

## **Eleven Years with Wolves – What We’ve Learned**

**By Jim Lukens, Salmon Region Supervisor, IDFG**

Probably no other animal has generated the degree of emotions that the gray wolf has. I suspect this is due in part to two factors: folklore and human nature. Literature, song and history are filled with references to the wolf as a vicious or demonic creature; Little Red Riding Hood, werewolves, three little pigs, “wolf at the door”, etc. As humans we often hate what we either fear or do not understand. Native cultures in North America and elsewhere credit the wolf with almost mythical power. In reality, neither representation is true. Wolves are predatory animals, just like any other. Since 1995 when wolves were reintroduced in Idaho, we’ve been observing them in their natural state. I would like to summarize what we have learned, present other documentation and perhaps clear up some misunderstanding.

### **Distribution, Number and Ancestry**

Any discussion of numbers must be prefaced by the fact that these are estimates because wolves in Idaho continue to pioneer new territories and very little is known about wolves in the wilderness areas. The primary monitoring protocol current utilized is placement of radio collars on a couple of individuals from each pack and monitoring their movement, litter sizes and pack numbers with aerial or ground surveys.

By the end of 2005, biologists documented 59 resident wolf packs in Idaho, observed a minimum of 370 wolves, and estimated the population at 512 wolves. In addition, 11 documented border packs have established territories that straddle state boundaries between Idaho, Montana, and Wyoming and likely spend some time in Idaho. Of the 40 packs known to have reproduced, 36 qualified as breeding pairs by the end of the year. These 40 reproductive packs produced an estimated minimum 123 pups, two of which were known to have subsequently died.

Salmon Region was occupied by 13 documented resident, 3 documented border, and 1 suspected border packs during 2005. All 9 reproductive packs also qualified as breeding pairs; lack of radio collars prevented determining the reproductive status of the remaining 4 resident packs.

We often hear that the wolves reintroduced to Idaho from Canada are not the same wolves that originally inhabited the U.S.. The U.S. Fish and Wildlife Service recognizes only the gray wolf, *Canis lupus* for recovery purposes. Wolves from Canada moved to northwest Montana and northern Idaho on their own prior to reintroductions and since. In the authoritative book by Mech and Boitoni called *Wolves, Behavior, Ecology and Conservation*, Ronald M. Nowak claims two subspecies of wolves inhabited the central and western portion of the United States. The distribution of these two subspecies, the plains wolf and northwestern wolf, both overlapped the U.S. and Canada. But even these results are refuted by other taxonomists who believe there was only one gray wolf. When considering trapping locations for the wolves ultimately released into Idaho, biologists selected populations that were already utilizing elk prey, similar to what would be encountered in Idaho. This further increased the suitability of these wolves for life in Idaho. Some people say that wolves used to be smaller than the reintroduced ones. There is little evidence to support that claim. However, all animals tend to be larger the further north they are in their species range (this is called Bergman’s rule), and the less animals have to eat, the smaller their body size tends to be. When wolves were eliminated at the turn of the century, homesteaders, miners, Native Americans, and others had severely depleted natural prey. Prey is more abundant now than when wolves were eliminated, thus, they may weigh more. They are not a different species.



*Wolves killed in the west during the Bounty Period were similar in size to Idaho wolves today.*

### **Wolf Predation**

While a fair amount of information regarding prey selection and secondary prey has been collected, little information has been collected in Idaho regarding wolf predation and almost no information regarding non-winter food habits. While it's often tempting to generalize, wolf predation data from one area does not necessarily represent predation characteristics from other wolf-prey systems. The same is true for data collected during one season being expanded to year round estimates or applied to another season. The reasons include such factors as variations in wolf densities; interactions with other predators; number, distribution and species composition of prey; weather i.e. snow conditions; and availability of alternate prey species. Despite this variation, one generalization that tends to hold true for most wolf-prey systems is the tendency for wolves to select prey that are disadvantaged in some way (e.g., the young, the old, and the sick, injured or weak individuals). Because of their pursuit-style of hunting, wolves tend to encounter prey that are slower or weaker in some way, thus falling to the rear of the fleeing herd where they are vulnerable to being singled out by wolves.

Jason Husseman, our current Salmon Region wolf biologist, conducted a winter wolf and mountain lion predation study in Unit 28 as part of his Master's degree from 1999 – 2001. During that period, Jason examined 120 wolf kills, comprised of elk (77%) and deer (23%). Wolves selected for elk calves (60%) but also killed cows (32%) and bulls (8%). Deer taken by wolves were mostly fawns (65%). The average age of adult (older than 1 year) elk killed by wolves was 12.6 years, significantly older than a sample of 31 cow elk killed by hunters (7.3 years).

Jason determined that each wolf pack in his study area made a kill every 2 – 3 days. Again this does not mean that all wolf packs in Idaho, wolf packs during the non-winter period or possibly even the wolf packs now residing in the study area kill prey at this rate. As was found in Yellowstone, once prey adapted to wolves, predation rates by wolves declined. Also prey are more difficult for wolves to kill on dry ground when they are in good condition, versus the winter when prey condition is poorer and snow makes it tougher to escape wolves.

