



WHAT'S ALL THE HOWLING ABOUT?

Managing Wolves and Elk in Idaho

By Craig White

Wildlife Biologist

Idaho Department of Fish and Game

*Photographs courtesy of Idaho Department of
Fish and Game unless otherwise noted.*

I recently spoke to my good friend Chris just after he and a few friends had returned from archery hunting in one of Idaho's central mountain zones. Chris is a hardworking, caring hunter who comes from a long line of Idahoans passionate about hunting. He's also a person of high integrity and honesty, and since our conversation took place at church, I am pretty sure he was not lying to me about his hunting experiences. Chris shared that this year, like last year, he and his group had bulls talking to them just about every day they hunted. Chris related how one large bull just needed to take one more step in the right direction, and his friend would have had meat on the pole. Although the hunters returned home without meat, it was not from a lack of seeing bulls. They had a great time.

Chris's story is not atypical. Elk still exist in Idaho, and wonderful hunting experiences are being had. I am familiar with where Chris hunts, an area where we have documented significant impacts to elk populations from wolf predation. Chris hunts a particular drainage where several wolf pack territories come together, so I know that Chris hunts where wolves may be found on any given day.

In contrast, many other elk hunters tell me that all they see are wolves or wolf sign, but no elk. This different, very real experience has frustrated and discouraged many hunters. The disparity between Chris's story and the experiences of other hunters highlights the questions Idaho is facing: What impacts are wolves having on Idaho's elk populations?

BY THE NUMBERS...

SURVIVAL OF ELK CALVES MORE THAN SIX MONTHS OLD AND CAUSE OF DEATH, 2005-2009

Elk Management Zone (Units)	Avg. Ann. Survival (%)	Percent ⁴ of population removed by cause				
		Legal Harvest	Wolf	Cougar	Unknown ¹	Other Causes ²
Lolo (10, 12)	52	0	32	7	2	7
Sawtooth (33, 34, 35, 36)	30	0	38	3	13	18



© P. PERDANIAN/ISTOCKPHOTO.COM

SURVIVAL OF FEMALE ELK

Elk Zone	Annual survival (%)
Lolo ²	75
Elk City	87
McCall	81
Sawtooth ³	87
Boise River	85
Weiser	89
Smoky Mtns	81
Pioneer	88
Salmon	83
Tex Creek	89
Island Park	80

CAUSES OF DEATH OF FEMALE ELK

Elk Zone	Percent of population removed by cause			
	Wolf	Cougar	Legal Harvest	Other
Lolo ²	20	3		
Elk City	5	5		
McCall			6	
Sawtooth ³	4	2	3	
Boise River			5	4
Weiser	1		8	
Smoky Mtns	5	4	3	
Pioneer	1	3	6	
Salmon	2	6	5	
Tex Creek		1	8	
Island Park		1	17	

¹ Cause of death determined to be from predation, but specific predator unknown.

² Includes death caused by accidents, disease, malnutrition, other predator, and unknown causes.

³ Calves monitored from December to June.

⁴ Percentages may not add up to 100 because of rounding.

What is happening to elk in the Lolo elk management zone? And, what is the future of elk management?

Elk Populations and Hunting in Idaho

Idaho's diversity of big game species is a hunter's dream. Ten species of big game can be hunted in Idaho but for most hunters, elk are the king of them all. An incredible mixture of opportunity is provided by Idaho's diverse habitats and population of more than 100,000 elk. The Idaho elk hunter can pursue bulls that vanish like ghosts in the sagebrush deserts, bugle for bulls in aspen draws above dry farms in eastern Idaho, chase herds in the lung-busting climbs of the central Idaho mountains, or stalk the thick-timbered ridges of Northern Idaho.

The Idaho Department of Fish and Game (IDFG) has a long history of evaluating factors that impact elk herds. Studies include food habits and movement patterns of elk, bull mortality factors, impacts of road densities and road closures on elk survival, and

predator-elk interactions. We have learned a lot about managing elk during the last 50 years. The information gained from these studies, combined with the need to manage hunter distribution and hunting pressure to meet the desires of elk hunters, led to the creation of elk management zones. Elk are managed in 29 zones that allow population management based on local habitat, weather, and herd movements. The zones provide a variety of hunting opportunities.

