Environmental Assessment

Wildlife Services' Implementation of the 2006 Oregon Cougar Management Plan

Lead Agency:

U.S. Department of Agriculture
Animal and Plant Health Inspection Service
Wildlife Services

Cooperating Agencies:

State of Oregon
Department of Fish and Wildlife

State of Oregon
Department of Agriculture

State of Oregon
Police

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List of Acronyms and Abbreviations Used for this Document

APHIS	Animal and Plant Health Inspection Service (USDA agency)
AVMA	American Veterinary Medical Association
BLM	Bureau of Land Management
CEQ	President's Council on Environmental Quality
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CMP	2006 Oregon Cougar Management Plan (ODFW 2006)
Commission	Oregon Fish and Wildlife Commission
DM	Department of the Interior's Departmental Manual
EA	Environmental Assessment
km	kilometer
MIS	Management Information System
MOU	Memorandum of Understanding
NASS	National Agricultural Statistics Service
NEPA	National Environmental Policy Act
OAR	Oregon Administrative Rule
ORS	Oregon Revised Statute
ODFW	Oregon Department of Fish and Wildlife
USFWS	United States Fish and Wildlife Service (USDI agency)
T&E	Threatened and Endangered
USDA	United States Department of Agriculture
USDI	United States Department of the Interior
USFS	United States Forest Service (USDA agency)
Wildlife Services	Wildlife Services (USDA-APHIS program)

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EXECTUTIVE SUMMARY

Cougar populations in Oregon have increased in recent years from an estimated 3,114 in 1994 to an estimated 5,101 in 2003 (ODFW 2006). Human populations have also increased in Oregon. With the increasing number of cougars and an expansion of cougars into all available habitat, there have been increasing levels of conflicts with human interests such as livestock predation, attacks on pets, which are also considered a threat to human safety, and conflicts with the management of other game species such as elk, deer and bighorn sheep.

The cougar (*Puma concolor*), also commonly known as mountain lion and puma, is a game animal in the State of Oregon. Game management agencies generally use hunting as a key tool in managing game populations at desired levels. Dogs are considered the most effective and selective method used to hunt cougar. A 1994 ballot measure, Measure 18, eliminated the public use of dogs for cougar hunting. Since the passage of Measure 18 ODFW's ability to regulate cougar populations using hunting has been compromised.

In response to increasing conflicts with cougars, the Oregon Department of Fish and Wildlife (ODFW) updated and developed a Cougar Management Plan (CMP) which was adopted by the Oregon Fish and Wildlife Commission (Commission) on April 13, 2006. The Oregon Cougar Management Plan uses the best available information to guide Oregon's cougar management and provide strategies for resolution of human conflicts with cougars. The CMP established five objectives that seek through an adaptive management approach to maintain viable, healthy cougar populations in Oregon while reducing conflicts with humans, livestock, pets, and game mammals.

Oregon Department of Fish and Wildlife now seeks the assistance of the United States Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS), Wildlife Services program (Wildlife Services) to help implement the portion of the CMP that calls for administrative cougar removal (localized population reduction) to help achieve the State's management objectives, as one of the management actions taking place to reduce conflicts.

This environmental assessment evaluates Wildlife Services potential role in the 2006 Oregon Cougar Management Plan in a proposed action to administratively remove cougars. A no action alternative was also evaluated for comparison. The environmental effects of the proposal were examined in light of their effects on cougar populations, non-target species, social values, hunting opportunities, and economic impacts. The assessment finds that there would continue to be a viable and sustainable cougar population in Oregon if the proposal is adopted, and it would likely have no or very little negative effects on other species. A variety of social viewpoints are likely to be held by various public interests due to the highly sensitive nature of managing this charismatic species. The proposal would have a low potential to negatively affect cougar hunting opportunities, and a positive economic effect due to the likely benefit to livestock, pets, and game animals.

The No Action alternative was found to have similar effects because if Wildlife Services does not adopt the proposed action, it would be implemented by other agents of the State who would similarly affect the resources examined.

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CHAPTER 1. PURPOSE AND NEED FOR ACTION

This chapter presents information necessary for the reader to understand the nature of the rising conflicts with cougars in Oregon, the history of cougar management in Oregon which has given rise to the current cougar status, and the legal framework for the proposed action and analysis presented in subsequent chapters.

1.0 Introduction

Cougar populations in Oregon have increased in recent years from an estimated 3,114 in 1994 to an estimated 5,101 in 2003 (ODFW 2006). Human populations have also increased in Oregon. With the increasing number of cougars and an expansion of cougars into all available habitat, there have been increasing levels of conflicts with human interests such as livestock predation, attacks on pets, which are also considered a threat to human safety, and conflicts with the management of other game species.

The cougar (*Puma concolor*) also commonly known as mountain lion and puma, is a game animal in the State of Oregon. Game management agencies generally use hunting as a key tool to manage game populations at desired levels. Dogs are generally considered the most effective and selective method used to hunt cougar. A 1994 ballot measure, Measure 18, eliminated the public use of dogs for cougar hunting. Since the passage of Measure 18 ODFW's ability to manage cougars using hunting has been compromised.

In response to increasing conflicts with cougars, the Oregon Department of Fish and Wildlife (ODFW) updated and developed a Cougar Management Plan (CMP) which was adopted by the Oregon Fish and Wildlife Commission (Commission) on April 13, 2006. The CMP updates the 1993-1998 Oregon Cougar Management Plan and using the best available information, will guide Oregon's cougar management and provide strategies for resolution of human conflicts with cougars. The CMP establishes five objectives that seek through an adaptive management approach to maintain viable, healthy cougar populations in Oregon while reducing conflicts with livestock, humans, pets, and game mammals.

Oregon Department of Fish and Wildlife now seeks the assistance of the United States Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS), Wildlife Services program (Wildlife Services) to implement portions of the CMP calling for administrative cougar removal to help achieve the State's management objectives. Administrative removal is a proactive population reduction strategy in areas of historic conflict, and is distinct from responding to individual damage reports or complaints.

Normally, Wildlife Services proposes an integrated Wildlife Damage Management approach in which a combination of non-lethal and, where necessary, lethal methods could be used to resolve individual cougar damage problems. In this case the Commission adopted the 2006 Oregon Cougar Management Plan which already encompasses such an integrated approach. Oregon Department of Fish and Wildlife has plans to take actions to provide for public education and non-lethal and lethal approaches to cougar management, but has requested Wildlife Services' assistance with administrative cougar removal in areas with historically high conflict. The CMP has defined objectives to reduce cougar damages and complaints to levels that were in place in 1994 or 2000,

depending on the zone, while maintaining a healthy and sustainable cougar population at or above 1994 population levels. The proposal herein would require that ODFW pay 100 percent of Wildlife

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Services' operational costs for providing this service, should Wildlife Services decide to select the proposed action. Oregon Department of Fish and Wildlife would select the locations, number of cougar to be removed, and assess monitoring results to make ongoing management decisions about when, where, and how many cougars should be removed, and what samples and data are to be collected. Therefore, the only decision that Wildlife Services can make is whether or not to assist the State in this limited capacity as defined herein and in the CMP.

1.1 Purpose

Purpose for the Proposal

The purpose of the proposed action is to assist ODFW with meeting cougar conflict management objectives described in the 2006 Oregon Cougar Management Plan. The purpose of administrative removal (selective population reduction), is to bring down cougar numbers and conflicts in localized areas where cougar conflicts and population levels exceed CMP specified levels. These levels include management of losses and/or threats to livestock, pets, human safety, and game populations, and where other CMP specified action items have not been adequate to suppress conflicts on their own.

The Purpose of this Environmental Assessment

The National Environmental Policy Act (NEPA) (Pub. L. 91-190, 42 U.S.C. 4321-4347, January 1, 1970, as amended) requires that Federal agencies consider the impacts of their actions on the human environment and inform the public of their decisions. This environmental assessment (EA) will provide a vehicle for Wildlife Services' compliance with NEPA by:

- methodically assessing the environmental impacts of Wildlife Services' proposed role in the Oregon Cougar Management Plan;
- involving and informing the public through opportunity to review and comment on a pre-decision EA, and notifying the public of its decisions;
- assessing all substantive and relative issues and considering reasonable alternatives to the proposed action; and finally by,
- providing information necessary to the Federal decision maker to make an informed decision.

1.2 Need for Action

The need for action centers around reported, confirmed, and threatened damages to livestock, pets, and the need to manage cougar populations at levels compatible with ODFW species management plans for cougar, elk, deer, bighorn sheep and Rocky Mountain goats. ODFW has requested the assistance of the Wildlife Services program to help meet its statutory requirements under ORS 496.012 (Wildlife Policy) and management objectives described in ODFW species management plans. Human safety is also a primary concern when cougars are in close proximity to humans and kill pets and livestock. The need for action is related to the expanding cougar numbers in Oregon. Along with an increase in the human population, there has been an increase in the number of conflicts.

1.2.1 History of Cougar Management and Cougar Population Status

The history of cougar management and the associated population response is briefly summarized below and described in detail in the CMP (ODFW 2006) in three major segments.

1) Cougars were described as widespread and common throughout most of the forested parts of the State in the 1800s and early 1900s (Bailey 1936). During this period of European settlement, cougars were not managed or protected and conflicts with humans were resolved with bounties and unregulated take with hounds, traps, poisons, and unregulated shooting. The CMP notes that bounty payments for 200 or more cougars per year was not uncommon, peaking at around 300 in the early 1930s and then declining to 27 in 1961. The Oregon Legislature repealed the bounty system in 1961. Based on bounty records and population modeling (Keister and Van Dyke 2002), cougar numbers by the 1960s had declined markedly from historic levels. The 1961 statewide cougar population was estimated at approximately 200. In 1967, the cougar was classified as a game animal, which gave the Oregon State Game Commission (now ODFW) management responsibility. The Game Commission closed cougar hunting seasons during 1968 and 1969 although some cougars were still killed on livestock damage complaints.

2) From 1967 to 1995, cougars were classified as game animals which allowed ODFW to manage the population with controlled harvest (hunting). Game animal status allowed ODFW to implement population management by controlling harvest rates. In response to livestock damage complaints, ODFW slowly opened up controlled cougar seasons starting in 1970 and gradually increased the number of hunt areas and tags as the cougar population increased. Cougar tag fees went from $5 in 1975 to $50 in 1987, increasing the source of revenue to the State. The first *Oregon Cougar Management Plan* was adopted by the Fish and Wildlife Commission in 1987. Hunter harvest played a critical role in management accounting for 77–91 percent of the known cougars killed in the state from 1987–1994. Hunters, predominantly using trained dogs, were generally quite successful with an average success rate of 42 percent from 1970–1994. Hunters tended to take more mature males under this scenario. By 1993 ODFW estimated the statewide population at about 3,000 animals occupying approximately 80 percent of the state. ODFW used hunter harvest information, the trend in complaints received, the number of cougar taken to control damage, the estimated natural mortality, and the set tag numbers, hunt areas, and season lengths. The controlled hunt system was considered appropriate for addressing cougar damage complaints while meeting goals to maintain healthy cougar populations and provide recreational hunting opportunity. The system allowed ODFW to change harvest rates from year to year in response to changing conditions, as well as concentrate hunting efforts in areas with excessive damage problems.

3) The third period of cougar management began in 1994 when Measure 18, a citizen ballot initiative, passed during the November general election and made it unlawful for hunters to use dogs to hunt cougars (ORS 498.164). Without the use of dogs, hunters were significantly less successful and as a result, ODFW was unable to stabilize the population at the 1994 level of 3000. Quotas were set to stabilize the population if they could be met. Despite dramatic increases in tag sales, reduced tag prices and liberal seasons, hunter harvest has not been sufficient to stem a growing cougar population. With increases in the quotas, tags, and cougar numbers, hunter harvest levels are currently similar to those of 1994, but the proportion of the cougar population being harvested is now much smaller. By 2003, the modeled cougar population grew to an estimated 5100 cougars. Without the use of hounds, hunters that take cougars are more likely to take younger animals and more females are being taken compared to the period when hounds were used to trail cougars. According to hunter surveys, the cougars that are now harvested are often taken incidentally to other hunted species such as deer and elk.

In 1999 the Oregon Legislature adopted legislation allowing persons to legally take cougars posing a threat to human safety without a permit (ORS 498.166). In 2003 ORS 498.012 was modified to expand allowable take of cougars causing damage and posing a public health risk or nuisance.

The reader should refer to Chapter IV in the CMP (ODFW 2006) for more detailed discussion of the history of cougar management in Oregon, and for implications of hunter harvest on cougar management.

1.2.2 Cougar Threats to Livestock, Pets and Human Safety

Cougar predation on livestock

Livestock losses to cougars are small relative to the total livestock industry but to individual producers or ranches, losses can be serious or even devastating. Cougar damage is random and unpredictable, and when it occurs, large numbers of livestock can be killed in short periods of time, a behavior known as surplus killing. Cougar predation on livestock in Oregon includes attacks and kills of adult cattle and calves, adult sheep and lambs, adult horses and foals, goats, poultry, and other livestock, including llamas functioning as livestock guardian animals. Figure 1 shows the numbers of sheep and lambs killed by cougars, and cattle and calves killed by cougars and bobcats in Oregon in recent years as surveyed by the National Agricultural Statistics Service (NASS).

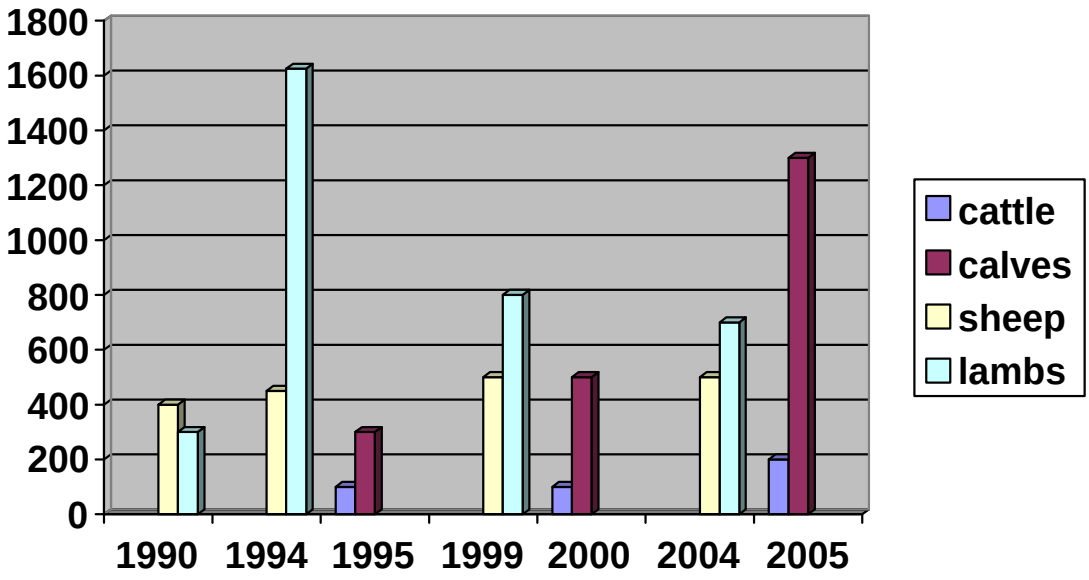

Figure 1. Number of Sheep and Lambs Killed by Cougars, and Cattle and Calves killed by Cougars and Bobcats in Oregon During Corresponding Years Surveyed by NASS (NASS 1996, 2001, 2003, 2006) .

As show in Figure 1, the National Agricultural Statistics Service's survey reports do not distinguish kills by bobcats and cougars in its survey of cattle and calf predation. We can assume that adult cattle kills are directly attributable to cougars, and the majority of calf kills are also the result of cougar predation in Oregon (Jeff Brent, Pers. Commun.). The National Agricultural Statistics Service reported that in 2005, 200 adult cattle and 1,300 calves valued at $657,300 were killed by cougars or bobcats in Oregon. This is up from 100 adult cattle and 500 calves valued at $206,300 killed by cougars or bobcats in 2000, and 100 adult cattle and 300 calves valued at $153,500 killed in 1995 (NASS 2006a and 2006b). Cattle inventories in Oregon have been declining somewhat with a trend moving away from more numerous smaller operations such as family run ranches, to fewer larger operations (NASS 2006b, 2001 and 1996a).

