Antelope Creek

- Three confirmed cattle (1 calf, 2 cows) depredations
- New documented pack for 2011,verified from multiple harvests from a single watershed in an area disjunct from known pack territories
- Presumed extirpated by end of year

Doublespring

- Two confirmed cattle (unknown age), 1 probable cattle (calf), 11 confirmed sheep depredations
- Two wolves lethally controlled (legal take)
- No estimate of pack size was obtained

Lemhi

- Nine confirmed cattle (4 calves, 1 cow, 4 unknown age) and 1 probable cattle (cow), 1 confirmed sheep (ewe), and 2 confirmed bison (yearling bulls) depredations
- Two wolves lethally controlled (WS)
- Reproduction verified from control of juvenile wolf
- No estimate of pack size was obtained

Little Wood River

- Four confirmed cattle (3 calves, 1 unknown age) and 2 probable cattle (1 calf, 1 unknown age), 2 confirmed sheep (1 ewe, 1 lamb) and 1 probable sheep (ewe) depredations
- Three wolves lethally controlled (WS)
- Minimum pack estimate of 4 wolves at end of 2011

Phantom Hill

- Removed as documented pack due to lack of verified wolf activity in historic territory over previous 2 years

Soldier Mountain

- One confirmed cattle (steer) depredation
- One wolf lethally controlled (WS)
- Pack count (incomplete) of 5 wolves at end of 2011

Van

- Eighteen confirmed sheep (15 lambs, 3 ewes) and 6 probable sheep (4 ewes, 2 lambs), 1 confirmed and 1 probable dog depredations
- Two wolves lethally controlled (WS)
- Reproduction verified from hunter harvest of juvenile wolves (n = 2)
- No estimate of pack size was obtained

<u>Suspected Resident Packs</u>

Leadore-Hawley Creek

- No longer considered extant at end of 2011 due to lack of activity

Lime Creek

- One confirmed guard dog, and 2 probable sheep (ewes) depredations
- Six black wolves observed at depredation site
- New suspected pack for 2011
- No field effort expended for capture or reproductive surveys

<u>Other Documented Wolf Groups</u>

B145

- Dispersed or displaced from Moyer Basin pack, observed with uncollared wolf during winter pack count flight
- Non-target mortality in snare set for coyotes

B512

- Dispersed from Wapiti pack in Sawtooth Zone
- Group count (complete) of 1 at end of 2011

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

Background

This 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 2 documented resident border packs and 1 suspected pack during 2011 (Figure 20, Table 22). One new resident border pack was verified based on the harvest of a juvenile wolf. One new suspected pack was identified on the basis of a confirmed sheep depredation. One border pack attributed to Montana resided adjacent to this zone.

One documented resident border pack produced a litter, but did not satisfy 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 2011, and no wolves were captured.

Documented mortalities (n = 3) resulted from control (agency removal and legal take; n = 1), harvest (n = 1), and other-human causes (n = 1; Table 23). The harvest limit in this zone was not met by the season closure date.

Confirmed (n = 2) and probable (n = 1) wolf-caused cattle losses were attributed to 1 pack and unknown wolves (Table 23). Confirmed (n = 3) and probable (n = 3) wolf-caused domestic sheep losses were attributed to 1 pack and 1 suspected pack (Table 23). One dog was confirmed killed within this zone.