IDFG monitors elk through a number of tools including aerial surveys and tracking elk movements and survival with radio-telemetry. Understanding what drives elk populations is important. Ultimately, female survival is the key to elk population growth, decline, or stability. Of course, it's also important that cow elk get pregnant, produce calves, and that the calves survive to reproductive age. In a nutshell, elk population trends depend on the survival rates of cow elk and calves. Elk survival depends primarily on four factors: nutrition, hunter harvest, predation, and weather.

IDFG has witnessed ebbs and flows in elk population abundance for decades. However, Idaho's elk population overall has declined 20 percent over the last 15 years, dropping from 125,000 to about 103,000. Some zones have seen at least some decline and six are below elk population objectives. A few of the declines started in the late 1980s and early 1990s, primarily because of lower calf survival, but other declines commenced in the last five to 10 years.

Impacts from Wolves

Wolf reintroduction into the northern Rocky Mountains has been highly controversial since the first releases in Yellowstone National Park and Central Idaho in 1995. In August of this year, IDFG published a news article reporting our recent research findings regarding elk mortality and the impact of mountain lions, gray wolves, and regulated hunting (http://fishandgame.idaho.gov/cms/news/fg_news/). The article highlighted recent cow elk survival rates and the primary causes of cow mortality

in 11 elk management zones representing the range of habitats, hunting opportunities, and predator densities found in Idaho. Most data in this report was collected from 2005 to 2008 and reflects the factors that impact elk herds across Idaho. The article also reports survival and the primary causes of mortality of calves 6 to 12 months old in the Lolo and Sawtooth zones between 2005 and 2009.

IDFG typically manages for cow survival in the upper 80 percent range if enough calves are surviving to replace adult animals that die each year. Our research indicated that annual survival rates for cows ranged from a low of 75 percent to a high of 89 percent among the 11 zones. Wolves, or a

combination of wolves and mountain lions, were the leading cause of cow elk deaths in five of the 11 zones sampled. All five zones had declining elk populations and moderate to high wolf numbers. To put our findings into context, 10 of 29 Idaho elk management zones had moderate to high wolf numbers from 2005 to 2008 and we sampled cow survival in only seven of them. It is likely that the remaining three zones with similar wolf densities would yield similar survival results during the same period.

Survival of elk calves 6 to 12 months old was 30 percent in the Sawtooth zone and 52 percent in the Lolo zone. During winter, wolves were the leading cause of elk calf death, killing one-third of the elk calves in those zones. Malnutrition, while not as great a factor as wolf predation, also influenced calf deaths in the Sawtooth zone.

Lolo Zone: one of the most studied elk populations

The Lolo zone in north-central Idaho used to be one of the West's most popular areas to hunt elk. The Lolo zone is also unique in having one of the West's most intensively studied elk herds, providing a valuable perspective

on the historic and current factors that influence elk populations.

The Lolo zone is also notable for having experienced one of the greatest elk population declines in Idaho. The population peaked in 1989 at an estimated 16,054 elk before subsequently declining. Several factors played a role in this decline but today, wolves are the primary reason that elk are still trending downward in this zone and cannot recover. Wolves became well established in the Lolo zone from 2003 to 2005. The elk population in 2006 was estimated to be 5,110. From 2005 to 2008, IDFG documented that wolves removed 20 percent of the cow elk population annually, and survival was down to only 75 percent annually with no cow losses to hunter harvest. Results from previous elk studies in the Lolo zone, before wolves were released in Idaho, indicated annual survival was 89 percent even with hunter harvest. Perhaps even more alarming is that winter calf survival is only 30 to 52 percent in areas with relatively high wolf numbers. This compares to calf survival rates of 71 to 89 percent prior to 2004 when wolf densities were lower. Wolves were responsible for most of the winter mortality of calves 6 to 12 months old. Today's estimated population level is 2,178 and wolves are having an unacceptable impact on elk herds in the Lolo zone.