NASS (1991) reported that 400 sheep and 300 lambs were lost to cougars in 1990. NASS (1995) reported 450 sheep and 1,625 lambs lost to cougars in Oregon in 1994 valued at $88,200.

NASS (2000) reported that 500 sheep and 800 lambs, valued at $72,000 were killed by cougars in Oregon in 1999. NASS (2005) reported that 500 sheep and 700 lambs valued at $97,900 were lost to cougars in Oregon in 2004. The reduction in cougar predation on lambs shown in the NASS survey may be due to a number of factors

such as a decrease in the inventory of sheep and/or a trend away from smaller family farms in Oregon (NASS 2003). Smaller farms are more vulnerable to the effects of predation where larger farms tend to have a greater capacity to implement more costly management practices to protect sheep from predation. Another factor may be the loss of use of Federal grazing allotments. Successful cougar damage management programs are also thought to have contributed to a decline in predation rates of sheep.

Between 1996 and 2002, Wildlife Services received annual reports averaging losses of 215 sheep, 58 head of cattle and 16 horses killed by cougars (USDA WS MIS verified data in ODFW 2006). Reports to Wildlife Services are generally considered to show only that a problem exists, and do not represent the extent of damages since Wildlife Services does not have programs in 12 - 14 counties on a year to year basis.

Oregon Department of Fish and Wildlife (2006) has compiled cougar complaints it received about livestock as a separate category from other complaints since 1992. Livestock complaints include injuries and predation on livestock, and concerns with livestock safety where cougar or cougar sign has been observed. Not all cougar complaints can be verified due to the large volume of complaints compared with available staffing, and because cougars do not always leave detectable sign or evidence. Recorded cougar complaints have increased generally over this time period and are shown with other categories of complaints in Figure 2.

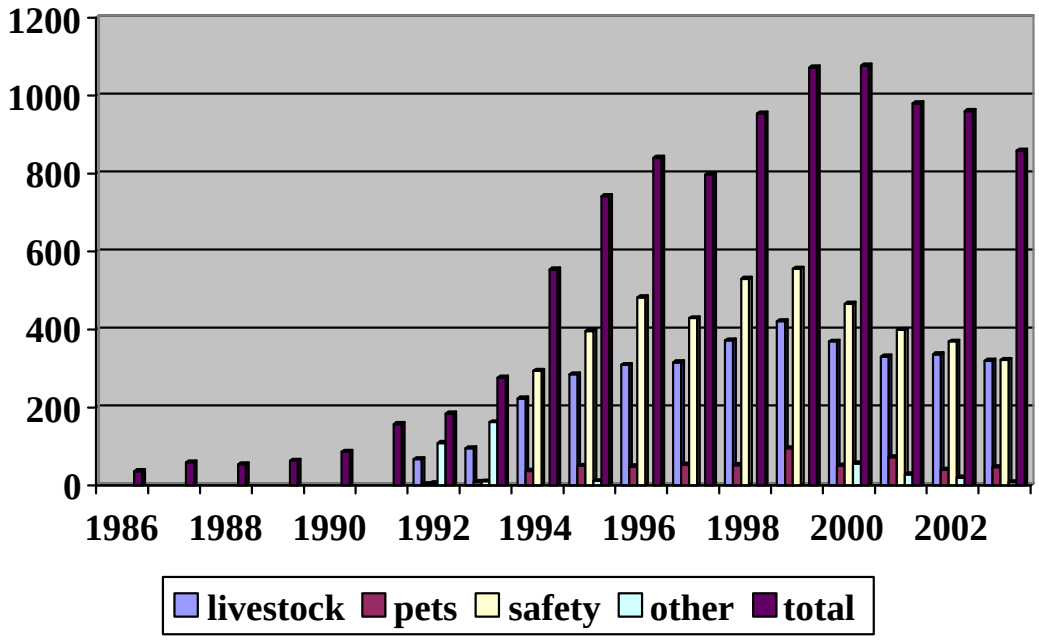

Figure 2. Cougar complaints between 1986 and 2003 by category reported in Oregon. Adapted from data in ODFW (2006).

Concerns for human safety from attacks on pets and livestock

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Oregon Department of Fish and Wildlife (2006) has compiled cougar complaints it received about pets and safety as separate categories from livestock complaints since 1992. Human safety and pet complaints include concerns for human safety where people have encountered a cougar or where a cougar or cougar sign is observed in populated areas. Cougar behaviors that result in human safety concerns include aggressive actions such as charging or snarling; or loss of wariness of humans as displayed by reported sightings during the day in areas with permanent structures used by humans.

Not all cougar complaints can be verified due to the large volume of complaints compared with available staffing, and because cougars do not always leave detectable sign or evidence. Recorded cougar complaints have increased generally over this time period and are shown in Figure 2.

Oregon citizens are naturally concerned with their safety when cougars attack pets and livestock nearby. When cougars kill game animals such as deer and elk and bury them in residential areas, there is reason for concern since this indicates the cougar plans to return to the kill site. The following photographs depict typical cougar predation attempts which cause concerns for humans and depict the serious nature of a cougar attack.

Cougar attacks on humans. Cougar attacks on humans are very rare but have been increasing in recent years (Cougar Management Guidelines Working Group 2005, Beier 1991, Riley 1998). Because of an increasing number of both fatal and non-fatal incidents in recent years in the western United States and British Columbia, and the increasing number of livestock and pet predation incidents and complaints, Oregon Department of Fish and Wildlife is concerned that there may be a growing threat to human safety. Fitzhugh et al. (2003) report there were 16 fatal and 92 non-fatal attacks on humans since 1890 in the United States and Canada but of those, seven fatal and 38 non-fatal attacks have occurred since 1991. Since 2003, there have been a fatal attack and three injuries in California (CDFG 2007) and three injuries in Colorado (CDOW 2006). In addition, one additional fatal and non-fatal attack in Montana should have been included in the Fitzhugh et al. (2003) report (R. Desimone, Montana Fish, Wildlife, and Parks, pers. commun.).

Two cougar attacks on humans have been reported in Oregon but were not included in the literature. A cougar reportedly attacked a boy at a school bus stop in 1976 near Junction City (personal communications with Stan Thomas, former WS employee who confirmed the attack, and Mike Thoele, former Register-Guard resident reporter from Junction City). Oregon State Police archived case investigation records are not available for 1976. On August 30, 2002, a cougar was reported to have attacked a person near the North Fork, John Day Wilderness (ODFW unpublished report), according to ODFW and OSP investigations. The 2002 attack was not confirmed by ODFW.

Figure 3. Horse attacked at children's summer camp in 2006.

The photograph in Figure 3 was taken in May 2006, two weeks after a cougar attacked the horse at a children's summer camp in Central Oregon. The horse was attacked in a corral adjacent to a dormitory that houses hundreds of children throughout the summer months. Buttons are sewn over the wound in an attempt to hold the stitches in place. The male cougar that attacked this horse was captured and killed by Wildlife Services after nine days of tracking with hounds and mules. Tracking and capturing individual offending cougars after a damage call is often highly labor intensive. Photo by S. Hebert, 2006.

Figure 4. Human safety threat and multiple livestock kills near fast food restaurant and school.

The call to remove the cougar that killed this llama shown in Figure 4 became a priority to Wildlife Services due to the presence of young children in the immediate area of the kill. The llama was attacked behind a fast food restaurant and close to a school. Wildlife Services verified that the same cougar that killed this llama also killed several ewes and lambs and three Barbados rams. The llama was a guard llama used to protect the sheep from coyote predation. All of these kills occurred in April 2006. The kills are an example of surplus slaughter behavior, livestock predation, and a human safety threat. Wildlife Services received additional reports of 30 sheep killed in the vicinity, possibly by the same cougar, but due to time constraints, was unable to verify the reports. Photo by J. Brooks, 2006.

A decreasing trend of cougar complaints and the reasons why there may be a decreasing trend is discussed in the CMP. Because depredation control has not declined, human safety complaints may have declined due to a more specific definition of sightings vs. damage, and because technical or direct assistance may have already been provided so no further complaints were filed. The CMP notes that communications with ranchers, damage control agents, and people that live in the forest/residential interface suggests that conflicts are continuing to increase in most parts of the state. Because tracking complaints has been inconsistent, the CMP would make tracking public complaints regarding cougar damage and safety more critical and consistent. A new form is being developed that would allow ODFW to

record more detail about the nature of the conflict. Figure 2 shows cougar complaints by category and sightings reported in Oregon from 1986 to 2003.

Figure 5. Example of surplus slaughter behavior by a male cougar in Umatilla County, Oregon during the mid 1990s. Photo courtesy of Wildlife Services.

1.2.3 Cougar Threats to Big Game Species

In Oregon, elk and deer are the primary prey for cougars (Toweill and Meslow 1977, Maser and Rohweder 1983, Toweill and Maser 1985, Nowak 1999). The number of prey consumed by an individual cougar varies with a number of factors including the cougar's age and reproductive status, weather conditions, and competition with other predators and scavengers (Iriarte et al. 1990). In some cases, cougar predation can have a significant impact on specific prey populations. Several studies have implicated cougar predation as limiting ungulate populations (Connolly 1978). However, some studies suggest predation is not a limiting factor. Thus the need to manage predation for other wildlife species should be determined on a case by case basis (Ballard et al. 2001, Connolly 1978).

When prey populations occur at low levels, cougar predation has been shown to limit population growth rates or recovery (Neal et al. 1987). In wildlife management, this phenomena is known as a predator pit. Cougars can affect prey populations through direct predation and through indirect influences. Bodenchuk and Hayes (in press) reviewed literature which shows a growing body of evidence that predators can have

significant secondary effects such as when prey populations utilize less favorable foraging or cover habitat to reduce predation risk.

Wildlife Services defers to the authority of ODFW to best understand the factors influencing and limiting prey populations and to make the determination whether predation management is likely to be a beneficial strategy. Therefore, predation management programs designed to enhance wildlife populations will only be conducted if biologists from ODFW determine that predation is likely to be a key factor limiting the prey population, and request Wildlife Services assistance with cougar management. This EA will not attempt to justify the reasoning for ODFW's individual decisions to implement cougar control on specific ungulate populations, since many management considerations beyond the scope of this EA and beyond the authority of Wildlife Services go into planning and decision making for game management. However, this EA will briefly summarize findings from the literature and other studies discussed in the CMP (ODFW 2006).

Cougar predation on bighorn sheep

Cougar predation has reduced and limited bighorn sheep population numbers, threatening viability of sheep populations (Wehausen 1996, Hayes et al. 2000). As of 2003, there were 12 separate herds of Rocky Mountain bighorn sheep in Oregon. Recent monitoring of radio-collared bighorns in Hells Canyon found the primary causes of mortality to be disease followed by cougar predation, which accounted for 27 percent of known mortalities (Cassirer 2004). Disease management is being handled by ODFW and is not within the scope of this document. Thirty-two herds of California bighorn sheep have been reestablished. Several herds have shown significant declines since the 1990s. Evidence suggests cougar predation as the primary cause of decline in several herds and partially responsible for others. Cougar predation has been identified in the Bighorn Sheep Management Plan as a factor limiting bighorn sheep populations and in compromising restoration efforts (ODFW 2003a). In Oregon, a study of radio-marked California bighorn sheep in the Leslie Gulch herd range found 54 percent of the documented mortalities were killed by cougars, and three other mortalities were suspected cougar kills (ODFW 2003, unpublished report in ODFW 2006). A study started in January 2004 to measure adult mortality of California bighorn sheep on Hart Mt. National Antelope Refuge showed mortality rates of 20 percent for adult rams and 11 percent for adult ewes with 50 percent of all mortality attributed to cougar predation during the first year of the study.

California bighorn sheep survey data in southeast Oregon indicate the Red Butte population (Owyhee River) has declined from 75 in 1994 to 10 in 2005. The Iron Point population (Owyhee River) has declined from 175 in 1994 to 50 in 2005. The Deary Pasture population (Owyhee River) has declined from 75 in 1994 to 20 in 2005. The Steens Mountain population has declined from 250 in 1994 to 125 in 2005. The Fish Creek Rim population was started in 1993 with 22 bighorns and increased to 78 animals observed by 1999. Since then it has steadily declined with 33

animals observed in 2004. Several transplant attempts in the Owyhee corridor have also failed to establish resident populations: North Fork Owyhee (1995), Middle Fork Owyhee (1994), North Table Mountain on the lower Owyhee (1994), and Sharon Creek on the upper Owyhee (1993). In all cases, declines appear linked to the winter of 1992-93 when mule deer herds were reduced approximately 50 percent due to severe winter conditions following several years of drought. When mule deer numbers were substantially reduced or eliminated, bighorn sheep may have become the primary prey for some individual cougars residing in bighorn sheep ranges. Since most of these bighorn sheep populations were small in size (less than 150 animals), cougar predation may have reversed population trends and essentially eliminated some populations. Two recent bighorn sheep transplants may have failed due to cougar predation. Three of 17 Rocky Mountain bighorn sheep released in the Minam River in 2000 were killed by cougars within 7 days of the release. The remaining bighorn sheep left the release area within 30 days and the transplant failed to establish a population. In December 2004, a California bighorn release on Steens Mountain was compromised when 5 of 10 radio-collared ewes were killed by cougars and the remaining animals moved from the release area.

Other states have experienced similar declines with cougar predation. In California, direct and indirect effects of cougar predation were considered a critical limiting factor to the continued survival of Sierra Nevada bighorn sheep (USFWS 1999b, Wehausen 1996), warranting an emergency listing and protection of the bighorn sheep subpopulation under the Federal Endangered Species Act. Immediate action was taken to prevent further declines due to predation. Direct effects referred to direct predation on bighorn sheep whereas indirect effects included cougars keeping bighorn sheep from returning to important wintering range. The lower quality forage in new wintering sites has resulted in sheep emerging from the winter months in poorer condition. This decline in physical condition has resulted in lower birth rates and decreased lamb survival (Wehausen 1996). Hayes et al. (2000) proposed that cougar predation on bighorn sheep may be impeding recovery of a federally listed endangered bighorn sheep population in the Peninsular Ranges of California. And in California, cougar predation was found to be the primary cause of a significant decline in mule deer in the Sierra Nevada Mountains, taking both adults and fawns (Harrison 1989).

Wehausen (1996) reported several instances where cougar predation on bighorn sheep populations reduced population growth rates and stopped the opportunity to remove surplus bighorn sheep for relocation to historic habitat, thereby halting the restoration program. Kamler et al. (2002) suggested cougar predation was responsible for the decline in bighorn sheep populations in most areas of Arizona; these declines were most likely linked to overall declines in mule deer populations which resulted in cougar taking bighorn sheep as alternate prey. Rominger et al. (2004) similarly reported that cougars limited expansion of a transplanted population of bighorn sheep in New Mexico.

Cougar harassment is suspected of causing the abnormal behavior. Besides direct loss of individuals, scattering may result in use of sub-optimal habitat, further compromising the transplant's success (ODFW 2003a).

Cougar predation effects on elk

Cougar predation has been implicated in low calf elk survival and elk population declines. In southeast Washington, cougar predation accounted for more than half the known elk calf mortality (Myers et al. 1998) and end of winter calf:cow ratios averaged 21:100. Cougars were found to impact calf survival in two Idaho study areas with low calf ratios. Cougars were responsible for 38 percent of known calf mortalities in the Lochsa River study area and 36 percent in the Clearwater River study area (P. Zager, Idaho Department of Fish and Game, personal communication in ODFW (2006)).