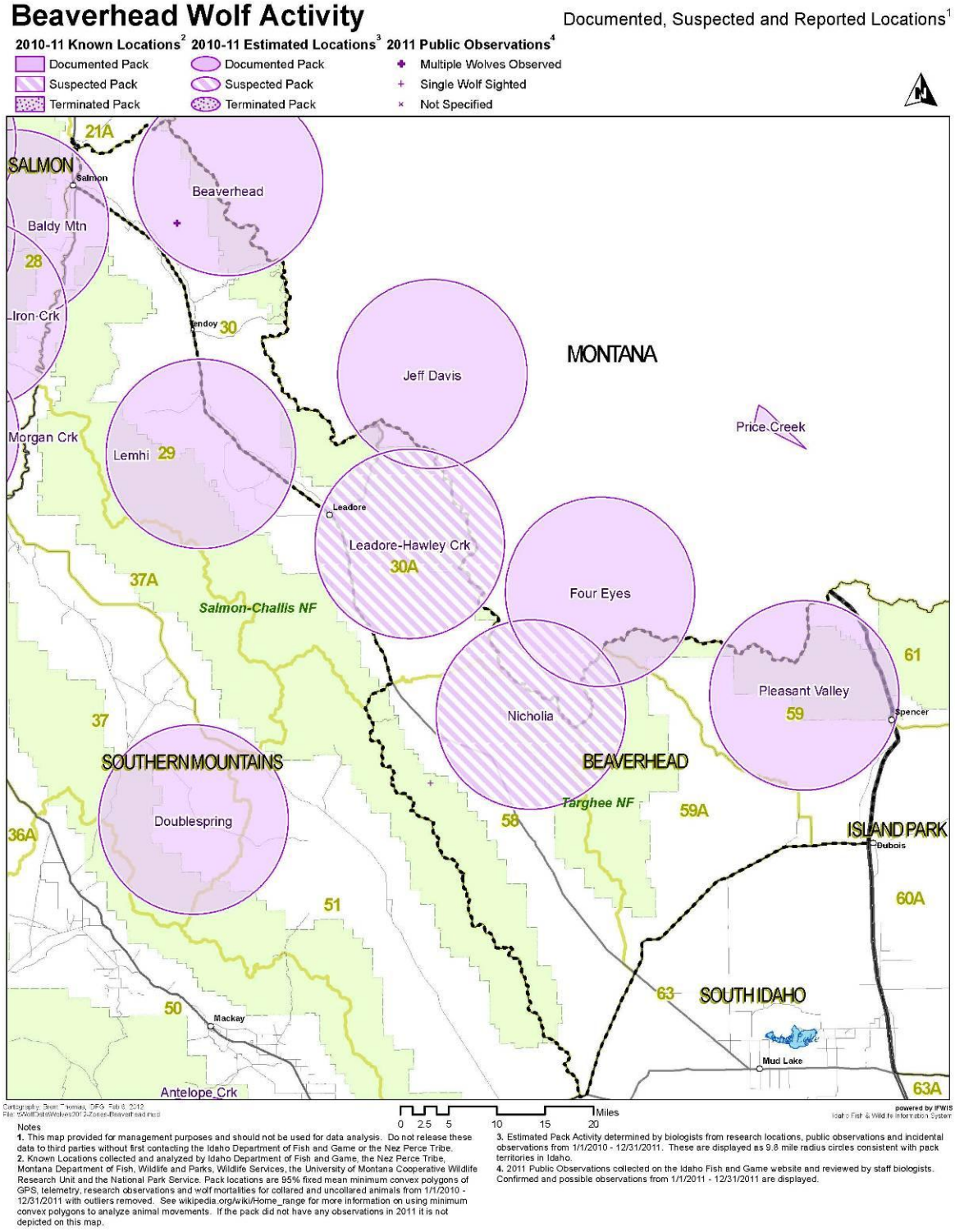

Figure 20. Distribution of documented and suspected wolf packs in the Beaverhead Wolf Management Zone, 2011.

Table 22. End of year summary of minimum number of wolves detected, reproductive status, dispersal, and monitoring status for documented and suspected wolf packs and other documented wolf groups within the Beaverhead Wolf Management Zone, 2011.

WOLF GROUP[a]	Min. no. wolves detected[b]	Reproductive status			Known dispersal	Monitoring status	
		Min. no. pups prod.(died)[c]	Reported as			No. wolf captures[e]	No. wolves missing[f]
			Reprod. pack	Breeding pair[d]			
DOCUMENTED PACK							
Beaverhead (ID)[g]	7	?	?	NO	0	0	0
Four Eyes (MT)[g]							
Pleasant Valley (ID)[g]	?	1(1)	YES	NO	0	0	0
SUBTOTAL	7	1(1)			0	0	0
SUSPECTED PACK							
Nicholia (ID)[g]	?	0			0	0	0
SUBTOTAL	0	0			0	0	0
OTHER DOC. GROUP							
SUBTOTAL	0	0			0	0	0
WMZ TOTAL	7	1(1)			0	0	0

[a] Documented packs = territorial groups of wolves usually consisting of an adult male and female and their offspring from one or more generations, and has the potential to reproduce (2 adults of opposite sex). Suspected packs = geographic areas where wolf pack presence was suspected but not verified, or where wolf presence was verified but did not meet documented pack status. Other documented group = verified groups not meeting either documented or suspected pack status (e.g., lone wolves, potential mated pairs, etc.).