Historically many factors such as habitat conditions, weather, and other

The Idaho Department of Fish and Game monitors elk through a number of tools including aerial surveys and tracking elk movements and survival with radio-telemetry. Understanding what drives elk populations is important. Ultimately, female survival is the key to elk population growth, decline, or stability. Of course, it's also important that cow elk get pregnant, produce calves, and that the calves survive to reproductive age.





predators all influenced elk populations in the Lolo zone. Extensive fires throughout the Lolo zone in the 1910s, 1920s, and 1930s, created excellent habitat conditions for elk populations. Conditions favorable to elk likely peaked 10 to 40 years following the fires of 1937 and slowly declined after that. Brush fields slowly grew up and noxious weeds such as spotted knapweed became established on winter ranges, reducing the quality of the habitat for elk. Food became more limited for elk, and the overgrown brush fields in calving areas may have allowed predators to be more effective. A record snowfall (200 percent of normal) occurred in winter of 1996, and many elk died as a result of the deep snow and persistent winter conditions.

Concerns over persistent low calf recruitment prompted new research in the Lolo zone in 1997. Findings revealed low calf recruitment was a function of low calf survival. Most predation of neonates (less than 90-day-old calves) was by black bears and mountain lions. Calf mortality from black bear predation was additive, as evidenced by increasing calf survival following a controlled reduction in black bears. Additionally, elk calves with lower birth weight, which typically is tied to nutrition, were likely pre-disposed to predation.

What has been done to reverse these trends? Of course, IDFG has no control over the weather. And, because IDFG owns very little of the elk habitat in Idaho, we work hard to encourage the land managers, including the U.S. Forest Service and U.S. Bureau of Land Management, to improve habitat for wildlife. What IDFG does do is manage animal populations through hunting, trapping, and other techniques.

As elk numbers in the Lolo zone declined, IDFG reduced hunting opportunities

Together, IDFG and hunters have a proven track record of managing wildlife responsibly. In the one year (2009) that Idaho was allowed a wolf hunt, that track record was put to the test and a responsible and successful hunt was conducted.



including eliminating antlerless controlled hunts in 1998 and eliminating the only remaining antlerless hunt opportunity in 2006. As well, IDFG increased hunting opportunities for black bears and mountain lions to reduce numbers of these predators, while carefully monitoring populations of both species. The Lolo's elk population began to rebound, but elk numbers remained well below the expected population level the habitat could support. This recovery was short-lived because wolves became well-established in the zone.

Clearly, several factors have contributed to the declining Lolo elk population. Today, wolf-caused mortality is the major factor preventing calf recruitment and cow elk survival. Predation by an unmanaged wolf population is limiting elk abundance and achievement of elk management objectives.

Future of Idaho Elk Management
Fifteen years following wolf reintroduction,

our research demonstrates that unmanaged wolves can be a leading cause of elk deaths and have contributed directly to elk declines. Elk numbers in zones with the greatest wolf impacts will continue to decline and/or remain below management objectives until IDFG can reduce wolf numbers, allowing elk to rebound. IDFG has had to reduce elk hunting opportunities because of wolf impacts on elk numbers. For example, there has been virtually no opportunity to hunt cow elk in the Lolo zone in the last 10 years and the opportunity to hunt cow elk in the Sawtooth zone has been reduced dramatically in recent years. Further management actions will be taken in other zones where wolves are having a similar impact on cow and calf survival, which could also result in reduced bull-hunting opportunities. The reality is, loss of elk to wolves is an additional source of mortality that did not exist prior to 1995. Wolf impacts can vary by zone, affecting how citizens enjoy their wildlife



PHOTO COURTESY OF DON SEITZ

The Idaho Department of Fish and Game does its best to ensure the long-term survival of fish and wildlife. What makes managing elk and wolves really difficult are people's values, attitudes, and emotions. LEFT: This elk was harvested in 2010 in Idaho by Don Seitz.

resources and how the state manages big game populations.