In northeast Oregon, calf:cow ratios declined significantly since the early 1990s in eight Wildlife Management Units (WMUs). Elk populations declined in those same areas (Oregon Department of Fish and Wildlife 2003b) even as numbers of elk hunters and harvest have been reduced in an effort to maintain elk populations at management objectives. Since 2000, elk calf:cow ratios have declined in Ukiah, Heppner, Starkey, Desolation, and Fossil WMUs from long-term averages of 35-40 calves per 100 females to less than 20 calves per 100 females. In the Wenaha WMU the elk population declined from more than 4,200 to less than 1,500 elk from 1985 to 2000 (Oregon Department of Fish and Wildlife 2003b). In this area, cougars were responsible for 69 percent of the radio-collared elk calf mortalities, while pregnancy rates of prime aged cows were high (Rearden 2005). Figures 6 and 7 show cougar predation in Sled Springs Wildlife Management Unit, where ODFW project personnel are investigating mortalities of radio-collared calf elk. The research is designed to investigate the relationship between elk nutritional condition and predation on calf elk survival, and is ongoing in NE Oregon.

Figure 6. ODFW research biologist examining cougar predation on an elk calf in June 2005 in the Sled Springs Wildlife Management Unit. Photo courtesy of ODFW.

Figure 7. Calf elk killed and buried by cougar in June 2005. Photo courtesy of ODFW.

In most years, elk body condition and pregnancy rates in northeast Oregon have been consistently high, and generally better than any other area in the state (Oregon Department of Fish and Wildlife 2003b). The relationship between calf elk survival and cougar population abundance was analyzed using long-term data sets collected by ODFW. Annual elk pregnancy rates have been determined for many WMUs from more than 10,000 hunter-collected reproductive samples (Kohlmann 1999). Biologists determined end-of-winter calf:cow ratios from field inventories for most WMUs (Oregon Department of Fish and Wildlife 2003b). Data were combined to provide a calf survival index (percent) by dividing the end-of-year calf:cow ratio by pregnancy rates determined for the previous year. A cougar abundance index was calculated from the sum of all known cougar mortalities for the year elk were classified and the following year, and expressed as the number killed per 100 mi^2. The cougar abundance index reflects relative cougar population within a WMU. Pregnancy rate data were determined from hunter-collected samples obtained between 1986 and 2002 and restricted to WMUs with a minimum of 10 reproductive tracts from adult cow elk ages 3 to 13. WMUs included Ochoco (11 years), Grizzly (2 years), Heppner (13 years), Ukiah (9 years), Desolation (11 years), Starkey (16 years), Mt. Emily (1 year), Wenaha (7 years), Sled Springs (13 years), and Chesnimnus (12 years). As cougar numbers increased, calf elk survival decreased. While several factors may contribute to low calf:cow ratios, evidence is accumulating that suggests cougar predation can be a major factor contributing to low recruitment in Rocky Mountain elk.

Cougar predation on deer

Cougar predation also impacts deer populations. In California, cougar predation was found as the primary cause of a significant decline in mule deer in the Sierra Nevada Mountains (Harrison 1989). A 3-year Oregon study found cougar predation of adult mule deer as the leading mortality cause, accounting for 33 percent of all known mortality (Mathews and Coggins 1997). A study of a wintering mule deer herd in Hells Canyon, Idaho showed a 25 percent annual mortality rate for adult does from 1999-2001 (Edelmann 2003). The primary cause of adult doe mortality was cougar predation. A review of published studies addressing deer predator relationships by Ballard et al. (2001) indicated impacts of predation were confounded by numerous factors and predation may be significant in some areas under certain conditions.

Cougar predation on mountain goats

Cougar predation, along with predation by wolves and grizzly bears, was found to be a major source of mortality on young goats in Alberta, Canada (Festa-Bianchet et al. 1994). There are only a few hundred Rocky Mountain goats in Oregon. Predation, particularly on small herds such as during reintroduction efforts, could reduce the success of re-establishing Rocky Mountain goats in additional areas.

Cougar Predation on other ungulate species

In northeast Washington and northern Idaho, Wakkinen and Johnson (2001) proposed that cougars were negatively affecting population recovery of woodland caribou in part because white-tailed deer were alternative prey for cougars, allowing the cougar population to remain at high numbers. In contrast to a predator pit, a California deer herd declined from about 6,000 to about 1,000 animals over 6 years, most likely because of drought, then increased in the following 5 years to about 2,000 while the adult cougar population decreased 50 percent during the same period (Pierce et al. 2000a). In this example, drought may have acted as a density independent factor limiting this deer population. In this area in California, there were no sizable alternative prey sources of wild ungulates.

1.3 Location

The proposed project location is in the State of Oregon. Individual actions may be carried out at locations to be identified by ODFW as having high levels of conflicts with cougars in excess of CMP specified objectives, where hunting, private preventative actions, reactive cougar damage management, and education have not been sufficient to resolve threats and damages to livestock, pets, human safety and game to CMP specified objectives. Wildlife Services would not make determinations where the need for action exists, and would defer to ODFW's authority to make those decisions. Administrative removal would initially be focused in three locations. Jackson County, Heppner, and East Beulah have been identified as initial locations for administrative removal. On June 9, 2006, ODFW notified the Oregon Fish and Wildlife Commission and the Public of its decision to administratively remove cougars from these locations. Administrative removal at the first three sites would be anticipated to occur over approximately one to three years until monitoring can produce sufficient information for ODFW managers. As monitoring (as discussed in ODFW (2006)) provides new information, ODFW will adapt CMP actions accordingly and modify administrative removal plans at the three locations and/or decide if additional sites warrant administrative removal. When and if new sites are identified, ODFW would notify the Commission and the public prior to taking action. Oregon Department of Fish and Wildlife would notify the public through the public Commission meeting process, by providing information on the ODFW website, including maps of target areas, and through popular press releases.

Because ODFW makes the decisions for site selection, this EA will address all substantive issues (environmental resources or the affected environment) that may be affected wherever administrative removal could occur. Should new issues arise that were not considered in this EA when new sites are selected, Wildlife Services would revise its NEPA compliance procedures accordingly to consider environmental effects and inform decision makers and the public of its findings. Most issues that could arise from removing cougars are not unique to specific locations. Therefore assessing the effects of cougar removals on a statewide basis is a reasonable scope of analysis. Adaptive management processes described further under activities related to the proposed action which may lead ODFW to identify further locations

for administrative removals would fall within objectives set in the 2006 final Oregon Cougar Management Plan (ODFW 2006) and summarized herein (Section 1.4).

Appendix B includes maps of the immediate proposed project locations, associated land jurisdiction, and major features.

1.4 Objectives and Scope

Wildlife Services objective under this proposal is to assist ODFW with reducing conflict by cougars to levels expressed in objectives in the 2006 Oregon Cougar Management Plan (ODFW 2006). Administrative removal is a last resort action item that would be used to enhance other lethal and non-lethal action items listed in the CMP. The Oregon Fish and Wildlife Commission, in adopting the CMP, has provided the objectives and scope of this EA in terms of ODFW's objectives and Wildlife Services involvement in administrative removals.

ODFW management objectives call for reducing cougar conflicts while managing a sustainable cougar population at no less than the estimated 1994 level of approximately 3,000 cougars. The Oregon Cougar Management Plan discusses objectives in detail (refer to Chapter v, Objective 1 in ODFW 2006 for additional detail

Objective 1. Objective 1 in the CMP is to ensure a healthy statewide cougar population of at least 3000 cougars (1994 population) and sets minimum acceptable population levels for each Cougar Management Zone (Figure 8) in Oregon. Established total mortality quotas by zone, and criteria for acceptable proportions of adult females in the mortality, are in place as mechanisms to protect cougar populations by halting administrative removals if they are met. The 2003 and minimum acceptable population levels by zone are shown in Table 1.

The Oregon Cougar Management Plan (ODFW 2006) objectives 2, 3, 4, and 5 include the potential role and objectives of Wildlife Services assistance in administrative removal of cougars. Objectives 2, 3, 4, and 5 are *conditioned* upon objective 1 being met. In other words, the minimum cougar population must be maintained before administrative removal could be added to other management strategies.

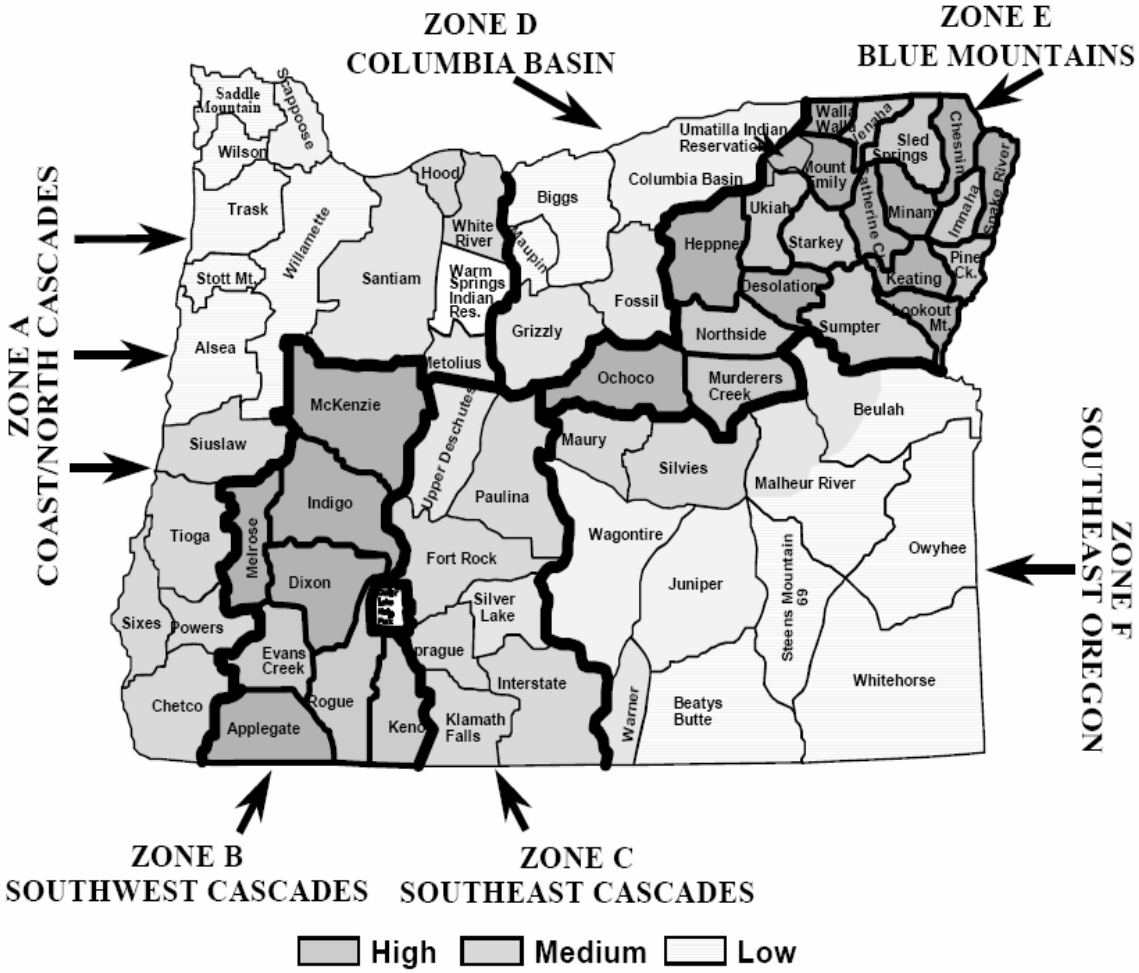

Figure 8. Cougar Management Zones in Oregon and Relative Cougar Population Densities

Objective 2: ODFW will proactively manage cougar-human conflicts as measured by non-hunting mortality (cougars taken as a result of individual livestock, human safety/pet complaints). Wildlife Services may respond to ODFW request for assistance to reduce a local cougar population and manage cougar-human conflicts so that non-hunting mortality (depredation take only) does not exceed 1994 level of 15 cougars in Zone A; 1994 level of 11 cougars in Zone B; 2000 level of 5 cougars in Zone C; 2000 level of 5 cougars in Zone D; 1994 level of 13 cougars in Zone E; and 2000 level of 11 cougars in Zone F.

Cougar Management Zone	Estimated 2003 Cougar Population	Minimum Minimum Cougar Population
A: Coast/N. Cascades	615	400
B: SW Cascades	1,534	1,200
C: SE Cascades	331	120
D: Col. Basin	318	80
E. Blue Mts.	1,581	900
F: SE Oregon	722	300
TOTAL	5,101	3,000

Table 1. Estimated 2003 cougar population and minimum populations for cougar management zones

Objective 3: ODFW will proactively manage cougar-human safety/pet conflicts as measured by human safety/pet complaints. Human safety complaints include situations where cougars appear habituated to human activity and development, and are often seen during daylight hours in close proximity to houses and people. Pet losses due to cougars in populated areas are considered a human safety concern because of the close association of pets and humans. ODFW may take management action to reduce the cougar population. Wildlife Services may assist ODFW with management of cougar-human conflicts so that the cougar populations and distribution, as indicated by human safety/pet complaints, do not exceed 1994 or 2000 levels of:

1994 level of 191 complaints in Zone A;
1994 level of 84 complaints in Zone B;
2000 level of 28 complaints in Zone C;
2000 level of 2 complaints in Zone D;
1994 level of 22 complaints in Zone E; and
2000 level of 4 complaints in Zone F.

Objective 4: ODFW will proactively manage cougar-livestock conflicts as measured by livestock damage complaints. Wildlife Services may assist ODFW to reduce the cougar population to manage cougar-livestock conflicts so that the cougar population and distribution, as indicated by livestock complaints, do not exceed:

1994 levels of 102 complaints in Zone A;
1994 level of 69 complaints in Zone B;
2000 level of 12 complaints in Zone C;
2000 level of 5 complaints in Zone D;
1994 level of 25 complaints in Zone E; and
2000 level of 27 complaints in Zone F.

Objective 5: ODFW will proactively manage cougar populations in a manner compatible and consistent with management objectives for other game mammals outlined in ODFW management plans. Wildlife Services may assist ODFW to remove cougar in areas where hunting and other methods have not proved effective at sufficiently reducing cougar conflict with bighorn sheep, mountain goat, elk and deer.

For a complete discussion of assumptions and rationale behind the specified objectives, see Chapter V, 2006 final Cougar Management Plan (ODFW 2006). The proposed action is designed to be implemented in a manner consistent with these objectives.

Scope of Analysis

This EA analyzes Wildlife Services role in administrative (proactive) removal of cougars in locations that would be identified by ODFW through criteria in objectives and guidelines described in the 2006 Oregon Cougar Management Plan. The tools that are within the scope of analysis of this EA are trailing dogs as the predominant method, but also foot hold traps, foot and neck snares, and cage traps and shooting. The action analyzed is intentional localized cougar population reduction by removing cougars where ODFW has identified excessive damage conflicts with humans, livestock, pets, and/or big game.

The first three locations for administrative cougar removal have been identified in Jackson County in southwest Oregon to address human safety/pet concerns, east Beulah wildlife management unit in Malheur County to address livestock damage, and the Heppner wildlife management unit area of Morrow County for protection of big game. Modifying plans to halt, suppress, or increase removal in these areas, and identification of new sites will be developed as ODFW assesses results of monitoring, and makes changes through its adaptive management process (as described in detail in the CMP (ODFW 2006, Chapter 6). The role of Oregon Department of Fish and Wildlife in developing removal plans based on monitoring is described in detail in the CMP (ODFW 2006), is incorporated by reference as important background information for the proposed action alternative, but is outside of the scope of WS authority and control for decision making.

Administrative cougar removal would not occur in designated Wilderness, Wilderness Study Areas, National Park Service lands, Oregon State Parks, or tribal reservations.

The issues related to cougar removal are appropriately discussed in a programmatic document because they are not unique to specific sites but can occur wherever humans, pets, livestock, big game and cougars conflict. Further site-specific analysis would not improve the analysis and would not bring forth new information that could change a decision resulting from this EA (Eccleston 1995).

Wildlife Services has had an ongoing integrated wildlife damage management program which includes cougar damage management in response to individual requests for assistance from private property owners and others. The ongoing integrated program was considered in the development of the CMP (ODFW 2006) and results are used as a part of ODFW's overall monitoring strategy to aid in determining when objectives would be met and when administrative removal should begin and cease (CMP Chapter V). Integrated cougar damage

management where Wildlife Services responds to private and individual complaints is not part of the scope of analysis for the proposal herein but was considered under cumulative impacts (Section 4.1.1).