[b] Number of wolves detected by wolf program personnel from field observations throughout the year, monitoring flights conducted during winter 2011/2012 and documented mortalities occurring from 1/1 – 1/15/12; represents end of year (2011) data.

[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] Includes wolves captured for monitoring purposes during 2011. Most, but not all, were radiocollared.

[f] Radiocollared wolves that became missing in 2011.

[g] Border packs officially tallied to (STATE); territory known/likely shared with Idaho. Data on these packs can be found in Rocky Mountain Wolf Recovery 2011 Annual Report or other source.

Table 23. End of year summary of documented wolf mortality and wolf-caused livestock depredations by GMU within the Beaverhead Wolf Management Zone, 2011.

GMU	Documented mortality					Confirmed (probable) wolf-caused livestock losses			
	Natural	Control[a]	Harvest	Other human[b]	Unknown[c]	Cattle	Sheep	Dogs	Other
30	0	0	0	0	0	0	0	0	0
30A	0	0	0	0	0	0(1)	0	0	0
58	0	0	0	0	0	0	0	0	0
59	0	1	1	1	0	2	3(2)	1	0
59A	0	0	0	0	0	0	0(1)	0	0
WMZ TOTAL	0	1	1	1	0	2(1)	3(3)	1	0

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

Pack Summaries

Documented Resident Border Packs

Beaverhead

- Pack count (complete) of 7 wolves at end of 2011

Pleasant Valley

- Two confirmed cattle (calves), 3 confirmed sheep (2 ewes, 1 lamb), 2 probable sheep (1 ewe, 1 lamb), and 1 confirmed dog depredations
- One wolf suspected to be associated with this pack lethally controlled (WS)
- New documented pack for 2011
- Reproduction verified via hunter harvest of juvenile wolf

Suspected Resident Border Packs

Nicholia

- New suspected pack for 2011, identified by 1 probable sheep (ewe) depredation
- No field effort expended for capture or reproductive surveys

Documented Non-Resident Border Packs

Four Eyes (MT)

- This documented border pack was tallied for Montana in 2011

For more detailed information on border packs counted by other states, please see annual reports for the respective state (Montana: Bradley et al. 2012; Washington: http://wdfw.wa.gov/conservation/gray_wolf/); Wyoming: Jimenez et al. 2012).

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

Background

The topography in this 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 (*Populus tremuloides*) associated with adequate moisture, and high-desert, shrub-steppe habitat types indicative of a drier climate. Land ownership consists of a checkerboard of state, federal, and private properties, roughly 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 and 3 documented resident border packs, 1 suspected pack, and 1 other documented group during 2011 (Figure 21, Table 24). One new suspected pack was identified in this zone in 2011. Two border packs attributed to Wyoming and 1 border pack attributed to Montana were presumed to spend some time within Idaho.

Three documented resident and documented resident border packs produced litters, 2 of which qualified as breeding pairs for 2011 (Table 24). The reproductive status for 2 packs was unknown. One pup was harvested but its pack association could not be definitively assigned, and was not counted toward the zone pup reproduction total to avoid potential double counting.

No radiocollared wolves were known to have dispersed in 2011. One wolf was captured that resulted in the placement of a new radiocollar.

Documented mortalities (n = 12) resulted from control (agency removal and legal take; n = 2) and harvest (n = 10; Table 25). The harvest limit in this zone was not met by the season closure date. Confirmed (n = 1) wolf-caused cattle losses were attributed to 1 pack (Table 25).

Confirmed (n = 31) and probable (n = 6) wolf-caused domestic sheep losses were attributed to 2 packs (Table 25). One dog and 1 horse were confirmed killed in this zone.