Another comment we often hear is that wolves frequently kill for “fun” or “sport kill” and do not utilize the carcass. Jason also looked at this aspect of wolf kills and found that most kills were heavily utilized (80% of carcasses more than ? utilized) and all kills had some utilization.

While “surplus killing” (killing in excess of what could be consumed in the immediate future) has been

documented, these incidents usually occur under atypical conditions (such as unusually deep snow conditions that severely disadvantage the prey). Furthermore, wolves more often than not return at a later time to consume the “leftovers”.

One last, interesting aspect of Jason’s work involved classification of prey condition or, how healthy was each prey animal when killed by wolves or lions. This technique utilized measurement of bone marrow fat content. Bone marrow fat is the last fat reserve utilized by deer and elk during winter, after they have used up all other fat reserves in their bodies. From other research, we know that once animals fall below a certain level of bone marrow fat content, they will not survive. Jason determined that 25% of the animals killed by wolves would not have survived the winter and perished from malnutrition anyway. Biologists call this compensatory mortality. Jason also found that condition of elk killed by wolves was consistently poorer than that of elk taken by mountain lions and elk prey condition worsened through the winter.

Salmon Region biologists (and biologists from all other mule deer Regions in the state) have been placing radio collars on mule deer fawns since 1998. These collars produce a different signal when they have stopped moving. Naturally, this occurs when the fawn has died. The biologists can then go right to the dead fawn, examine the carcass and usually determine the cause of death. This work has yielded a little more insight into the impact of wolves on deer fawn mortality. Of the 285 deer fawns tracked by Salmon Region biologists, 141 died. Predation was the cause of death for 69 (24%) of the fawns. Predators included coyotes (44), mountain lions (9), wolves (7), bobcats (4) and unidentified predators (5).

One more interesting research project, initiated in 2005 by Mark Hurley and Pete Zager, includes radio collaring 261 adult doe mule deer and 337 adult cow elk from selected areas throughout the State, including 151 elk and 147 deer in Salmon Region. These collars also emit a mortality signal. Results through January 2006 for Salmon Region (and units 50 and 60A in Upper Snake Region) show 85% deer survival and 82% elk survival. Biologists consider 80% doe survival and 85% cow elk survival normal and sustainable. Elk mortality factors included hunter harvest (52%), mountain lions (30%), wolves (7%), malnutrition (7%), and unknown predation (4%). Deer mortality resulted from lions (32%), hunter harvest (18%), accidents (14%), unknown causes (14%), wolves (9%), roadkill (9%), and malnutrition (4%).

### **Status of Big Game Herds**

Obviously wolves prey upon deer and elk, along with lions, black bears and several other predators, but what has been the impact to our game herds? We will probably never know exactly how many deer and elk are killed by each wolf pack at any given time of the year but that level of information probably isn’t necessary. Biologists monitor the status of game herds with aerial surveys and hunter harvest information.

At the time wolves were released into Idaho, the elk herd in Salmon Region numbered approximately 28,000 animals. The current estimate is approximately 25,000. While this estimate is lower, it is important to note several facts: we are still exceeding our Elk Plan objective by about 1,000 animals, all elk zones in the Region have generally been meeting plan objectives and in some Units, it has been our intent to deliberately reduce elk numbers to reach objectives. Cow elk harvest is utilized in Units that are meeting or exceeding plan objectives.

Deer are not surveyed for overall population estimates. We conduct aerial surveys to monitor trends in production and number of bucks compared to number of does. We also review harvest statistics for the number of four point bucks in the harvest. Our Deer Plan objectives for non-wilderness Units are 15

bucks per 100 does following hunting seasons and 30% four point bucks in the harvest. In our wilderness Unit (27) the objective is 25 bucks per 100 does and 50% four point bucks in the harvest. At least since wolves were reintroduced, our deer herds have remained very near our objectives. We have not had adequate numbers to recommend significant doe harvest. The most likely limiting factors for mule deer in the Salmon Region are habitat condition and weather. Severe winter mortalities have been noted this winter and others like it in the past. Biologists have documented poor antler growth in mule deer bucks and low fawn weights. Both of these conditions indicate poor nutrition and low summer rain fall. Also, we have noted heavily impacted browse species in the important wintering areas during aerial surveys.

### **Livestock Depredations**

Though not considered a normal prey item, wolves also occasionally kill domestic livestock. Losses to some operators have been significant. Defenders of Wildlife has been compensating ranchers for documented wolf caused losses (100%) and probable losses (50%) since the reintroduction. From 1996 to 2005, Defenders has paid \$135,933 to compensate statewide losses. Here in Salmon Region, payments during the same period totaled \$42,013 and involved 22 sheep, 2 guard/herding dogs and 75 cattle.

In 2004, the Governor's Office of Species Conservation established the Idaho Wolf Depredation Compensation Plan. One outcome of the plan was to establish the Idaho Wolf Depredation Compensation Fund using Federal funds. The purpose of the Fund is to compensate producers for losses above documented historical averages where wolves exist and depredations have been recorded. This fund is designed to compensate for documented losses that are not covered by Defenders or other sources and has been about \$100,000 per year for the last 3 years.