This EA will remain valid until Wildlife Services, in consultation with its cooperating agencies, determines that the need for action, issues driving this EA, environmental conditions, or the CMP change substantially. Substantive changes in these areas would trigger the need to review and amend the analysis and involve the public. The need for action to protect human safety, pets, livestock and big game from cougar threats as described in Sections 1.2.2 and 1.2.3 would not be expected to change substantially from one location to the other and were described as typical scenarios that could occur wherever humans, livestock, pets, and ungulate game species come into conflict with cougars. Adaptive management would be used to incorporate new information into ODFW's management schemes which may affect when and where Wildlife Services would take actions to remove cougars beyond the first three specific locations identified for immediate cougar removal. Cougar management as proposed is expected to continue into the foreseeable future notwithstanding major legislative or budgetary changes affecting cougar management.

Should Wildlife Services adopt the proposed action and exceed or anticipate exceeding its proposed maximum administrative removal of 200 cougars per year, this EA shall require additional review, public involvement and a possible revision of the decision.

1.5 Summary of Public Involvement Efforts

Public participation in the National Environmental Policy Act (NEPA) process for this EA was conducted consistent with Wildlife Service's NEPA procedures and has three major components. Issues related to the proposed action were identified from: 1) agency, focus group, and public involvement processes during CMP development; 2) interagency meetings after CMP adoption by the Oregon Fish and Wildlife Commission; and 3) Wildlife Service's own public outreach process on the pre-decision EA. The three steps are discussed in more detail in this section.

1. The 2006 Oregon Cougar Management Plan took over a year to develop, involved meetings with the Oregon Fish and Wildlife Commission, agency meetings, and 10 public meetings. ODFW carefully considered input from peers, stakeholder groups and the public in the development of the CMP. Wildlife Services was a participant in focus group meetings. The focus groups were comprised of a diverse membership representing individuals and organizations with a broad spectrum of opinions, philosophies and values on how natural resources in Oregon should be managed. The focus group analyzed the numerous public comments collected by ODFW and helped identify where ODFW needed to do more analysis to respond to public comments. The draft Plan also received external peer review. Wildlife Services also reviewed public comments on ODFW's 2005 Cougar Management Plan. The draft CMP was made available to the public for review and comment from August 12, 2005 to November 20, 2005. ODFW reviewed each public communication and categorized them into one of 32 comments. In total, 2,266 comments were recorded when the Commission approved the CMP.. Since

Wildlife Services proposed action is one of the action items of the CMP, some of the comments on the CMP were seen as relevant to Wildlife Services' proposal and were considered as part of Wildlife Services' NEPA scoping process. Substantive comments from the CMP that related to Wildlife Services actions were considered in the development of this EA.

2. Wildlife Services formed an interdisciplinary team with its cooperating agencies who have jurisdiction by law or special expertise. The cooperating agencies, Oregon Department of Fish and Wildlife (ODFW), Oregon Department of Agriculture (ODA), and Oregon State Police (OSP), participated in the development of a draft EA. Several Federal and State agencies and Tribes that may have had an interest in the outcome were also consulted during the development of the draft EA (see list of persons and agencies consulted). All agency and Tribal comments have been considered in the development of the pre-decision EA.

3. The March 2, 2007 pre-decisional EA has been made available to the public by directly mailing notices of the availability of the EA to all people who have expressed interest in this or similar Wildlife Services activities, by posting the pre-decision document and notice of its availability on the Wildlife Services website http://www.aphis.usda.gov/wildlife_damage/nepa.shtml, and by issuing legal notices in general circulation newspapers (Oregonian, East Oregonian, Statesman Journal, Bend Bulletin, and Medford Mail Tribune) announcing its availability. Anyone who provides comments or expresses interest in this proposal during the public comment period of this EA will receive a notice of the decision.

1.6 Relationship of this Environmental Assessment to other Environmental Documents

2006 Oregon Cougar Management Plan, Oregon Department of Fish and Wildlife. 3406 Cherry Ave., NE, Salem Oregon 97303. The CMP is incorporated by reference and relevant sections are summarized herein. The relationship of the CMP to this EA is that it provides the framework for establishing the Purpose and Need for the proposal herein, it defines precise objectives, triggers for the proposed action to occur, and it defines monitoring and adaptive management that would drive the proposed action. In addition, the extensive public involvement process which occurred during CMP development is considered an important scoping element in considering public and agency input to this EA. This EA is consistent with ODFW management goals.

Wildlife Services Programmatic Final Environmental Impact Statement. Wildlife Services (formerly called Animal Damage Control (ADC)) has issued a Final Environmental Impact Statement on the national APHIS-Wildlife Services program (USDA 1994) and Record of Decision published in 1995. The FEIS received minor updates in 1997 (USDA 1997, revised). This EA will reference USDA 1997, revised. Pertinent and current information available in the EIS has been incorporated by reference into this EA. Proposed tools, with the exception of trailing dogs, have been evaluated in a formal risk assessment in Appendix P of the EIS and are pertinent to this EA.

Wildlife Services Environmental Assessments for Wildlife Damage Management in the Northwest, Roseburg and John Day Districts

The Wildlife Services Roseburg, John Day, and Northwest District offices prepared EAs and Findings of No Significant Impact for ongoing integrated predator damage management programs in all the three Wildlife Services Districts in Oregon in 1995, 1996 and 1997, respectively. The analyses in each EA included cougar damage management and related issues but did not evaluate a proactive cougar removal program. The cumulative impacts of the Proposed Action in this EA considers effects from the three ongoing District programs.

Oregon Department of Fish and Wildlife Management Plans

The Oregon Department of Fish and Wildlife has developed, and Commission has adopted, species management plans for elk, mule deer, black bear, cougar, bighorn sheep and Rocky Mountain goats. These animals are all classified as game mammals in Oregon. Each plan is independent of the other plans. However, each plan is designed to interact and be compatible with the plans for other species. Two examples are setting elk management objectives below the biological carrying capacity in some areas partially to benefit mule deer; and managing for lower cougar numbers in specific areas to benefit elk.

1.7 Authority and Compliance

Wildlife Services cooperates with land and wildlife management agencies to resolve wildlife damage problems in compliance with applicable Federal, State and local laws.

Based on agency relationships, missions, and legislative mandates, Wildlife Services is the "lead agency" and "decision maker" for this EA, and therefore responsible for the EA's scope and content. As cooperating agencies, the ODFW, ODA, OSP have provided input on this EA and will provide advice and recommendations to Wildlife Services on when, where, and how cougar removal could be conducted, and what information should be collected during the process. Wildlife Services is also consulting with the USFWS, USFS, BLM, potentially affected Tribes, including all agencies and tribes that provided input to the ODFW during the development of the CMP.

Wildlife Services consults and cooperates with other Federal and State agencies as appropriate to ensure that all WS activities are carried out in compliance with all applicable Federal laws.

1.7.1 Authority of Federal and State Agencies in Cougar Management

APHIS-Wildlife Services.

CHAPTER 1. PURPOSE AND NEED FOR ACTION

The Wildlife Services program is authorized to carry out wildlife control programs necessary to protect the Nation's agricultural and other resources. The primary statutory authorities are the The Act of March 2, 1931 (46 Stat. 1468; 7 U.S.C. 426-426b) as amended, and the Act of December 22, 1987 (101 Stat. 1329-331, 7 U.S.C. 426c). WS recognizes that wildlife is an important public resource greatly valued by the American people. By its very nature, however, wildlife is a highly dynamic and mobile resource that can damage agricultural resources, pose risks to human safety, and affect other natural resources. The WS program provides Federal leadership in helping to solve problems that occur when human activity and wildlife are in conflict with one another.

Oregon Department of Fish and Wildlife (ODFW)

The ODFW has the responsibility to manage all protected and classified wildlife in Oregon, except federally listed threatened and endangered (T&E) species, regardless of the land class on which the animals are found (Oregon Revised Statutes (ORS) 496.012, 496.118).

It is the policy of the State of Oregon (ORS 496.012 Wildlife Policy) that wildlife shall be managed to prevent serious depletion of any indigenous species and to provide the optimum recreational and aesthetic benefits for present and future generations of the citizens of this state. In part, this policy states that the Oregon State Fish and Wildlife Commission shall represent the public interest of the State of Oregon and: maintain all species of wildlife at optimum levels; regulate wildlife populations and the public enjoyment of wildlife in a manner that is compatible with primary uses of the lands and waters of the state; and make decisions that affect wildlife resources of the state for the benefit of the wildlife resources and to make decisions that allow for the best social, economic and recreational utilization of wildlife resources by all user groups.

Oregon state law allows a landowner or lawful occupant to take any cougar that is causing damage to land, livestock or agricultural crops without first obtaining a permit from ODFW (ORS 498.012). The law requires the landowner to notify ODFW immediately of the methods used and species and number of animals taken. ODFW also regulates the disposition of cougars taken for damage management (OAR 635-002-0008).

In Oregon cougar management is the responsibility of ODFW. Thus, if the NEPA process results in a decision to implement the proposed action, a new MOU and Cooperative Agreement between the ODFW and Wildlife Services would give Wildlife Services authority to administratively remove cougar in areas identified by ODFW according to the ODFW Cougar Management Plan.

Oregon State Police – Fish and Wildlife Division (OSP)

The purpose of the Fish and Wildlife Division of the OSP is to ensure compliance with the laws and regulations that protect and enhance the long term health and equitable utilization of Oregon's fish and wildlife resources and the habitats upon which they depend.

Oregon Department of Agriculture (ODA)

The Oregon Department of Agriculture aids citizens in resolving certain types of conflicts with wildlife. The ODA currently has a MOU, Cooperative Agreement, and Annual Work plan with Wildlife Services. These documents establish a cooperative relationship between Wildlife Services and ODA, outline responsibilities, and set forth annual objectives and goals of each agency for resolving wildlife damage issues in Oregon.

United States Forest Service (USFS) and United States Bureau of Land Management (BLM).

The USFS and BLM have the responsibility to manage Federal lands under their jurisdiction for multiple uses including livestock grazing, timber production, recreation, and wildlife habitat, while recognizing the state's authority to manage resident wildlife. Both the USFS and BLM recognize the importance of managing wildlife damage on lands and resources under their jurisdiction, as integrated with their multiple use responsibilities. Wildlife Services coordinates work activities with USFS and BLM through annual work planning processes.

1.7.2 Compliance with Federal and State Laws

Several Federal laws regulate cougar damage management. Wildlife Services, complies with relevant Federal and State laws, and consults and cooperate with other agencies as appropriate. The following Federal and State laws are relevant to the actions considered in this EA:

National Environmental Policy Act (NEPA). NEPA requires that Federal actions be evaluated for environmental impacts, that these impacts be considered by the decision maker(s) prior to implementation, and that the public be informed. This EA has been prepared in compliance with NEPA (42 USC Section 4231, et seq.,); the President's CEQ Regulations, (40 CFR Section 1500 – 1508), and USDA APHIS NEPA Implementing Regulations (7 CFR Part 372).

The proposed action described herein is one which normally requires an EA but not necessarily an EIS under USDA APHIS NEPA implementing procedures (7 CFR 372.5(b)). However one purpose of any EA is to ". . . briefly provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact" (40 CFR 1508.9). If the environmental impacts are found to be significant, the NEPA process would be continued and an Environmental Impact Statement would be prepared. If the impacts

of the proposal are not found to be significant on the human environment, a Finding of No Significant Impact and decision to implement the project may be issued.

Endangered Species Act (ESA). It is Federal policy, under the ESA, that all Federal agencies shall seek to conserve endangered and threatened species and shall utilize their authorities in furtherance of the purposes of the ESA (Sec.2(c)). Section 7 consultations with the USFWS are conducted to use the expertise of the USFWS to ensure that "any action authorized, funded, or carried out by such an agency . . . is not likely to jeopardize the continued existence of any endangered or threatened species. Wildlife Services conducts formal Section 7 Consultations with the FWS at the National level and informal or formal consultations with the FWS at the local level when proposed actions may affect Federally listed species.

Protection of Children from Environmental Health and Safety Risks (EO13045). Children may suffer disproportionately from environmental health and safety risks for many reasons. Cougar management as proposed in this EA would only involve legally available and approved damage management methods in situations or under circumstances where it is highly unlikely that children would be adversely affected. Therefore, implementation of the proposed action would not increase environmental health or safety risks to children.

ODFW - Wildlife Policy (ORS 496.012). It is the policy of the State of Oregon that wildlife be managed to prevent serious depletion of any indigenous species and to provide the optimum recreational and aesthetic benefits for present and future generations of the State. Included in this wildlife policy is maintaining all species of wildlife at optimum levels.

Measure 18 of 1994 and ORS 498.164. A 1994 ballot measure (Measure 18) eliminated the public use of dogs for cougar hunting. However, Measure 18 specifically maintained provisions that allow employees of county, state, and federal agencies to use dogs while acting in their official capacities. Another ballot initiative in 1996, Measure 34 that would have repealed Measure 18 and re-instituted the use of dogs for public cougar hunting failed to pass. Thus, the citizens of Oregon have twice voted that sport hunters shall not use dogs to pursue cougars

U.S. Forest Service. Under the Animal Damage Control Act of 1932, as amended, (7 U.S.C. 426-426c), the USFS and APHIS-Wildlife Services, along with the states, cooperate to manage animal damage on National Forest System lands. Under the framework of a MOU between the USFS and APHIS-Wildlife Services, APHIS-Wildlife Services is designated as the lead agency concerning animal damage management activities involving predators on National Forest System lands. This includes a responsibility to maintain technical expertise in the science of animal damage management, control tools and techniques, conducting management programs, and complying with the National Environmental Policy Act (NEPA) for activities related to predator control.

The USFS is responsible for the management of land and resources under its jurisdiction and for conducting non-predator control operations on National Forest System lands, including NEPA compliance on these activities. The MOU directs the USFS to coordinate with APHIS-Wildlife Services in the development and annual review of animal damage management work plans governing APHIS-Wildlife Services' activities on National Forest System lands and to cooperate in APHIS-Wildlife Services' NEPA processes.

Bureau of Land Management. Under the Animal Damage Control Act of 1932, as amended, (7 U.S.C. 426-426c), BLM and APHIS-Wildlife Services, along with the states, cooperate to manage animal damage on Bureau of Land Management lands. Similar to the USFS, BLM and APHIS-Wildlife Services have entered into a MOU which identifies the roles and responsibilities of each agency in animal damage management operations and coordination, and NEPA compliance. The BLM is responsible for the management of land and resources under its jurisdiction and for conducting non-predator control operations on its' lands, including NEPA compliance on these activities. The MOU directs BLM to coordinate with APHIS-Wildlife Services in the development and annual review of animal damage management work plans governing APHIS-Wildlife Services' activities on BLM lands and to cooperate in APHIS-Wildlife Services NEPA processes.

Migratory Bird Treaty Act. The Migratory Bird Treaty Act provides the Service regulatory authority to protect species of birds that migrate outside the United States. All cooperating agencies coordinate with the Service on migratory bird issues. Migratory birds would not be affected by this proposal except in an unlikely event of non-target capture or lead poisoning from scavenging on predators shot with lead containing ammunition. Any impact on a migratory bird would be reported to the Service, Migratory Bird Management Office. See Chapter 4, Impacts on non-target species.

National Historic Preservation Act (NHPA) of 1966, as amended. The NHPA requires Federal agencies to: 1) evaluate the effects of any Federal undertaking on cultural resources, 2) consult with the State Historic Preservation Office regarding the value and management of specific cultural, archaeological and historic resources, and 3) consult with appropriate American Indian tribes to determine whether they have concerns for traditional cultural resources in areas of these Federal undertakings. We have determined that the proposed action is not a Federal "undertaking" as defined by NHPA and would not affect cultural resources.