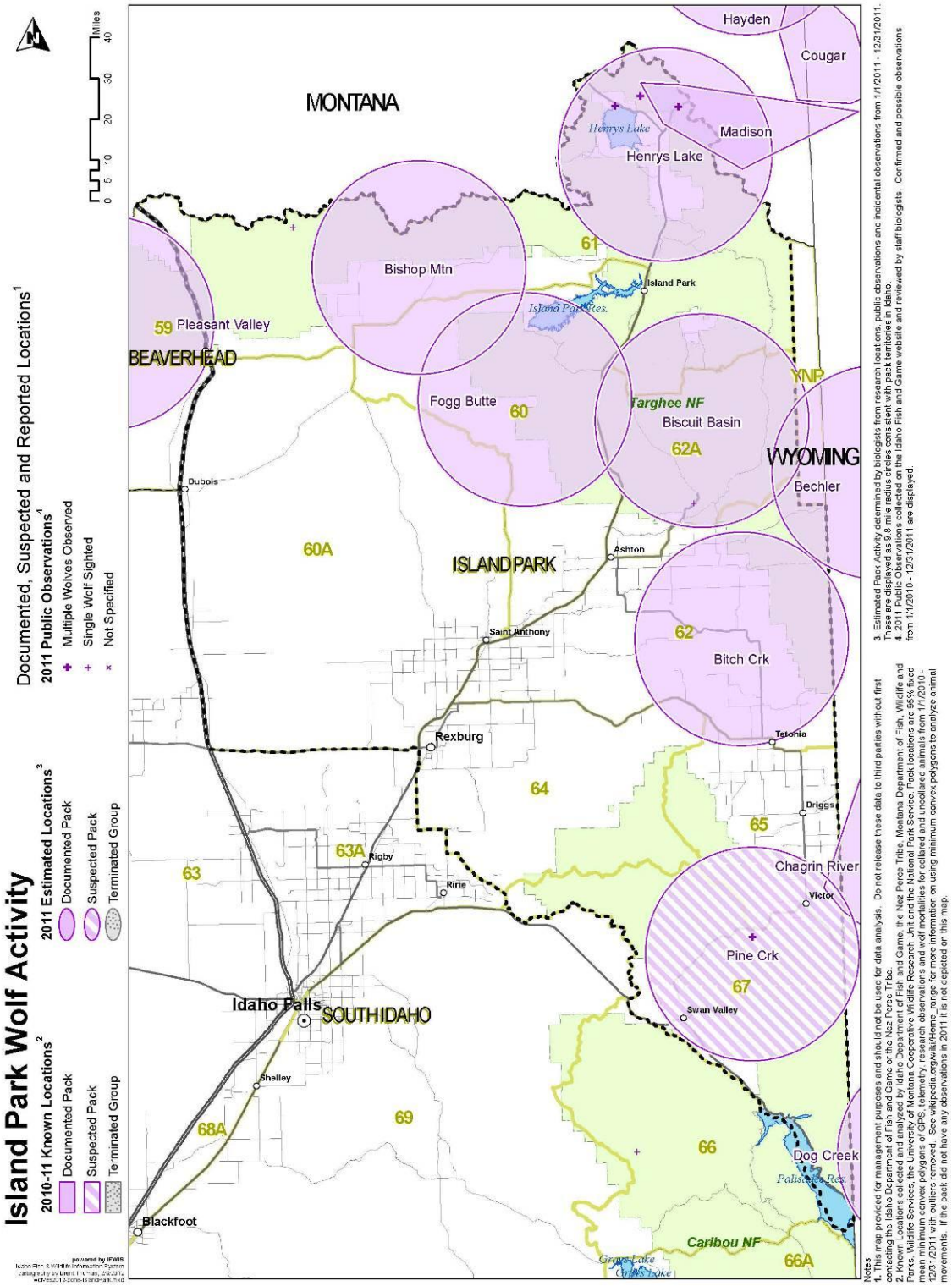

Figure 21. Distribution of documented and suspected wolf packs in the Island Park Wolf Management Zone, 2011.

Table 24. End of year summary of minimum number of wolves detected, reproductive status, dispersal, and monitoring status for documented and suspected wolf packs and other documented wolf groups within the Island Park Wolf Management Zone, 2011.

