V. WOLF INTERACTIONS WITH OTHER SPECIES

This chapter describes the potential wolf interactions with other carnivores, hybrid wolves, ESA listed species, and the potential ecosystem response. Strategies to address these types of interactions are educational in nature because the research on these types of interactions is relatively new and untested in Oregon and because ODFW does not have authority to manage some of the effects.

With the prospect of wolves entering Oregon close at hand, much of the discussion and concern has centered on the interactions of wolves with livestock and ungulate species. However, wolves in the Oregon landscape also will interact with a host of other species including other carnivores such as cougars and coyotes, as well as with mammal and bird species. Many of these interactions will have immediate implications for either the wolf or the species in question. Other interactions, such as those with vegetation, may be more subtle and difficult to directly relate to wolves by any measurement.

A. Carnivore-Carnivore

Wolves in North America and elsewhere have shared habitats and co-existed for centuries with the full suite of carnivore species found in the variety of habitats occupied. How different carnivore species interact with wolves varies depending on habitat, environmental conditions and other factors. A 2003 literature review found examples where wolves were reported to have eliminated certain carnivores (such as coyotes) locally, but found no evidence of long-term spatial partitioning of resources within an area (Ballard et al. 2003).

To date, no definitive research exists on the effects wolves cause on carnivore community structure or populations (ibid., and USFWS 1994). Information regarding the interactions between other carnivores and wolves is primarily observational and subject to interpretation when attempting to make predictions at the population or community level. Because wolves are wide-ranging and many carnivores are secretive in nature, collecting data on the interactions of the two is very problematic.

In Oregon, wolves will share habitats occupied by a variety of other carnivores including coyotes, cougars, black bears, bobcats, red foxes, gray foxes, river otters, minks, pine martens, fishers, ringtails, weasels, skunks, wolverines, badgers and raccoons. Direct interactions almost certainly will occur as wolves begin to occupy habitats within their historic range in Oregon and establish packs.

A review of the scientific literature offers a glimpse of what may occur in Oregon when wolves interact with the carnivore species noted above. Large carnivores such as cougars and black bears occupy mountain habitat similar to habitat occupied by wolves. In a 2003 summary of wolf-black bear interactions in North America, researchers found wolves sought black bears in their dens and often killed them but did not always consume them. They reported only one observation of a black bear killing a wolf (Ballard et al. 2003).

Cougars and wolves both rely on ungulates as their main food source, but use different hunting techniques. Wolves hunt in packs and generally course or test prey while cougars are solitary hunters and rely on ambush of unsuspecting prey. Few observations of wolf-cougar interactions have been reported, but the two species do sometimes kill each other. During winter, wolves and cougars often

occupy the same winter range as ungulates. Wolves seeking out and taking over cougar kills may increase kill rates of cougars as they attempt to replace lost prey (Murphy 1998, Kunkel 1997, Hornocker and Ruth 1997). This scenario may have implications for ungulate management in Oregon due to the existing large cougar population, which is estimated to be more than 5,700.

Reported observations of interactions between wolves and coyotes are more common in the scientific literature than with other carnivore species. Reports of wolves killing coyotes are common.[37] In Yellowstone National Park, one study reported that most wolf-coyote interactions occurred around wolf kills when coyotes attempt to scavenge ungulate carcasses. The biologists noted several short-term changes in coyote populations in the Lamar Valley following wolf reintroduction: 25-33 percent of the coyote population was killed each winter; coyote numbers declined by 50 percent; and coyote pack size reduced from six to 3.8. In addition, coyotes denned closer to roads and reduced the frequency of vocalizations, presumably to avoid detection (Crabtree and Sheldon 1999).

The presence of wolves in Oregon likely will change the distribution of other carnivores as they attempt to avoid direct interactions with wolves. Such changes could favor some carnivore species over others (e.g., red foxes may benefit from coyote-avoidance responses). It is unlikely that wolves will adversely affect the overall numbers or distribution of other carnivores species in Oregon, but they may cause localized reductions.

B. Hybrids

Wolf hybrids are regulated as domestic dogs in Oregon. This Plan has no jurisdiction over wolf hybrids. Authority to regulate the breeding, raising and holding of wolf hybrids lies with individual Oregon counties. Some Oregon counties have adopted ordinances that regulate the possession of captive wolves and wolf hybrids. For example, Union County prohibits breeding of captive wolves, keeping wolves within the county and release of a predatory animal. Efforts will be made to ensure counties are aware of the Plan and coordinate their actions with ODFW as appropriate.

Wolves are capable of hybridizing with other canid species. Documented hybridization has occurred with coyotes, domestic dogs and feral dogs. In some instances the hybridization may be limited to a single event or result in the evolution of a group of wolves suggested to be a distinct species (Wilson et al. 2000). Generally, behavioral differences between wolves and wolf hybrids, coyotes and dogs keep the populations distinct.

The possession of wolves or hybrids as pets is discouraged because of the potential threat to human safety. "Hybrids and tame wolves have little fear of humans, are less predictable and manageable than dogs, and are considerably more dangerous to people" (Fritts et al. 2003).