Executive Order 12898 - Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. Environmental Justice (EJ) promotes the fair treatment of people of all races, income and culture with respect to the development, implementation and enforcement of environmental laws, regulations and policies. Fair treatment implies that no person or group of people should endure a disproportionate share of the negative environmental impacts resulting either directly or indirectly from the activities conducted to execute this

country's domestic and foreign policies or programs. All WS activities are evaluated for their impact on the human environment and compliance with Executive Order 12898 to ensure EJ. WS personnel use wildlife damage management methods as selectively and environmentally conscientiously as possible. No pesticides are proposed for use. It is not anticipated that the proposed action would result in any adverse or disproportionate environmental impacts to minority or low-income persons or populations

CHAPTER 2. DESCRIPTION OF ALTERNATIVES

2.1 Alternative 1 – Remove Cougars From Areas with Excessive Damage as Specified by ODFW (Proposed Action Alternative)

This alternative would allow Wildlife Services to administratively remove cougars from specific locations identified by ODFW based on objectives summarized in Chapter 1 of this EA, and detailed in the Oregon Cougar Management Plan (CMP) (ODFW 2006, Chapter V). The maximum number of cougars that Wildlife Services expects to administratively remove at full working capacity under the Oregon Cougar Plan would not exceed 200 animals.

Oregon Department of Fish and Wildlife would request that APHIS-Wildlife Services, in consultation with land management agencies and private landowners, remove cougars where conflicts with livestock and/or big game and/or pets and human safety are considered to be excessive (see Section 1.4, Objectives for those levels considered excessive). As described in Chapter 1, administrative removal would only be requested if the estimated cougar population exceeded 1994 levels in the cougar management zone, non-hunting mortality is above acceptable levels, and other available means (action items as specified in the CMP) for reducing conflicts have not met the objectives. Administrative removal is a last resort action and would only be used in conjunction with existing cougar damage management, hunting, landowner actions, and education. Using monitoring results in an adaptive management approach, ODFW could determine when, where and how many individual cougars would be removed.

The proposed action would employ highly skilled cougar trackers that use sign, sighting, and specialized methods to locate, track, study, capture and remove targeted cougars in as humane a manner as practicable. The locations and number of cougar to be removed would be decided by ODFW through the monitoring and adaptive management as discussed in the CMP.

The primary and preferred method to be used would be specially trained hounds wearing radio tracking collars to trail and locate specific individual cougars which would then be euthanized by gunshot. In some cases the cougar would be immobilized by lethal injection. Hounds are preferred because this is typically the most effective and selective method of capturing cougars, while having the lowest potential to affect non-target animals. Alternative methods that could be used to take cougars are foot hold traps, foot or neck snares or cage traps, with euthanasia.

Wildlife Services uses many standard operating procedures that minimize potential harm to humans or non-target wildlife. Some of these standard measures are listed below.

! Conspicuous, bilingual warning signs alerting people to the presence of traps and snares are placed at major access points when they are set in the field.

! Non-target animals captured are released at site of capture unless the Wildlife Services specialists determine that they will not survive.

! Chemical immobilization/euthanasia procedures that minimize pain are used when possible.

! Research continues to improve the selectivity and humaneness of management devices.

! Wildlife Services has consulted with the USFWS, under Section 7 of the Endangered Species Act, regarding the nationwide program and has implemented all reasonable and prudent alternatives to protect T&E species. The Oregon Wildlife Services program has consulted with the USFWS pursuant to Section 7 of the ESA to ensure that the proposed program is not likely to jeopardize the continued existence of federally listed species (Appendix A). Minimization measures are incorporated into the proposed action.

Figure 9. APHIS-Wildlife Services Decision Model

Receive Request for Assistance

9

Assess Problem

ù

Evaluate Wildlife Damage Control Methods

ù

Formulate Wildlife Damage Control Strategy

ù

Provide Assistance

ù

Monitor and Evaluate Results of Control Actions

9

End of Project

From Slate et al., (1992)

! This proposal would not occur on Native American Indian tribal lands. Wildlife Services has consulted with Native American Indian tribes in Oregon to consider any concerns that any tribes may have regarding the proposal.

! Wildlife Services work plans and maps would be developed which delineate the areas identified by ODFW where and when cougar removal may occur and the methods that are used on Federal public lands. Public safety zones are established where cougar control may not be conducted.

! Wildlife Services monitors all cougar removal by considering total animals removed by all sources and estimated population numbers of cougars. These data are used to help assess cumulative effects to maintain the magnitude of take below the level that would impact the viability of the cougar population.

! Vehicle access will be limited to existing roads and cross county vehicle travel is prohibited.

! Cougar removal would be conducted only in coordination with the landowner or land management agency.

! Actions are consistent with APHIS-WS mitigation and guidance established from USFS and Resource Management Plans (LRMP) and Bureau of Land Management Resources Management Plans (RMP)

! The Wildlife Services program is conducted under Cooperative Agreements and Memoranda of Understanding with Federal and state agencies. National MOU's with the BLM (1995) and USFS (2004) delineate expectations for wildlife damage management on public lands administered by these agencies. APHIS-WS work plans are developed with BLM offices and National Forests to detail the activity, target species, and mitigation measures to be implemented.

! Oregon Department of Fish and Wildlife and APHIS Wildlife Services would monitor the program by assessing impacts from removing cougars on the overall cougar population and on damage to livestock, and threats to human safety/pets, and big game. Wildlife Services would rely on the decisions of ODFW as the management authority for cougars to determine when, where, and how many cougars should be removed, not to exceed its proposed maximum of up to 200 cougars per year removed administratively in the State. The target numbers are thought to be the upper limit and the total number of cougars removed may be less if monitoring shows that the removals are effectively reaching program objectives. Administrative cougar removal would cease when program objectives, as defined by the CMP, are met . Administrative cougar removal is conditioned upon Objective 1 being met to maintain a viable cougar population in Oregon (as defined in Section 1.4).

APHIS-Wildlife Services would be the federal agency to conduct cougar removal, after consultation with the ODFW, OSP, ODA, and land management agencies. APHIS-Wildlife Services would use its formalized Decision Model (USDA 1997, revised) (Figure 9) in the field, after applying the criteria listed above, to determine the most appropriate method to remove individual cougars. This proposal would implement safe and practical methods for removing individual cougars. In selecting management techniques consideration is given to: location and land jurisdiction; land uses (such as proximity to urban or recreation areas); possible presence of humans, pets and non-target wildlife, feasibility of implementation of the various techniques; cougar movement patterns and life cycle; local environmental conditions such as terrain, vegetation, and weather; potential legal restrictions such as availability of tools or management methods; humaneness of the available options; and costs of control options (the cost of control in this proposal may be a secondary concern because of overriding environmental, management, and legal considerations).

The APHIS-Wildlife Services decision making process (Figure 9) is a standardized undocumented procedure for evaluating and responding to wildlife damage complaints (Slate et al. 1992). APHIS-Wildlife Services personnel would use a similar strategy in the proposed action which would evaluate the appropriateness of strategies and methods in the context of their availability (legal and administrative) and suitability based on biological, economic and social considerations. Following this evaluation, the methods deemed to be practical for the situation form the basis of a management strategy to capture individual cougars. After a cougar is captured and dispatched, information would be provided to ODFW for monitoring and evaluation and used in its adaptive management approach to determine if the action should continue. Wildlife Services maintains stringent records which would then be reported to the appropriate wildlife management agencies (ODFW, OSP, USFWS if appropriate).

2.1.1 Monitoring and Adaptive Management

Wildlife Services role in monitoring would be to provide cougar carcasses and/or data to ODFW from any cougar removals in the State. Wildlife Services monitors its program by using a Management Information System (MIS) which compiles data on take, locations, damages, methods used, and other information. Information from MIS can then be provided to cooperating agencies, used in wildlife management decisions and environmental analyses, and is available to the public. All other monitoring specified in the CMP, and the adaptive management decisions that result, would be made by ODFW. As detailed in the CMP, ODFW will use adult female age structure from all known mortalities, along with damage conflicts to determine when to begin, change, and end administrative removal actions. Complaints from the public would be considered as secondary information to non-hunting mortality as a monitoring tool to assess the adequacy of administrative removals.

2.2 Alternative 2 - No Action Alternative

This alternative would not allow Wildlife Services to respond to ODFW's request to administratively remove cougars as described in the CMP (ODFW 2006) and in the proposed action description Section 2.1 No action, in this case, means no Federal Action, and is consistent with the Council on Environmental Quality's definition and requirement for a "no action" alternative. The No Action Alternative often serves as a baseline from which to compare the action alternatives and is considered the environmental status quo. While there would be no Federal Action under this alternative, ODFW or its designated agent(s) may take action to implement the CMP. Oregon Department of Fish and Wildlife has stated, that without the assistance of the Wildlife Services program, it would use other means to administratively remove cougars as described in the CMP. ODFW has initiated actions to hire non-Federal agents and is using its employees to administratively remove cougars at the locations thus far identified (Jackson, Malheur, and Morrow Counties) until such time as it may have the option to use Federal assistance to replace some or all of its contracted agents. ODFW has indicated that it prefers a Federal program that is accountable to the public, is experienced and trained in all aspects of the proposed work, maintains precise records for reporting, and is able to coordinate work through multiple jurisdictions. This alternative will be evaluated to the extent that WS can determine its likely effects and it will be compared with the proposed action because it is required by NEPA and is a viable alternative that ODFW has expressed will be implemented in the absence of assistance by Wildlife Services.

2.3 Alternatives Considered but Rejected from Detailed Analysis with Rationale

Non-lethal Control of Cougars: Wildlife Services acknowledges that many people would prefer that cougars be managed with non-lethal methods only. This alternative was considered but rejected from detailed analysis because it would not be effective in meeting the purpose and need for action as defined in this EA. Non lethal methods are built in to ODFW's 2006 Oregon Cougar Management Plan and include ODFW's encouragement and education to the public in the form of advice and educational materials for reducing cougar conflicts with humans, pets, and livestock (ODFW 2006 Objectives 3, and 4). These non-

lethal methods may be implemented by the public to assist in reducing conflicts and in some cases may be effective in reducing or avoiding conflicts. Non lethal actions to be implemented by ODFW are outside of the scope of analysis of this EA. Other non-lethal activities that are outside of the scope include Wildlife Services activities in damage management where Wildlife Services responds to individual cougar damage complaints and provides technical assistance to callers on a case-by-case basis. Wildlife Services gives preference to non-lethal methods where practical and effective (Wildlife Services Directive 2.101). Because the purpose of the proposed action is to assist ODFW with cougar population reduction in key areas, in locations, times, and amounts determined by ODFW, non-lethal alternatives will not be explored further in this document.

Legislative Action to Overturn Measure 18 Some people would prefer that hunting regulations be reversed to allow hunters to use dogs to pursue cougars, and may argue that this would help to solve problems associated with an overabundant cougar population. Furthermore, people that object to programs using State or Federal funds to remove cougars say that this is a waste of public funds and a hunting alternative would have the opposite effect; it would bring more money into the State in the form of tag sales.

Hunting with dogs is not available at this time, nor could this alternative be selected by Wildlife Services. Oregon voters have twice voted to not allow hunters to use dogs to trail cougars (Ballot Measure 18, 1994, and Ballot Measure 34, 1996). If legislative action at some future date were to reverse the ban on using dogs for hunting, the need for administrative removals may be reduced to some degree and ODFW may not request the assistance of Wildlife Services, or it might reduce its request to a lower level. However, ODFW has indicated that under current conditions, professional cougar experts (those with specially trained hounds or who possess the skills and abilities to remove cougars by other legal means), should be used to minimize non target impacts and implement the CMP in a closely monitored approach, in coordination with land management agencies and cooperating agencies. In addition, the use of a government entity that is required to monitor program impacts, and has stringent reporting and environmental compliance requirements is a preferable scenario under current circumstances. Hunting alone possibly would not meet the needs of the program in some areas, particularly where access is limited or in sensitive areas around people, livestock, and pets.

Use of Volunteers by ODFW to Remove Cougars Some people have expressed that they would prefer that ODFW use volunteer houndsmen to track and remove cougars. By statute, only Federal, state, or county agents may use dogs to pursue cougars in their official capacities. Volunteers are also not a legally viable option at this time since they are not considered agents of the state, as interpreted by the Oregon Attorney General's office. For the reasons described under the alternative to overturn Measure 18, this option may not meet the need for the program.

Expand the Existing "Responsive" Integrated Wildlife Service Program into New Counties.

Wildlife Services currently operates in 24 counties in the State where it has professional wildlife specialists assigned to assist private and public groups and individuals within the

county with managing damage by wildlife including damages and threats by cougars. The CMP calls for encouraging non-cooperating counties to enter into agreements with the Wildlife Services program to establish wildlife specialists where none currently are available to provide services, or where requests exceed the ability to respond.

There are several factors to consider with this option: the cost effectiveness of a Wildlife Services integrated wildlife damage management program has been shown to be high (USDA 1997, revised); some members of the public would prefer this over administrative removals since only the individual cougar that is causing the problem is targeted; a combination of lethal and non lethal methods are used; and this option may reduce the need for action to administratively remove cougars based on the number of agents that could be made available to assist more where needed. However, this option may not be viable due to current budgetary constraints at the county, State and Federal levels. This option may not be sufficiently effective to reduce damages because county assigned Wildlife Services employees are typically tasked with a variety of wildlife damage management issues and normally are not focused on cougar damage management only. Finally, targeting only the individual offending animal is extremely time consuming and laborious and may not achieve the objectives of the CMP.

Responding to individual requests for assistance after damages or threats have occurred, (as opposed to administratively removing cougars) is a related activity that is occurring in Oregon, has been analyzed in other environmental documents (USDA 1995, USDA 1996 and USDA1997), and is not part of the proposed action in this analysis. Effects of the integrated damage management program are being considered under Section 4.1.1, cumulative impacts.

CHAPTER THREE - ISSUES IMPORTANT TO THE ANALYSIS OF IMPACTS

3.1 Issues Driving the Analysis

Wildlife Services and its cooperating agencies have determined that the following issues, or environmental resources, should be considered in the decision making process for this EA to help determine the impacts of the proposed action on the environment, and to compare alternatives.

- **Impacts on cougar populations** - What might be the impact of removing cougars on the cougar population within cougar management zones or within the State? What would be the cumulative effects of the proposal?

- **Impacts on non-target species** - Would there be potential impacts on other species besides cougar? Could the program affect pets or wildlife? Might the program have adverse or beneficial effects on federally protected species? What indirect effects on wildlife could occur from removing cougars.

- **Social Considerations** - How are humaneness and animal welfare perceived by different interests? What aesthetic values may be affected?

- **Economic Considerations** – What economic effects may result from implementing the proposed action and alternative?

- **Effects on Hunting -** Might the proposal affect hunting opportunities?

3.2 Issues or Public Comments Not Analyzed in Detail with Rationale

Issues raised during the development of the 2006 Oregon Cougar Management Plan came from ODFW's use of interdisiplinary focus groups and public comment. Wildlife Services anticipates that some of these comments that are not applicable to this analysis would also be applied to this analysis.

! **Impacts on biodiversity** - No cougar removal would be designed to eradicate cougars. The cumulative effects of the Oregon Cougar Management Plan (ODFW 2006) are designed to result in maintenance of a healthy, viable cougar population that would not be lower than 1994 cougar population levels. ODFW believes that 1994 levels far exceed that necessary for population viability, but will allow for better management of viable populations of other big game which are cougar prey species. Wildlife Services operates according to international, Federal and State laws and regulations enacted to ensure species diversity and viability. The cumulative impacts of the proposed program on biodiversity are not significant nationwide, statewide, or locally (USDA 1997, revised).

! **Impacts on minority and low income persons or populations (Environmental Justice and Executive Order 12898**) - Executive Order 12898 requires federal agencies to make Environmental Justice part of their mission, and to identify and address

disproportionately high and adverse human health and environmental effects of federal programs, policies and activities on minority and low income persons or populations. All Service activities are evaluated for their impact on the human environment and compliance with Executive Order 12898 to ensure Environmental Justice. Cougar removal would not affect humans in ways not discussed in this analysis. There is nothing in the proposed action that may result in any adverse or disproportionate environmental impacts to minority and low income persons or populations.