WOLF GROUP[a]	Min. no. wolves detected[b]	Reproductive status			Known dispersal	Monitoring status	
		Min. no. pups prod.(died)[c]	Reported as				
			Reprod. pack	Breeding pair[d]		No. wolf captures[e]	No. wolves missing[f]
DOCUMENTED PACK							
Bechler (WY)[g]							
Biscuit Basin	?	?	?	NO	0	0	1
Bishop Mountain (ID)[g]	?	?	?	NO	0	0	0
Bitch Creek (ID)[g]	4	2	YES	YES	0	0	0
Chagrin River (WY)[g]							
Fogg Butte	?	1(1)	YES	NO	0	0	0
Henrys Lake (ID)[g]	4	2	YES	YES	0	0	0
Madison (MT)[g]							
Unknown		1(1)			0	0	0
SUBTOTAL	8	5(1)			0	0	1
SUSPECTED PACK							
Pine Creek	?	0			0	0	0
SUBTOTAL	0	0			0	0	0
OTHER DOC. GROUP							
B524	1	0			0	1	0
SUBTOTAL	1	0			0	1	0
WMZ TOTAL	9	5(1)			0	1	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 2011/2012 and documented mortalities occurring from 1/1 – 1/15/12; represents end of year (2011) data.

[c] Number in parentheses indicates known pup mortality; pup mortalities tallied in the appropriate row/column in DOCUMENTED MORTALITY in Table 25. Pups documented via mortality whose pack association could not be definitively assigned were designated as Unknown in DOCUMENTED PACK column, and were not counted towards the zone reproduction total to avoid potential double-counting.

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

[e] Includes wolves captured for monitoring purposes during 2011. Most, but not all, were radiocollared.

[f] Radiocollared wolves that became missing in 2011.

[g] Border packs officially tallied to (STATE); territory known/likely shared with Idaho. Data on these packs can be found in Rocky Mountain Wolf Recovery 2011 Annual Report or other source.

Table 25. End of year summary of documented wolf mortality and wolf-caused livestock depredations by GMU within the Island Park Wolf Management Zone, 2011.

GMU	Documented mortality					Confirmed (probable) wolf-caused livestock losses			
	Natural	Control[a]	Harvest	Other human[b]	Unknown[c]	Cattle	Sheep	Dogs	Other
60	0	1	1	0	0	1	0	0	0
60A	0	0	0	0	0	0	0	0	0
61	0	0	6	0	0	0	0	0	0
62	0	0	3	0	0	0	0	0	1[d]
62A	0	1	0	0	0	0	6(1)	0	0
64	0	0	0	0	0	0	0	0	0
65	0	0	0	0	0	0	25(5)	1	0
67	0	0	0	0	0	0	0	0	0
WMZ TOTAL	0	2	10	0	0	1	31(6)	1	1

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

Pack Summaries

Documented Resident Packs

Biscuit Basin

- No estimate of pack size was obtained

Fogg Butte

- One confirmed cattle (calf), and 6 confirmed sheep (4 ewes, 2 lambs) and 1 probable sheep (lamb) depredations
- Two wolves lethally controlled (WS)
- Reproduction confirmed via lethal control of juvenile wolf at depredation site
- No estimate of pack size was obtained

Documented Resident Border Packs

Bishop Mountain

- No estimate of pack size was obtained

Bitch Creek

- Twenty-five confirmed sheep (ewes) and 5 probable sheep (ewes), 1 confirmed dog depredation
- Minimum pack estimate of 4 wolves at end of 2011

Henrys Lake

- Minimum pack estimate of 4 wolves at end of 2011

Documented Non-Resident Border Packs

Bechler (WY)

- This documented border pack was tallied for Wyoming in 2011

Chagrin River (WY)

- This documented border pack was tallied for Wyoming in 2011

Madison (MT)

- This documented border pack was tallied for Montana in 2011

For more detailed information on border packs counted by other states, please see annual reports for the respective state (Montana: Bradley et al. 2012; Washington: http://wdfw.wa.gov/conservation/gray_wolf/); Wyoming: Jimenez et al. 2012).

Suspected Resident Packs

Pine Creek

- New suspected pack for 2011
- No field effort was expended for capture or reproductive surveys

Other Documented Wolf Groups

B524

- Group count (complete) of 1 at end of 2011

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 2011, no documented packs or groups occupied the Southern Idaho Zone (Figure 22, Table 26).

No wolves were captured or radiocollared.

One wolf was legally controlled for harassing livestock (Table 27).

No depredations were documented in this zone in 2011.