Because wolf hybrids can be difficult to distinguish from wild wolves, negative encounters between humans and hybrids often are attributed to wild wolves. The potential does exist for the genetic pollution of wild wolf populations, but the risk is low considering hybrid wolves released into the wild have a low survival rate.

[37] See Seton 1929, Young and Goldman 1944, Munro 1947, Stenlund 1955, Carbyn 1982, Paquet 1991, Thurber et al. 1992 as reported in Ballard et al. 2003.

C. ESA listed Species

Some Oregonians have expressed concern regarding the fate of other listed species when gray wolf populations become established in the state. The federal and state threatened and endangered fish and wildlife species in Oregon can be found in Appendix M.

Wolves in Oregon are not likely to have a measurable adverse impact on any species currently listed as threatened and endangered in the foreseeable future. Species that could be affected by wolves include wolverines, kit foxes, Washington ground squirrels, Columbian white-tailed deer, and bald eagles. Two of these species, the Columbian white-tailed deer and the Washington ground squirrel, are listed as endangered; the others are threatened.

The Washington ground squirrel is found only in the Columbia Basin Province of Oregon, a highly modified region that would be considered poor habitat for wolves. In the unlikely event wolves were to disperse into this area, the risk to ground squirrels would be minimal. This species is subject to predation by mammalian and avian predators, and the addition of wolves would be predicted to have little if any effect. Loss of habitat for the ground squirrel remains the most pressing problem for this species.

The Columbian white-tailed deer population found along the lower Columbia River in Oregon and Washington in northwestern Oregon is federally listed as endangered. The Columbian white-tailed deer populations are small and generally located near human habitation. It is unknown if wolves will successfully disperse to western Oregon and establish packs in Columbian white-tailed deer areas. If wolves were to establish a pack near one of the Columbian white-tailed deer population areas, managers could consider relocating them.

Two other mammalian species, the kit fox and wolverine, potentially could interact with wolves in the future, although the likelihood is remote at best. No known populations of wolverines exist in Oregon at this time. The two species occupy similar habitats in mountainous regions and could interact in the future if wolverine populations become established. The kit fox is found in far southeastern Oregon and is not likely to interact with wolves in the near future. If wolves disperse to the high desert areas of Oregon, their impacts on the local coyote population could serve to enhance the situation for kit foxes.

Bald eagles were delisted from both the state and federal species list. They may derive a benefit from the presence of wolves in that bald eagles are a common scavenger at ungulate kills and at carcasses of winter-killed animals. Wolves tend to kill ungulates in more open terrain and therefore carcasses may be more detectable by eagles. As wolves become established in Oregon, additional carcasses may be available for eagles to scavenge. However, additional food sources have not been suggested as a limiting factor for eagle survival or population increases.

D. Vegetation and Other Ecosystem Responses

In a discussion of the ecosystem effects of wolves, Mech and Boitani wrote that wolves influence other ecosystem components and processes like other species, but they do it in a more conspicuous way. The researchers listed five primary effects of wolves on ecosystems. These were sanitation (culling of less fit individuals); control or limitation of prey numbers; stimulation of prey productivity; increase in food for scavengers; and predation on non-prey species. They wrote that these "primary effects" cascade through the ecosystem causing other changes (indirect effects), about which little is known or understood the further away they are from the direct effect of wolves (Mech and Boitani 2003).

Examples mentioned by Mech and Boitani in Yellowstone Park include observed reductions in coyote numbers that could lead to an increase in red fox populations which are subject to predation by coyotes in the absence of wolves. Reduced coyote numbers could cause an increase in coyote prey species, which may influence other small carnivore populations. However, with more wolf-killed carrion available, other small carnivore populations could benefit unrelated to the direct killing of coyotes by wolves. More small carnivores could lead to reduced prey populations for these species, which ultimately may affect small carnivores in different ways.

Recently, two different research projects documented the influence of wolves on bird and insect species. These effects were attributed to the presence of wolf-killed carrion and the interaction of small carnivores and their prey.[38]

Another indirect effect attributed to wolves involves reported effects on vegetation in Yellowstone Park (Ripple et al. 2001; see also Beschta 2003). Data suggests recruitment of aspen and cottonwood was greatly reduced following removal of wolves from the Yellowstone early in the last century. This allowed elk to browse in riparian zones unaffected by the presence of wolves. With the return of wolves to Yellowstone, vegetation growth and recruitment has been documented, presumably due to the interactions between wolves and elk.

E. Strategies to Address Wolf Interactions with Other Species

Objective

- Build awareness of the effects of wolves on other species.

Strategies

- Support research conducted by other organizations that will provide information about wolf interactions with carnivores, hybrids, ESA-listed species and the long-term ecosystem response.
- Cooperate with counties and ODA on the regulation of hybrids.

[38] Stahler (2000) and Sikes (1994) as reported in Mech and Peterson 2003.

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