! **Effects on human safety from cougar management methods** The methods that are proposed under this alternative to capture and remove cougars have been evaluated in a formal risk assessment for the national Wildlife Services program (USDA 1997, revised). Hazards associate with the use of foot hold traps, foot and neck snares and cage traps are minor and risks are generally restricted to Wildlife Services employees. Placement of traps and snares minimizes the potential for public exposure. The placement and mechanical nature of snares virtually eliminates any serious safety risk to humans. Program guidelines that require warning sings to be posted in the vicinity of control operations, and training, experience and frequent evaluation for adherence to program guidelines and safety standards ensure that risks to the public are minimized. Shooting to remove a cougar when it is treed by dogs, or captured in traps or snares is highly selective. Risks are minimized as a result of program-implemented safety practices including extensive training and experience in the use of firearms in a safe and effective manner. Employee use is frequently evaluated to ensure continued safe use practices. The proposed action is intended to benefit human safety by reducing risks from cougars.

! **Native American Indian cultural concerns** Solicited tribes in Oregon did not raise additional issues of concern during public outreach and drafting of the CMP. Wildlife Services is consulting with all tribes in the State as part of the NEPA process, but no further issues are expected.

! **Consistency with Measure 18** (Initiative banning the use of dogs for sport hunting of cougar). Nothing in the proposed action is a violation of State law as expressed in the Oregon Revised statutes or Oregon Administrative Rules. Measure 18 allows Federal, State, and County employees or their agents to use one or more hounds while acting in their official capacities (ORS 498.164). Measure 18 did not prohibit recreational cougar hunting but it restricted the use of hounds by sport hunters. Landowners or their agents both private or government, are allowed by State Statute to use hounds to address livestock predation or threats to human safety. Landowners of their private agents, however, are restricted to using hounds on their property where the cougar conflict has occurred.

! **Effects on Wilderness, Wilderness Study Areas, National Parks, State Parks and National Monuments** Cougar removal would not occur in designated Wilderness or Wilderness Study Areas, National Parks, State Parks or National Monuments. Because cougars may be removed from surrounding areas, disbursement into more available habitat may create a slight reduction in numbers in these specially designated areas. The most likely effect of the proposed action may be indirect, in an increase in the ability for recreational users to view elk, bighorn sheep, mule deer or mountain goats as a result of fewer cougars

that may prey on these species. If cougar numbers are reduced, it is not likely that users will experience a reduction in cougar viewing opportunities since viewing cougars is a rare occurrence to begin with due to the secretive, solitary, and elusive nature of the animal.

! **Program expense to the taxpayer** Some people feel that wildlife damage management is a government subsidy and should not be provided at the expense of the taxpayer or that it should be fee based. Wildlife Services was established by Congress as the Federal agency responsible for providing wildlife damage management to the people of the United States. Funding for the proposed program would come from ODFW via income from hunting license and tag fees and is for the protection of livestock, pets, human safety, and big game in Oregon. Federal funds would not be increased but the program would increase Federal oversight for supervision, reporting, and for activities required for compliance with Federal and State laws. Salaries and equipment of staff performing the proposed action would be based on ODFW license and tag sale funds only.

! **An Environmental Impact Statement with more detail and public involvement should be prepared, not an environmental assessment.**
If a determination is made as a result of the analysis contained in this EA that the proposed action would have a significant environmental impact, then an EIS would be prepared. Section 1.1 Purpose, notes the applicability of AHPIS' NEPA regulations as they apply to the actions described herein. Regarding site specificity and the adequacy of preparing a statewide programmatic document, Wildlife Services has determined that a more detailed and more site-specific level of analysis would not add additional information that could substantially improve an informed decision-making process (Eccleston 1995). This EA conforms with APHIS NEPA Implementing Procedures and CEQ regulations implementing NEPA (see Section 1.7.2, Compliance with Federal Regulations)

! **Other resources** - The actions discussed in this EA do not involve any ground disturbance or construction. Therefore, the following resource values are not expected to be significantly affected by the alternatives analyzed: soils, geology, minerals, water quality/quantity, flood plains, wetlands, visual resources, air quality, prime and unique farmlands, aquatic resources, and vegetation, cultural resources or special management areas. There are no significant irreversible or irretrievable commitments of resources other than a minor use of fossil fuels to operate vehicles. These resources will not be analyzed further.

3.3 Evaluation Methodology

Each issue will be evaluated under each alternative and the cumulative effects, including direct and indirect effects, will be disclosed where applicable. NEPA describes the elements that determine whether or not an impact is "significant". Significance is dependent upon the context and intensity of the impact. The following factors will be used to evaluate the

significance of the impacts in this EA that relate to context and intensity (adapted from USDA (1997, revised) for this proposal):

! **magnitude of the impact** (size, number, or relative amount of impact) (intensity) - The "magnitude" analysis for this EA follows the process described in USDA (1997, revised). Magnitude is defined in USDA (1997, revised) as ". . . a measure of the number of animals killed in relation to their abundance." Quantitative analysis is used wherever possible as it is more rigorous and is based on allowable harvest[1] levels and the best available population estimates. Qualitative analysis is based on population trends and modeling. Magnitude may be determined either quantitatively or qualitatively;

! **duration and frequency of the impact** (temporary, seasonal impact, year round or ongoing) (intensity);

! **likelihood of the impact** (intensity);

! **geographic extent** (limited to the local unit area, to the management zone, the State of Oregon, or beyond) (context); and

! the **legal status** of the species that may be removed, and **conformance with regulations and policies** that protect the resource in question (context).

The analysis in Chapter 4 uses the density estimates for cougar populations that are provided in the 2006 Oregon Cougar Management Plan. The CMP models population estimates through 2003 and includes an ongoing adaptive management component.

The local target area is the smallest analysis unit used to manage cougars where impacts will be desired and most notable. The intermediate analysis unit is the cougar management zone encompassing the target area, and finally the impacts will be viewed at the State level since most cougar habitat is contiguous and this is the largest unit for cougar management. Other factors affecting the cougar population that contribute to the cumulative effects of the proposed action are also considered.

[1] The use of "allowable harvest" levels in managing wildlife populations provides for long-term maintenance of animal populations and therefore is appropriate in establishing criteria for determining magnitude (USDA 1997, revised).

CHAPTER 4: ENVIRONMENTAL CONSEQUENCES

Chapter 4 provides information needed for making informed decisions on the predator damage management objectives identified in Chapter 1. This chapter uses the issues identified in Chapter 3 as the evaluation criteria. Each of the issues will be analyzed for its environmental consequences under each alternative.

Cumulative impacts are discussed in relationship to effects on the cougar population and any anticipated non-target impacts. The cumulative effects can include direct and indirect effects and these are discussed throughout the environmental consequences section where applicable.

4.1 Alternative 1 - Proposed Action Alternative – Assist ODFW with Administrative Removal of Cougars as Prescribed in the current Oregon Cougar Management Plan

4.1.1 Impact on cougar population

Cougar population information

Cougars inhabit many habitat types from desert to alpine environments, indicating a wide range of adaptability. They are closely associated with deer and elk because of their dependence upon these species as prey.

Female cougars typically breed for the first time between 22 and 29 months of age (Ashman et al. 1983), but initial breeding may be delayed (Hornocker 1970). Cougars breed and give birth year round but most births occur during late spring and summer following a 90-day gestation period (Ashman et al. 1983, Seidernsticker et al. 1973, Robinette et al. 1961). One to six offspring per litter is possible, with an average of two to three young per litter.

Cougar density is related closely to prey availability and the social tolerance for other cougars. Prey availability is directly related to prey habitat quality that directly influences cougar nutritional health, and reproductive and mortality rates. Studies indicate that as available prey increases, so do cougar populations. As cougar population density increases, mortality rates from intra-specific fighting and cannibalism also increase, and/or cougars disperse into unoccupied or less densely occupied habitat. The relationship of the cougar to its prey and to other cougars is why their densities do not reach levels observed in a number of other wildlife species (ODFW 1993). It is also why cougars disperse into atypical cougar habitat and cause conflicts (Bodenchuk and Hayes 2006).

Cougar densities in other states, based on a variety of population estimating techniques, range from a low of about 1 per 100 square miles to a high of 24 per 100 square miles for all age classes (Johnson and Strickland 1992). An average density estimate for the western states was 7.5 per 100 square miles (Johnson and Strickland 1992).

Cougar Populations in Oregon

Oregon Department of Fish and Wildlife used biological data, non-hunting mortality, cougar complaints, and research to provide data contributing to its population modeling to assess population trends.

Biological data provide a foundation for population assessment. From mandatory examination of known mortalities, ODFW can assess reproductive status, average litter size, age at first parturition, and the age structure of the population.

Non-hunting mortality includes all known cougar deaths as a result of human safety threats, pet or livestock damage, road kills, vehicle collision and reported natural mortality. Non-hunting mortality has substantially increased from 13 in 1987, to 60 in 1994, to 164 in 2003 (Figure 10).

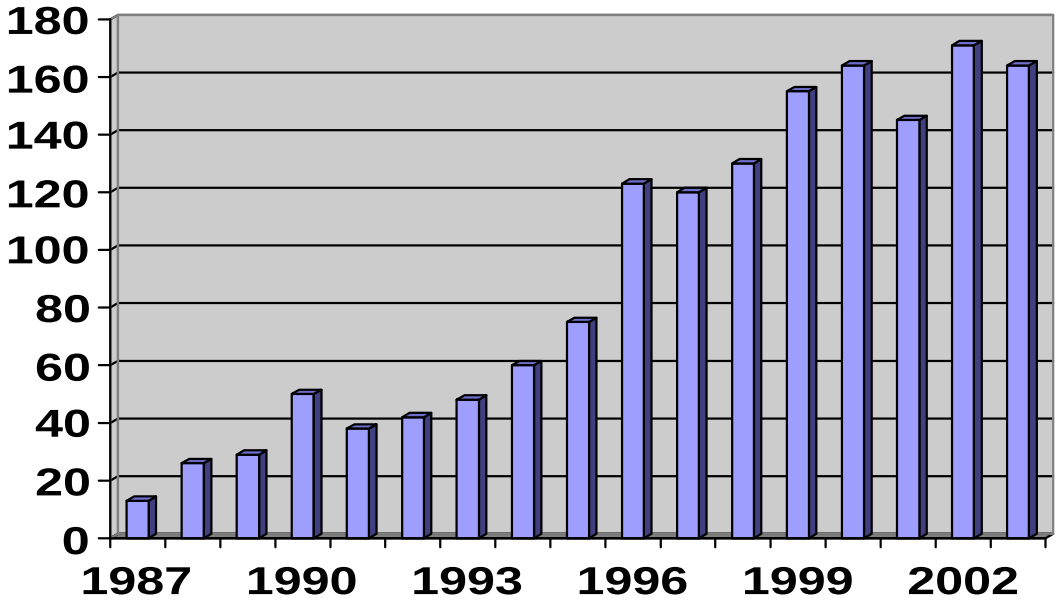

Figure 10. Number of non-hunting cougar mortalities by year.

The majority of cougar deaths in non-hunting mortality are in response to livestock depredation, with the next highest level for human safety/pet complaints. Non-hunting mortality is less subjective than complaints and thus is the best measure of cougar-human conflict. Damage complaints consist of the contacts received by ODFW and Wildlife Services regarding conflict with cougar and include those made to OSP and other enforcement agencies and are categorized as involving humans, pets, or livestock.

Cougar complaints involving livestock are generally addressed by Wildlife Services in counties that participate in the Wildlife Services program, or by landowners or their agents in non-participating counties. The majority of cougar-human safety concerns are not verified and do not result in control efforts to capture a cougar. Cougar complaint figures were shown in Figure 2 in Section 1.2.2.

Research. ODFW has been involved in 3 long-term research projects on cougars, one with two separate study sites. Research has provided information for many biological parameters needed to model cougar populations. In addition, research results have provided the basis for establishing population density in different management zones.

ODFW initiated a study in the Catherine Creek WMU (Union County, northeast Oregon) in 1988 to determine cougar population density. The study, described in ODFW (2006), concluded that the average annual population estimate for the WMU was 19.3 cougars per 100 square miles.

In another study, initiated in December 1993 called the Jackson Creek study (Douglas County), ODFW estimated cougar population parameters in the south Cascades. Study details and results are described in ODFW (2006). The study found cougar densities range from 13.9 cougars/100 mi^2 to 7 total cougars/100 mi^2 in 2001. Prior to Measure 18 in 1994, legal harvest was the highest mortality cause. Since 1997, natural mortality (particularly disease/parasites) had the most impact on adult and sub-adult cougars.

In 2002, in response to concerns over cougar predation's potential impact on elk populations, ODFW began conducting a nutrition/predation study in northeast and southwest Oregon. Preliminary analysis revealed densities of sub-adult and adult cougars from 8-16 per 100 mi^2 in northeast Oregon and ODFW research is scheduled to continue through June 2008. In southwest Oregon, during 2002-2004, preliminary analysis revealed adult cougar densities from 9-11 per 100 mi^2. Research on the southwest study area was to conclude in June 2006. The project is in the data analysis and report writing stage at the time of preparation of this EA. Discussions of these studies and findings to date can be found in ODFW (2006) and Reardon (2005). Other published studies on cougars and Oregon are listed in ODFW (2006) and have been considered in cougar population models.

Population models for wildlife management have become common tools in the last 20 years to help make management decisions. Cougar population estimates used in the 2006 Oregon Cougar Management Plan (CMP) come from a deterministic, density-dependent population model used for evaluating short-term harvest scenarios, as recommended in the Cougar Management Guidelines (2005, page 58). The model incorporates measured productivity and observed mortality to calculate changes in the cougar population. The cougar model utilizes extensive, long-term data collected from cougars in Oregon, which provides confidence in the estimates. These data include measures of both productivity and mortality. The model uses age and sex of 2,538 known cougar mortalities documented from 1995-2003.

CHAPTER FOUR: ENVIRONMENTAL CONSEQUENCES

To describe the modeling process used for Oregon cougars, a manuscript (Keister and Van Dyke. 2002) was written, peer reviewed, and published. ODFW analyzed harvest, damage complaints, and biological data obtained from harvested cougars, prior to 1993, to evaluate cougar status in Oregon. Since 1995, the model has been used to estimate the cougar population in Oregon and help determine harvest quotas by zone. Because total mortality (including harvest) has generally been less than quotas, the modeled cougar population in Oregon has continued to increase. During development of the 2006 CMP, the statewide model was updated utilizing sex, age, and reproductive data collected from 1993 – 2003. In addition, models were created for each of 6 zones. The statewide cougar population estimate is the sum of the 6 zone estimates.

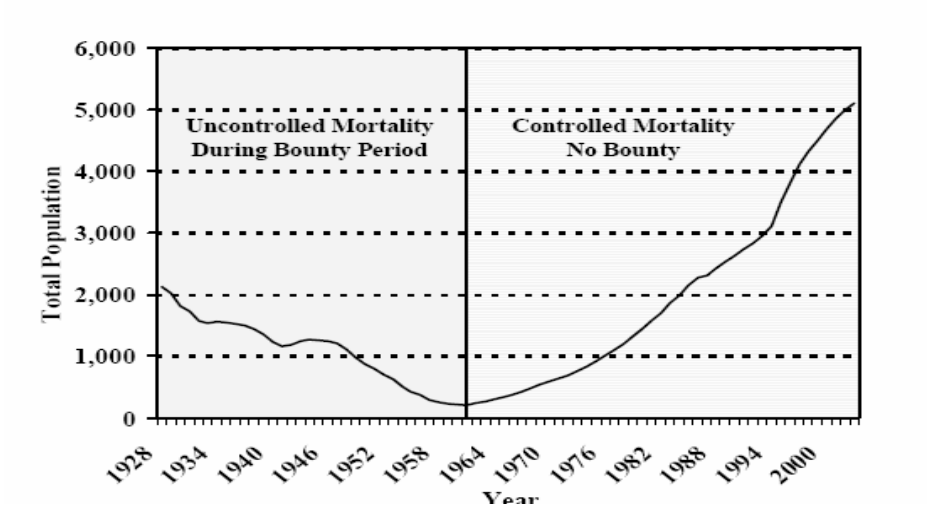

Figure 11. Modeled cougar population trend in Oregon, 1928–2003 (after Keister and Van Dyke 2002).