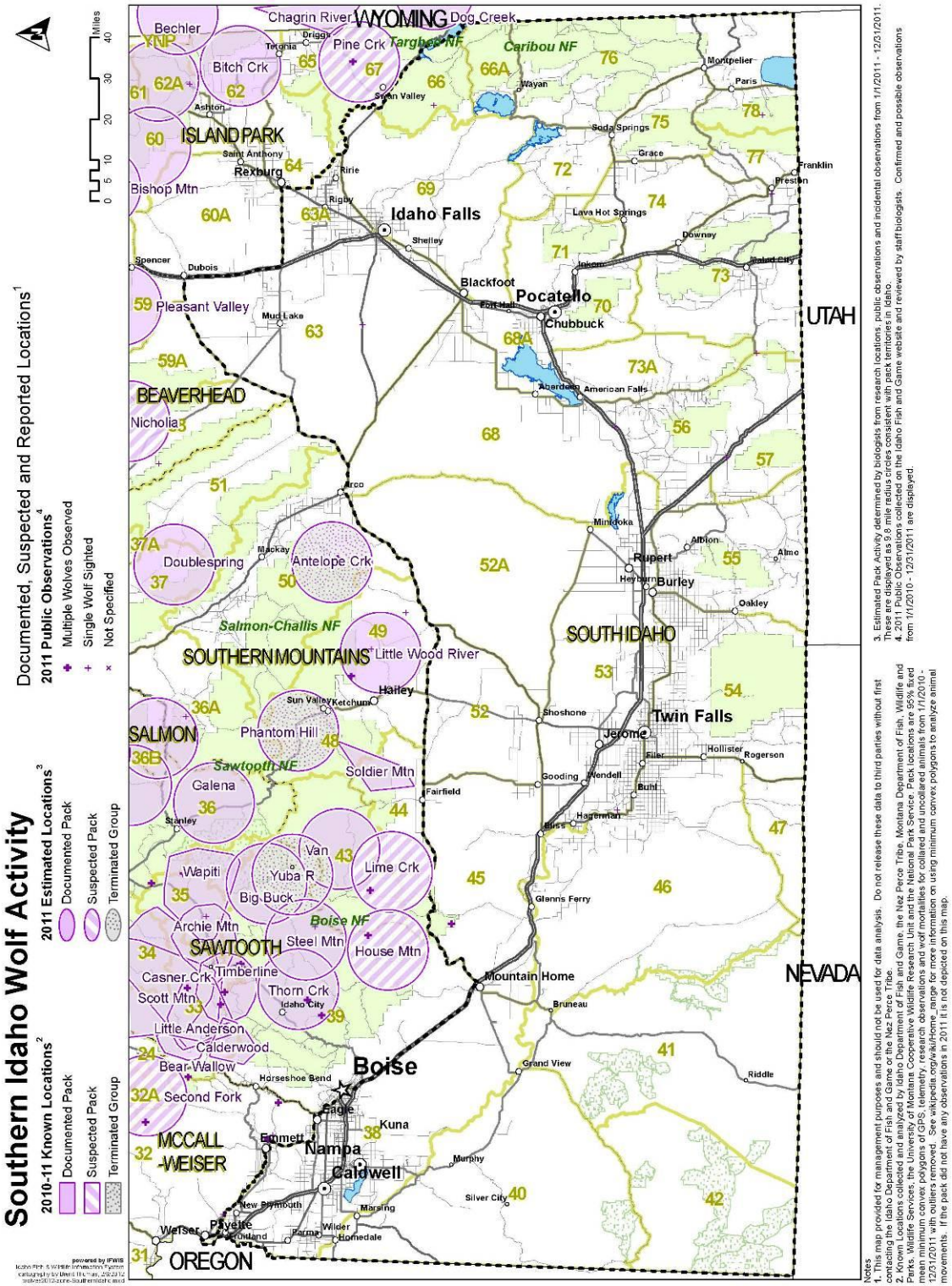

Figure 22. Distribution of documented and suspected wolf packs in the Southern Idaho Wolf Management Zone, 2011.

Table 26. End of year summary of minimum number of wolves detected, reproductive status, dispersal, and monitoring status for documented and suspected wolf packs and other documented wolf groups within the Southern Idaho Wolf Management Zone, 2011.

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

[a] Documented packs = territorial groups of wolves usually consisting of an adult male and female and their offspring from one or more generations, and has the potential to reproduce (2 adults of opposite sex). Suspected packs = geographic areas where wolf pack presence was suspected but not verified, or where wolf presence was verified but did not meet documented pack status. Other documented group = verified groups not meeting either documented or suspected pack status (e.g., lone wolves, potential mated pairs, etc.).