There are bright spots for Idaho, however. Nineteen other elk management zones have relatively low to moderate wolf numbers. In most of these zones the trends remain positive. For example, all but two of these zones meet or exceed elk population objectives and continue to offer excellent elk hunting. Elk populations and hunting opportunities in these zones remain strong and in some, such as the Hells Canyon zone, IDFG has been able to offer more elk hunting opportunities in recent years. Most of these areas will continue to see lighter impact from wolves because they are on the periphery of wolf distribution or in locations where wolves create conflicts with domestic livestock. However, wolves are increasing in some zones, such as the Panhandle, and impacts will need to be managed. Hunters who plan well, and are adaptive in where they hunt, can continue to have quality elk hunts in Idaho. However, losses of quality elk hunting opportunities in central and north Idaho cannot be replaced by hunting opportunities elsewhere in Idaho where elk population potential is lower.

IDFG does its best to ensure the long-term survival of fish and wildlife. What makes managing elk and wolves really difficult are people's values, attitudes, and emotions. Some people don't think that wolves should even be in Idaho. Others care more about wolves and other predators than their prey. Yet, others want nature to be left alone, without human interference. Our challenge, once wolves are again removed from the federal

Endangered Species List, is to find a flexible and balanced approach to managing elk and wolves that will be acceptable—maybe not ideal, but acceptable—to most Idahoans.

IDFG and hunters have worked together for over 50 years to increase our big game populations. We are very proud of our elk herds, and with careful harvest management we have enjoyed some of the best elk hunting in the world. Sportsmen and women have been active partners with IDFG and the financial supporters for all of our wildlife management programs, including enforcement. Together, IDFG and hunters have a proven track record of managing wildlife responsibly. In the one year (2009) that Idaho was allowed a wolf hunt, that track record was put to the test and a responsible and successful hunt was conducted. With professional wildlife managers, IDFG can manipulate wildlife populations to limit their effects on each other and on people. We do it all the time, such as with elk that cause damage to crops. IDFG would like to have the tools to do the same thing with wolves in places like the Lolo and Sawtooth management zones; not to wipe them out, but to manage in balance with their prey and provide some of our elk herds with a badly needed reprieve.

The Latest Round

The role of IDFG in wolf management recently changed. On October 18th the governor of Idaho returned wolf management responsibilities to the U.S. Fish and Wildlife Service. The decision to remove IDFG as the primary agency managing wolves came after the decision to re-list wolves on the threatened and endangered species list in August 2010, and an agreement to allow wolf hunting could not be reached between the governor's office and the secretary of interior by the middle of October 2010. Frustration of elected and appointed officials as well as hunters is high because wolf management options are once again restricted. What does this change in wolf management mean for IDFG?

IDFG will no longer actively participate in statewide efforts to radio collar and count wolves, respond to livestock depredations, or document wolf distribution. IDFG conservation officers will refer information of illegal activity to the U.S. Fish and Wildlife Service and direct citizens and information to them.

So ultimately what is all the howling about and what do I tell my friend Chris, and those hunters who have had a frustrating experience hunting elk in Idaho? Elk populations in some key areas of Idaho are declining where wolf populations are abundant. Unmanaged wolves do have a severe impact on some elk populations; and, just as critical, wolves impact people's values, attitudes, and emotions. IDFG will continue to evaluate and respond to impacts that wolves have on elk, deer, moose, and any other wildlife population as much as possible by pursuing management options allowed by the Section 10j rule (Endangered Species Act) to reduce wolf populations in areas where wolves are impacting elk populations. Other alternatives such as appealing the decision to re-list wolves or introducing legislation in Congress with the intent to de-list wolves are being explored by the state of Idaho and other affected states. Hunters and others need to know that IDFG is committed to using the tools available to improve elk populations where they are impacted. IDFG will also continue to ensure elk populations thrive in areas of the state that have not been impacted by wolves and that quality hunting opportunities are available. ■

ABOUT THE AUTHOR

Craig White is a wildlife biologist with the Idaho Department of Fish and Game. Craig has been a part of the department's effort to research what drives elk and deer populations, and in particular, habitat and predator-prey dynamics. During the last year Craig has been more involved in daily wolf management for the department.