During public review of the draft CMP, ODFW received criticism on the accuracy of the population model. Despite the strength of the data used to build the model and the scientific review of the model, based on the public comments, ODFW evaluated the model again using updated, zone models, and changing variable such as litter size and natural mortality rates. The 2006 CMP explains the reviews done by ODFW to assess model integrity. Criticisms on population estimates must be weighed against the fact that ODFW used the best information available to assess the population, and has incorporated an adaptive management strategy that will be applied on an ongoing basis to continually update and improve estimates.

Table 2 shows 2003 estimated cougar populations based on information presented in ODFW (2006).

Cougar Management Zone	Estimated 2003 Cougar Population
A: Coast/N. Cascades	615
B: SW Cascades	1,534
C: SE Cascades	331
D: Columbia Basin	318
E. Blue Mountains	1,581
F: SE Oregon	722
TOTAL	5,101

Table 2. Estimated 2003 Cougar Population in Cougar Management Zones.

Cougar population impact analysis

Cougar populations can sustain relatively moderate to heavy losses of adults and still maintain viable populations. Robinette et al. (1977) reported an annual mortality of 32 percent in Utah, while Ashman et al. (1983) noted a sustained annual mortality of at least 30 percent in Nevada. Ashman et al. (1983) believed that under "moderate to heavy exploitation (30 percent-50 percent)" cougar populations within their study area had the recruitment (reproduction and immigration) capability to rapidly replace annual losses. The allowable annual harvest level for cougar cited by the USDA (1997, revised) is 30 percent of the population. Logan et al. (1996) concluded from a study in New Mexico that about 11 percent of the adult cougar population was a sustainable harvest level for cougar populations that are at carrying capacity, and that are not hunted or controlled. Logan's study was based on a relatively isolated population in the San Andres Mountains. An important distinction to be made is that the cougar population in the proposed project area is not isolated but because of suitable habitat, is contiguous throughout much of the state. Therefore, the analysis of impact on the cougar population could be made at or near the statewide level.

Wildlife Services proposes to remove cougars in the three specified locations based on the ODFW CMP in the immediate future. It is unlikely that Wildlife Services would be the only agent removing cougar under the CMP, but for the purposes of remaining conservative and assessing a "worst case" analysis (Wildlife Services removing the maximum number of cougar), the proposed action alternative analysis will focus on a scenario in which Wildlife Services is the sole agent for all administrative removals at a maximum levels of 200 cougars in the State. Because it is likely that fewer cougar will actually be removed than are called for under the CMP, this assessment will also include a lower end calculation for impacts on the

cougar population. Wildlife Services feels that the maximum number of cougar is not likely to be removed due to the high level of difficulty and time required to remove individual cougars. Due to terrain restrictions, weather, land jurisdiction, and other constraints, as well as the highly mobile, elusive and secretive nature of cougar, removing these animals requires considerable time, resources, and skill

Near term effect of removing cougars in three Cougar Management Zones

Wildlife Services could respond to an ODFW request to target cougars in any or all of the following three locations:

1. Jackson County in Southwest Oregon. Remove up to 24 cougar to address human/pet safety.
2. Morrow County, Heppner wildlife management unit. Remove up to 30 cougars to address big game management
3. Malheur County, East Beulah wildlife management unit. Remove up to 12 cougars to address livestock predation.

While the total number would not be exceeded without prior public disclosure, the number may be reduced based on adaptive management decisions if complaints and damage levels have been reduced to 1994 levels, as specified in the CMP.

Effects on the cougar population in Zone B

Jackson County is located in Cougar Management Zone B where cougar-human conflict have increased substantially since the early 1990's due to increasing cougar numbers and increasing human population. Based on population modeling, cougar population density in Zone B increased from 10 cougars/100mi^2 in 1994 to 12.6 cougars/100 mi^2 of habitat in 2003(ODFW unpublished data in ODFW 2006). Removing up to 24 cougars per year from the Zone B estimated 2003 population of 1,534 (ODFW 2006) accounts for less than two percent of the cougar population in the zone. Localized impacts within Jackson County would be greater, as administrative removals would be focused in areas around human habitation and where conflict is highest.

Cumulative effects on cougar population in Zone B.

Adaptive management may be used to reduce conflict to 1994 levels, as measured by non-hunting mortality and complaints. Mortality quotas will include all known mortalities due to human causes. The minimum cougar population for Zone B is set at 1,200. Modeling indicates a total human caused mortality of 165 cougars/year (ODFW 2006, Table 14) for 5 years could occur without reducing cougar numbers below the minimum population of 1,200. If Wildlife Services removed 24 cougar per year, cougar take from hunting and reactive depredation management could total 141

in the zone and not affect the population. If total human caused mortality reaches 165/yr for 5 years, subsequent mortality would need to be reduced to approximately 116 cougars/year to prevent the population from declining below the minimum population objective (ODFW 2006). As hunting and depredation take increase, monitoring and adaptive management would evaluated objectives and proactive, administrative removals would be reduced accordingly. In the worst case scenario, the cumulative effect of all known mortality would not exceed levels established to maintain a minimum population level of 1,200 in Zone B. Therefore, the most take that would be likely to occur would meet Objective 1 for a minimum population and would be well above levels for sustainability.

Areas with limited public access, which account for approximately 20 percent of the zone, will receive little or no hunter effort. Other areas will be managed more intensively to achieve objectives for cougar-human conflicts. Particular attention will be given to areas around human habitation, where cougar-human conflicts have been documented. Intensive cougar management in targeted areas should meet objectives for reducing cougar–human conflict. Moderate cougar harvest in much of the zone and limited harvest in areas of restricted hunter access will maintain cougar populations at or above minimum levels.

Effects on the cougar population in Zone E

The Heppner management unit is located within Cougar Management Zone E (Figure 8). Much of Zone E is public land, and within the zone are premiere elk areas in the Blue Mountains. Cougar conflicts have increased substantially since the early 1990's in this zone. Based on population modeling, cougar population density in Zone E increased from 6.2 cougars/100 mi^2 in 1994 to 10.5 cougars/100 mi^2 in 2003. Removing up to 30 cougars per year from the Zone E estimated 2003 population of 1,581 (ODFW 2006) accounts for less than two percent of the cougar population in the zone. Localized impacts within the unit would be greater, as administrative removals would be focused in areas around elk calving grounds where conflict is highest.

Cumulative effects on cougar population in Zone E.

Adaptive management may be used to reduce conflict to levels identified in the CMP for elk management (ODFW 2006) and as measured by non-hunting mortality and complaints. Mortality quotas will include all known mortalities due to human causes. The minimum cougar population for Zone E is set at 900 after all sources of mortality. Modeling indicates a total human caused mortality of 245 cougars/year (ODFW 2006, Table 14) for 5 years could occur without reducing cougar numbers below the minimum population of 900. If total human caused mortality reaches 245/yr for 5 years, subsequent mortality would need to be reduced to approximately 90 cougars/year to prevent the population from declining below the minimum population objective (ODFW 2006). As hunting and depredation take increase, monitoring would provide ODFW new information and it could adapt management to

meet objectives and proactive administrative removals would be reduced accordingly. In the worst case scenario, the cumulative effect of all known mortality would not exceed levels that are established to maintain a minimum population level of 900 in Zone E. Therefore, the most take that would be likely to occur would meet Objective 1 for a minimum population and would be well above levels for sustainability.

Effects on the cougar population in Zone F

The Beulah wildlife management unit is within cougar management zone F (Figure 8) where human cougar conflicts have increased substantially since the 1990s. Based on population modeling, cougar population density in Zone F has increased from 1.2 cougars/100 mi^2 in 1994 to 2.7 cougars/100 mi^2 in 2003 (ODFW 2006). Removing up to 12 cougars per year from the Zone F estimated 2003 population of 722 (ODFW 2006) accounts for less than two percent of the cougar population in the zone. Localized impacts within the Beulah management unit would be greater, as administrative removals would be focused in areas around livestock production and where conflict is highest.

Cumulative effects on cougar population in Zone F

Adaptive management may be used to reduce cougar-human conflict to 2000 levels, as measured by non-hunting mortality and complaints. Mortality quotas will include all known mortalities due to human causes. The minimum cougar population for Zone F is 300. Modeling indicates a total human caused mortality of 120 cougars/year for 5years (ODFW 2006, Table 14) could occur without reducing cougar numbers below the minimum population of 300. If total human caused mortality reaches 120/yr for 5 years, subsequent mortality would need to be reduced to approximately 28 cougars/year to prevent the population from declining below the zone minimum.

As hunting and depredation take increase, monitoring would provide new information to adapt management to meet objectives and proactive administrative removals would be reduced accordingly. In the worst case scenario, the cumulative effect of all known mortality would not exceed levels that are established to maintain a minimum population level of 300 in Zone F. Therefore, the most take that would be likely to occur would meet Objective 1 for a minimum population and would be well above levels for sustainability.

Effects on cougar populations in the State

Wildlife Services working at a maximum projected capacity to assist ODFW with administrative removal in any and all cougar management zones would not be expected to exceed taking 200 cougars per year in all zones combined, and it is likely that due to the high level of labor and time involved with removing individual cougars, that this number would be substantially lower. In the worst case scenario,

because the adaptive management approach presented in the CMP (ODFW 2006) accounts and adjusts for all other forms of mortality combined, Wildlife Services effect on the cougar population would not contribute to the cougar population in Oregon falling below the minimum acceptable level established by ODFW (Table 1), which is well above levels required for sustainability as discussed below under cumulative impacts and in ODFW (2006).

Table 3. Comparison of 2006 total mortality quotas under adaptive management, and 2003 cougar population estimates in Oregon (from ODFW 2006)

Cougar Management Zone	Adaptive Management Mortality Quota	2003 Estimated Population
A	120	615
B	165	1,534
C	65	331
D	62	318
E	245	1,581
F	120	722
Statewide Total	777	5,101

Cumulative impacts on the cougar population in the State

Cougar habitat within Oregon is generally contiguous, and because cougars have a large home range the analysis area can be expanded to include the population in the State. Cougars that range from units and zones adjacent to immediate project areas may be removed. Similarly, cougars from adjacent areas could be recruited into the proposed project areas to replace cougars that are removed. Although the immediate localized impacts could be high, impacts on the surrounding areas, the cougar management zones, and the State would be low, because of high cougar numbers, recruitment and replacement, and resiliency of the population. Impacts may also be temporary until cougar populations are stabilized since young or transient cougars would be recruited as replacements. While the potential to administratively remove cougars at maximal levels allowed in the CMP could bring the cougar population to levels shown in Table 1, this "worst case" (e.g. highest impact) scenario, is not proposed or expected to occur within the reasonably foreseeable future. The objective is not to reduce the cougar population, the goal is to manage conflict. The proposed action is within management objectives defined by ODFW to maintain a healthy cougar population.

Based on an administrative removal of up to 200 cougars in the State, hunter harvest of 248 cougars (2003 harvest data) and depredation removal of 75 cougars (six-year average of USDA WS depredation take), total mortality would be 523 cougars, about 10 percent of the 2003 estimated cougar population. This is below the adaptive management mortality quota allowed in the Plan (777 cougars statewide, Table 3). The proposed level of take is not likely to cause a substantial decline to the cougar

population on the Statewide level when combined with other expected forms of mortality (cumulative impact), and is well within levels established for a sustainable cougar population.

The Oregon Cougar Management Plan reports that not only is the current cougar population estimate of 5,100 much greater than populations in the last 80 years, but the lowest minimum threshold of 3,000 is still above these levels and much greater than the number of individuals required for genetic and demographic viability (Dennis et al. 1991, Mills and Smouse 1994 and ODFW 2006). The CMP states that the current habitat and prey populations in Oregon are sufficient to support a cougar population greater than the minimum threshold and are keys to long-term persistence of the cougar population.

Indirect impacts on cougars

The average age of cougars in a population is reduced when individuals are removed by hunting because those that are killed tend to be compensated for by recruitment of young cougars and the immigration of transient cougars (CDFG 1988). A younger cougar population suggests a high reproductive rate, high turnover rate, and immigration of young transient animals. An older population suggests a lower reproductive rate, slow turnover, and infrequent immigration of young transients (CDFG 1988). Removing cougars from selected locations may result in a slight shift to younger animals and an increased survival and recruitment of young cougars.

4.1.2 Impacts on non-target species

Dogs used to track cougars would be the most extensively used tool in the proposed program. Dogs do not typically pose a threat to non-target animals because they are trained to trail only the target cougar and are managed by experienced handlers.

Shooting is highly target specific and does not pose a risk to non-target animals when conducted by professional wildlife specialists trained in firearm use and trained to identify target and non-target species.

When foot hold traps are used to capture cougars they are equipped with a pan tension device that can help to exclude animals of lighter weight than the targeted animals. Therefore larger species are more prone to capture: very large free roaming dogs, bears or wolves (effects on wolves are not likely - see effects on threatened and endangered species in Appendix A, Consultation with USFWS). It is possible that other species could occasionally be captured. In 2006, two bobcats, two coyotes and a turkey were captured in foot hold traps (pers. commun. with Michael Burrell and Michael Slater). Eleven coyotes were captured in neck snares set for cougars in 2006 (pers. comm. with Michael Burrell and Jeffrey Brent). No non-target animals were captured using foot snares set for cougars in 2006. The possibility of capturing non-target animals in foot snares is possible but it is minimal because very few foot snares are set for removal of cougars, and while not required by policy, Wildlife Services

personnel frequently use pan tension devices in conjunction with the foot hold snare to minimize the take of smaller non-target animals. Cage traps are also adjusted to avoid closing when small animals enter. Therefore only the larger species could be captured. Efforts are made to check traps set for cougars within 48 hours and non-target animals can be released unharmed.

Based on the experience of the Wildlife Services program in pursuing, capturing, and removing cougars throughout the State, the proposed action would be not be expected to result in an increase in the capture and potential removal of non-target animals. Dogs would be the primary method for capturing cougars that are targeted for administrative removal and dogs are not expected to take additional non-target animals. All non-target species captured by the APHIS-Wildlife Services program are recorded and reported to the appropriate management agency.

An indirect effect that could result from removing cougars, the dominant predator, is a possible ingress of other predators such as coyotes or bobcats.

Effects on threatened and endangered species

Wildlife Services has reviewed prior consultations with the USFWS, has reviewed the current list of USFWS threatened and endangered species, and has determined, with USFWS concurrence, that the proposed cougar removal actions may affect, but are not likely to adversely affect the gray wolf and Canada lynx that may be found in Oregon. Appendix A contains documentation of compliance with Section 7 of the Endangered Species Act. In addition, Wildlife Services has determined that the proposed action would have no effect on other threatened or endangered species that may be found in Oregon, including the bald eagle. Wildlife Services will implement a number of precautionary measures to minimize potential effects on gray wolf and Canada lynx. Specific measures include the following:

• Wildlife Services will maintain regular contact with the USFWS and ODFW to keep apprised of locations and information on the presence of gray wolves or Canada lynx in Oregon.

• Wildlife Services personnel who conduct the proposed cougar management activities in occupied wolf range/habitat shall be trained in identification of wolves and wolf sign.

• Wildlife Services will ensure that their Wildlife Specialists that work in lynx habitat will be trained in identification of Canada lynx and Canada lynx sign, and snowshoe hare and their sign. Training of personnel in Canada lynx and snowshoe hare identification will be conducted by Wildlife Services in collaboration with the local wildlife management offices.

• Wildlife Services will report any sightings of wolves, wolf sign, or wolf depredations to the local USFWS or ODFW within 24 hours. Additional time shall be allowed for remote areas with limited access.