[b] Number of wolves observed by wolf program personnel from monitoring flights conducted during winter 2011/2012 and represents end of year (2011) 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 MORTALITIES 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…".

[e] Includes wolves captured for monitoring purposes during 2011. Most, but not all, were radiocollared.

[f] Radiocollared wolves that became missing in 2011.

Table 27. End of year summary of documented wolf mortality and wolf-caused livestock depredations by GMU within the Southern Idaho Wolf Management Zone, 2011.

GMU	Documented mortality					Confirmed (probable) wolf-caused livestock losses			
	Natural	Control[a]	Harvest	Other human[b]	Unknown[c]	Cattle	Sheep	Dogs	Other
38	0	0	0	0	0	0	0	0	0
40	0	0	0	0	0	0	0	0	0
41	0	0	0	0	0	0	0	0	0
42	0	0	0	0	0	0	0	0	0
45	0	0	0	0	0	0	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	0	0	0	0	0	0	0
66A	0	0	0	0	0	0	0	0	0
68	0	0	0	0	0	0	0	0	0
68A	0	0	0	0	0	0	0	0	0
69	0	0	0	0	0	0	0	0	0
70	0	0	0	0	0	0	0	0	0
71	0	0	0	0	0	0	0	0	0
72	0	0	0	0	0	0	0	0	0
73	0	1	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	0	0	0	0	0	0	0

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

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.

Ausband, D. E. 2010. Pilot study report for using a biofence to manipulate wolf pack movements in central Idaho. Available on-line at: http://www.umt.edu/mcwru/personnel/ausband/default.aspx

Bradley, E. H. 2004. An evaluation of conflicts and management in the northwestern United States. Thesis, University of Montana, Missoula.

Bradley, L., J. Gude, L. Hanauska-Brown, N. Lance, K. Laudon, A. Messer, A. Nelson, M. Ross, and J. Steuber. 2012. Montana Gray Wolf Conservation and Management 2011 Annual Report. Montana Fish, Wildlife & Parks. Helena.

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.

Jimenez, M. D., D. W. Smith, S. A. Becker, D. R. Stahler, E. Stahler, and R. F. Krischke. 2012. Wyoming Wolf Recovery 2011 Annual Report. Pages WY-1 to WY-20 *in* U.S. Fish and Wildlife Service Rocky Mountain Wolf Program 2011 Interagency Annual Report. M. D. Jimenez and S. A. Becker, eds. USFWS, Ecological Services, 585 Shepard Way, Helena, Montana, 59601.

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

USDA-APHIS Wildlife Services. In Preparation. Wolf activity report fiscal year 2011. Idaho Wildlife Services, Boise.

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. This technique has been peer reviewed by the University of Idaho and northern Rocky Mountain wolf managers. The technique bypasses the need to count pups in every pack, and instead relies on documented packs, mean pack size (from number of wolves detected for those 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 since modified the technique slightly. Beginning in 2010, we used the total count of wolves for those packs where we had a high degree of confidence that we had observed all pack members, and applied the mean pack size (statistical mean is used when number of packs with complete counts ≥20, otherwise median pack size is applied) to the remaining packs (with incomplete counts), rather than using the mean or median pack size for all packs as had been done previously. 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 = 109
 # Documented packs lacking complete count = 85
the number of documented packs that were extant at the end of 2011 was 101, complete pack size counts were obtained on 16 of them, leaving 85 packs with counts that were presumed incomplete,
Median pack size = 6.5
median pack size was calculated using only those packs (*n* = 16) for which complete pack counts were obtained in 2011,
 # Wolves in other documented wolf groups of size ≥2 = 2
"total count" for those radiocollared wolves in groups of 2-3 wolves that were not considered packs under our definition,
lone wolf factor = 12.5%
a mid value from a range derived from 5 peer-reviewed studies and 4 non-reviewed papers from studies that occurred in North America and were summarized and reported in 2003 (Mech and Boitani 2003, page 170).

Calculated with this technique, the 2011 wolf population estimate is 746 wolves (a decrease of 4% from the 2010 corrected wolf population estimate of 777 wolves):

((109 + (85 * 6.5) + (2)) * 1.125
(109 + (552) + (2)) * 1.125
(663) * 1.125 = 746

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

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

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