Wolf depredations continue to be managed by Wildlife Services (WS), a branch of the U.S. Department of Agriculture, Animal and Plant Health Inspection Service. When a livestock depredation is reported, we contact WS and they will utilize either lethal or nonlethal measures from the ground or aircraft to attempt to control offending animals thereby reducing further depredations. In February, 2005, the U.S. Fish and Wildlife Service implemented a new rule, the "10(j)" rule, which gave more flexibility to producers for controlling wolves attacking, molesting, harassing, and injuring domestic livestock and dogs.

### **Threat to Humans**

Recent human/wolf encounters in our area have raised concern regarding threat to human life. Any and all wild animals can be hazardous to humans with outcomes ranging from discomfort to death. Two behavioral changes affect animals and their likelihood of injuring humans. When an animal, due to repeated contacts without injury loses its fear of humans, that animal has become "habituated". When an animal receives a food reward for a given behavior, that animal is termed "food conditioned". When an animal is both habituated and food conditioned, they are likely to become more aggressive around humans. The first probable human fatality in North America since 1900 attributed to wolves occurred in November, 2005, in northern Saskatchewan. Paul Paquet, a wolf biologist at the University of Calgary is helping to investigate the death with provincial authorities. The investigation has determined that some wolves in the area had been attracted to a garbage dump, had possibly been fed at a nearby mining camp, and therefore may have been food conditioned, and regularly photographed by humans thereby becoming habituated.

In *A Case History of Wolf-Human Encounters in Alaska and Canada*, Mark McNay documents 80 cases of wolf-human interactions (aggressive and nonaggressive) that have occurred in the past 60 years: 36 in Alaska, 41 in Canada and 3 in Minnesota. Of the 80 cases described, none was fatal and 25 involved unprovoked aggression by healthy wolves (13 involving injury to humans). The other 55

cases consisted of interactions where wolves acted in self-defense (14), were known or suspected to have rabies (12) or showed interest but no aggression (29). Most of the unprovoked attacks by healthy wild wolves were caused by wolves that became fearless of humans due to habituation, or had been fed regularly by people thereby becoming food conditioned and aggressive, similar to the above-described incident in Saskatchewan. Some cases of aggression in the report and in Idaho were related to the presence of a dog with the person. Wolves don't usually like other canids in their territory. Other reports of aggression may be explained by wolves protecting pups or a den site. A person in wolf country has a greater chance of being injured or killed by a dog, lightning, a bee sting or a car collision with a deer than being injured by a wolf. However, if a wolf does appear aggressive, do not run away, instead maintain eye contact, make sure the animal knows you are human, and try to scare the wolf away. Carrying bear pepper spray is a good idea to deter any carnivore including dogs, wolves, lions or bears.

### **Current and Future Management**

Although wolves are still protected under the Endangered Species Act, since implementation of the 10(j) rule, mentioned above, Idaho Department of Fish and Game has assumed some wolf management authority. As provided under the rule, Idaho Governor Dirk Kempthorne and Secretary of the Interior Gail Norton signed a memorandum of agreement that allows Idaho to manage wolf populations in the state. "This agreement gives us the flexibility to take over many of the wolf management responsibilities currently performed by the federal government – the day to day operations of wolf management," Kempthorne said. "While total state management of these fully recovered wolf populations remains the ultimate goal, today marks an important step forward for Idaho."

Once the wolf is delisted, the Department will assume full management responsibility with direction from the *Idaho Wolf Conservation and Management Plan*

([http://fishandgame.idaho.gov/cms/wildlife/wolves/wolf\\_plan.pdf](http://fishandgame.idaho.gov/cms/wildlife/wolves/wolf_plan.pdf)). This plan was produced in March, 2002 by the Idaho Legislative Wolf Oversight Committee and amended by the 56<sup>th</sup> Idaho Legislature, Second Regular Session. The goal of this conservation and management plan is to ensure the long-term survival of wolves in Idaho while minimizing wolf-human conflicts that result when wolves and people live in the same vicinity. The management goal will be to maintain more than 15 wolf packs statewide. In 2005, the Fish and Game Commission classified the wolf as a big game animal under authorization provided by the Plan, but cannot be managed as such until they are delisted. At this point delisting hinges on all three states in the recovery area completing management plans and receiving approval from the Federal government; Idaho and Montana have approved plans, but Wyoming's plan has not been approved. The delisting process cannot continue until this key piece is in place.

Idaho Department of Fish and Game and other agency biologists have not learned everything there is to know about wolves in the 11 years they have been here, but we have learned a lot, are learning more every day and are keeping close tabs on deer and elk herds. Also, we have been working closely with the Nez Perce Tribe, U.S. Fish and Wildlife Service, Governor's Office of Species Conservation and Wildlife Services which has greatly added to our knowledge base. We look forward to delisting and exercising our full management authority as outlined by our plan.