• Wildlife Services will conduct a 24-hour trap check in occupied wolf range/habitat while using foothold traps or foot snares intended for cougars. Traps shall be equipped with a drag, even if solidly staked, and connections shall be welded. All traps pose a threat to juvenile wolves and, therefore, shall not be used in proximity to occupied dens and rendezvous sites from June 1 to October 1 should such sites be formed in the future.

• Neck snares shall not be used near den or rendezvous sites should such sites be established at some point in the future. Neck snares shall not be used within a 3-mile radius around an area where wolf sign is evident. If wolf sign becomes evident in areas where neck snares are already in place they shall be removed immediately.

• Dogs used by Wildlife Services to trail cougars are specially trained to locate and follow a specific scent, which minimizes the chance of trailing non-target species. In the highly unlikely event that a lynx were pursued or treed in lynx habitat in Oregon, the dogs would be removed from the area immediately.

• The deployment of cougar cage traps will occur outside of areas where wolves or lynx are likely to be present. These traps will also be checked once every 24 hours.

• In the event of a listing status change, designation of critical habitat within Oregon, or environmental or project changes, Wildlife Services will reinitiate consultation if the proposed action may affect the gray wolf or critical habitat accordingly.

• Wildlife Services will incorporate pan-tension devices in foot/leg snares and leg-hold traps in lynx habitat to prevent the capture of lynx and smaller non-target animals. The amount of weight required to trigger the leg-hold trap for a cougar can be increased by the pan-tension device to exclude lynx and other smaller animals.

• Neck snares used to control cougars would only be used in lynx habitat with stops which would preclude capture of the smaller lynx.

The USFWS stated that Wildlife Services' cougar control activities in Oregon are extremely unlikely to affect lynx. The best available information indicates there is no resident lynx population in this State and the nearest populations are over 150 miles away. Individual lynx do occasionally disperse into Oregon; however,

given their extreme rarity it is highly unlikely that a dispersing lynx will encounter a snare or trap set for cougars, especially given that cougar control work will be very limited in the high-elevation habitats preferred by lynx. In addition, the previously identified precautionary measures being taken by Wildlife Services should further reduce the possibility of lynx being affected by the proposed activities.

The USFWS stated Wildlife Services' proposed cougar control activities will not affect wolves across most of Oregon over the next five years because there will be no wolves in those areas. However, a small number of wolves are likely to be present in northeast Oregon. In that region, the measures proposed by Wildlife Services, particularly those involving modifications to the use of traps and snares in occupied wolf habitat, should effectively reduce the likelihood that wolves will be caught in these devices.

Based on the above information, the USFWS concurred with the determination that the proposed cougar control activities may affect, but are not likely to adversely affect Canada lynx and gray wolves.

Finally, the Wildlife Services program is formally consulting with the USFWS for effects of the national Wildlife Services program on listed species. Any more stringent requirements for protecting endangered species that result from the national consultation would be incorporated into the Oregon Wildlife Services program as applicable.

4.1.3 Social Values

Cougars are regarded as regal animals symbolizing wilderness, and as a result of conservation efforts, their populations are thriving across much of the West. Maintaining a balance between human and wildlife needs requires sensitivity and consideration of divergent viewpoints. In addressing the conflicts between wildlife and people, wildlife managers must thoughtfully consider not only the needs of those directly affected by wildlife damage and the environmental issues, but also a range of sociocultural and economic factors. Wildlife is a valuable public resource. Oregon Department of Fish and Wildlife is responsible for maintaining healthy, viable resident wildlife populations, which includes among others, cougar and other game species. Accordingly, when wildlife causes damage, the ODFW has an obligation to respond to that damage. The U.S. Department of Agriculture (USDA) provides assistance upon request of state governments or others to control and prevent damage by wildlife.

Animal Rights and Animals Welfare

Two philosophies on human relationships with animals are commonly considered relative to ethical perceptions of wildlife damage management techniques. The first

philosophy, animal rights, asserts that all animals, humans and nonhumans, are morally equal. Under this philosophy, no use of animals, e.g. for research, food and fiber production, recreational uses such as hunting and trapping, zoological displays and animal damage management, etc. should be conducted or considered acceptable unless that same action is morally acceptable when applied to humans (Schmidt 1989). The second philosophy, animal welfare, does not promote equal rights for humans and nonhumans, but focuses on reducing pain and suffering in animals. Advocates of this philosophy are not necessarily opposed to utilitarian uses of wildlife but they are concerned with avoiding all unnecessary forms of animal suffering. However, the definition of what constitutes *unnecessary* is highly subjective (Schmidt 1989). In general, only a small portion of the U.S. population adheres to the Animals Rights philosophy, but most individuals are concerned about Animal Welfare.

Animal welfare organizations are concerned that some methods used to manage wildlife damage expose animals to unnecessary pain and suffering. Research suggests that with methods such as restraint in foot hold traps, changes in the blood chemistry of trapped animals indicate "stress." Blood measurements of fox indicate that this is the case for fox that have been held in traps and chased by dogs (USDA 1997, revised). The situation is likely to be similar for cougars caught in snares or chased by dogs. Bonier et al. (2004) has found elevated levels of stress hormones in cougars held in captivity that attempted to flee from an artificial stressor, but did not find elevated levels in cougars that did not attempt to flee. However, research has not yet progressed to the development of objective, quantitative measurements of pain or stress for use in evaluating the relative humaneness of proposed capture techniques.

The challenge in coping with this issue is how to achieve the least amount of animal suffering with the constraints imposed by current technology. Wildlife Services personnel are concerned about animal welfare. Wildlife Services is aware that techniques like snares and pursuing with dogs are socially controversial, but also believes that these activities are being conducted as humanely and responsibly as practical by Wildlife Services specialists. To ensure the most professional handling of these issues and concerns, Wildlife Services has numerous policies giving direction toward the achievement of the most humane wildlife damage management program possible. Research continues to improve the selectivity and humaneness of management devices.

Selectivity of wildlife damage methods is related to the issue of humaneness in that greater selectivity results in less potential suffering of non-target animals. Methods vary in their selectivity for non-target animals. The selectivity of each method is augmented by the skill and discretion of the Wildlife Services specialist applying the technique, and on specific measures and modifications designed to reduce or minimize non-target captures. All Wildlife Services specialists are trained in techniques to minimize the risk of capturing non-target wildlife. As discussed in Section 4.1.3, the effects of cougar removal by Wildlife Services would pose a very low risk of capturing non-target animals.

Wildlife Services supports the most humane, selective, and effective damage management techniques, and would continue to incorporate advances into program activities. Wildlife Services field specialists that would track, capture and remove cougars would be highly experienced professionals, skilled in the use of management methods and committed to minimizing pain and suffering.

Finally, livestock and pet owners feel that they have a right to protect their property, and may consider it unacceptable that their domesticated animals be subjected to harm by cougars. People have bred the defensive capabilities out of many domestic animals and may feel they have an obligation to protect them from wildlife.

Effects of the Methods

Few premises are more obvious than that animals can feel pain (AVMA 1987). Determining whether an animal is experiencing pain or suffering is difficult. Despite this difficulty, many manifestations of pain are shared by many animal species (AVMA 1987). Suffering is a much abused and colloquial term that is not defined in most medical dictionaries. Neither medical nor veterinary curricula explicitly address suffering or its relief. Therefore, there are many problems in attempting a definition. Nevertheless, suffering may be defined as a highly unpleasant emotional response usually associated with pain and distress. Suffering is not a modality, such as pain or temperature. Thus, suffering can occur without pain; and although it might seem counter-intuitive, pain can occur without suffering (AVMA 1987). The degree of pain experienced by animals that are shot probably ranges from little to no pain to significant pain depending on the nature of the shot and time until death. Since the connotation of suffering carries with it the connotation of time, it would seem that there is little or no suffering where death comes immediately. Wildlife Services personnel are trained professionals experienced in the placement of shots that result in quick death and minimize pain and suffering.

It is possible for the techniques listed below to kill cougars with kittens. In the case of lethal removal of a lactating female cougar, all reasonable attempts will be made to locate juveniles and capture these animals alive. If successful, juveniles shall first be offered to any bona fide educational facility (member: AZA) for display and/or educational purposes. *If no such permanent home can be found, juvenile(s) shall be humanely euthanized.* Because of potential for future human interactions and danger, no attempt shall be made to rehabilitate and release juvenile cougars in Oregon.

Use of Dogs: Although theoretically possible, the risk of a cougar being caught and killed by dogs is extremely low. No cougars have been killed by dogs used by the Oregon Wildlife Services program. Cougars can, and do occasionally cause harm to trained tracking dogs, and while serious injuries to dogs is not prevalent, the Wildlife Services program in Oregon has lost tracking dogs to cougars (pers. comm. J. Brooks).

It is possible that being pursued by dogs may cause a cougar to suffer anxiety, fear and stress. Anxiety is generally defined as an unfocused response to the unknown (AVMA 1987). Fear is a focused response to a known object or previous experience (AVMA 1987). Stress is commonly defined as the effect of physical, physiologic, or emotional factors that induce an alteration in an animal's homeostasis or adaptive state.

Foot snares and foot hold traps : Being caught in a snare or trap may cause an animal to suffer anxiety, fear and stress as described above. Having a foot restrained in a foot snare or foot hold trap may also result in pain and suffering. The duration and extent of these effects would vary depending on the individual and the length of time being restrained in the trap. Wildlife Services uses double swivels on snare cables to reduce the potential for leg and foot injuries. Centered trap chain swivels in foot hold traps are used to reduce the potential for leg and foot injuries.

Neck snares: Neck snares set by professional wildlife specialists almost always result in extremely rapid death of the captured cougar. Because the snares are set specifically to capture cougars, placement minimizes the potential to capture the animal in a way that does not result in immediate death. In the rare event that a cougar is not captured by the neck, the animal is restrained by the snare until it can be euthanized.

Cage Traps: Because cage traps involve the confinement of an animal, it is likely that the use of cage traps would cause an animal to suffer anxiety, fear and stress. It is also possible for an animal to become injured while fighting to escape a trap.

Impact of cougar removal on the public's aesthetic enjoyment of cougars.

Under the proposed action, cougars would be removed from localized areas causing some level of population reductions. However even when the cougar population is dense, there is a very low likelihood of ever seeing a cougar due to their solitary, secretive and elusive nature. A local reduction in public viewing opportunity associated with the proposed action would probably not be noticeable by the public. Wildlife Services acknowledges that the public generally enjoys knowing that wildlife exits. The CMP objectives and expected impacts on the cougar population are to maintain a viable healthy cougar population in Oregon and within each Cougar Management Zone.

Wildlife Values and Ethical Perceptions of Cougar Damage Management

The proposed action is unacceptable to some animal rights advocates and to many individuals with strong humanistic and moralistic values because it would lethally remove cougars, and it may remove individual cougars that have not thus far been found to damage human interests. Some animal welfare advocates would find this alternative somewhat acceptable because it provides an assurance that proactive or administrative removal be done as a last resort action, after education, non-lethal

means, hunting, and reactive depredation control programs have failed to keep damages at or below acceptable levels. Some people feel that humans have encroached on cougars territories ("they were there first"). While the human population has expanded and increased in Oregon, so too have cougar populations expanded their range and numbers over historic levels. Livestock producers and others who may benefit more directly from controlling cougars may perceive this alternative as acceptable or necessary given the threats and extent of damages.

Balancing the widely varied perceptions of the public with the responsibility of managing a highly charismatic species like the cougar requires consideration of all views, careful planning, and the use of the best available science. Wildlife Services feels that ODFW's CMP has been developed in a manner which has accomplished these aspects successfully. There is probably no feasible, reasonable or effective alternative that would be acceptable to all groups in light of the difficult and sensitive social aspects of cougar management.

4.1.4 Effects of the Proposed Action on Hunting Opportunities

Cougar hunting success since the passage of Measure 18 has been reduced from 40 percent in 1994 to only one percent in 2003 statewide (ODFW 2006). Since 1994, ODFW has drastically increased the number of cougar tags while also making seasons more liberal, with the aim of increasing hunter harvest take to assist with population management goals. But harvest quotas are not being met. In 2003, ODFW issued over 34,000 tags to over 28,000 hunters and only 248 cougars were harvested by hunters. Approximately one-half of the harvest is by hunters who carry a tag but are hunting for other species and take the cougar incidentally. About two thirds of the cougar tags are not purchased individually but are obtained in a package called the Sports Pac (a combined angling/hunting license with a variety of tags available only for residents).

Not meeting harvest quotas is one reason why administrative removal has become a necessary action in the CMP. Administrative removal could affect hunting opportunity in two ways. When and if zone mortality quotas are met through the combination of hunting harvest, depredation control, and administrative removal, hunting along with administrative removal would be stopped in the zone. Individual response to specific cougar complaints would continue. The other way that administrative removal could affect hunting is by reducing localized populations of cougars available to hunters. However, in many cases, administrative removal would occur in places where hunting is not feasible or is restricted by lack of access to some private lands. In general, administrative removal is expected to have relatively minor impacts on hunting because it would focus on areas continuing to have high levels of conflict in spite of current hunting seasons.

4.1.5 Economic Effects of the Proposed Action

The benefit to cost of administratively removing cougars to reduce damages has not been quantified. Intangible benefits such as human safety or emotional attachment people have for pets that are killed by cougars are not easily quantified. Adaptive management will provide information to better assess the effectiveness of the proposal in reducing losses. While cougar damage management has not been evaluated in terms of a formalized cost benefit analysis, there is considerable evidence that predation management, including removal of predators prior to any damages occurring, is effective, as well as cost effective (USDA 1997, revised, Schwiff and Merrill 2004, Bodenchuk et al. 2003, Wagner and Conover 1999, GAO 2001). Additional discussion on economic considerations of livestock can be found in the CMP, Appendix II (ODFW 2006).

Cost is only one of many variables considered in choosing control strategies. Other criteria include the nature of damage problems, practicality of control measures, environmental, social, or political considerations, and regulatory constraints. The environmental compliance and protection offered through the National Environmental Policy Act, the Endangered Species Act, and other regulatory statutes designed to provide significant benefits to the environment have also increased the cost of wildlife damage control.

Some public comments were focused on concerns surrounding the economic effects on hunting. A reduction in hunting opportunity, whether real or perceived, may result in reduced expenditures by hunters in both tag sales and associated expenditures (travel, supplies, lodging, meals and other expenses). ODFW (2006, Appendix VII) concludes that it is unlikely that significant additional trip and equipment expenditures are linked to possession of a cougar tag when the hunter is acting opportunistically (when hunting for another species but carrying a cougar tag as the majority do with the Sports Pac). Hunters would spend similar amounts for the species they were already targeting such as deer and elk without possession of a cougar tag. Net economic benefits/economic impacts of individuals who target cougar exclusively on a given trip may be reduced with a reduction in hunting opportunity as a result of administrative removals reducing localized populations, whether real or perceived. Net benefits from cougar hunters are likely in the same order of magnitude as for other hunting experiences such as elk at $75 per day, or deer at $56 per day (USFWS 2003a). In addition, economic impacts such as trip expenditures would also be fully attributable to cougar hunts with likely ranges between $60 and $70 per day (Carter Undated in ODFW 2006). However, the number of individuals who would hunt specifically for cougars may be relatively small. Economic benefits may be reduced to some extent if administrative removal of cougars results in reduced cougar hunting, however administrative removal would result in only a minor reduction of hunting opportunity. ODFW has indicated that it would keep the public informed of locations targeted for administrative removals and hunters may avoid these areas if they wish. Alternatively, hunters may increase effort in target areas based on the assumption that target areas are areas with high conflict because of a high cougar density. Cougar tag sales account for only 1.5 percent of revenue for all license and tag sales. For all of these reasons, it is not

expected that administratively removing cougars according to the CMP would cause a substantial effect on State and local revenues if it affected perceived or real cougar hunting opportunity.

In some areas administrative removal of cougars may result in increased numbers of elk, bighorn sheep, or Rocky Mountain goats. These population increases could result in increased viewing and/or hunting opportunities. Viewing of bighorn sheep and Rocky Mountain goats would be increased most dramatically if cougar removal resulted in populations in new areas accessible to the public.

4.2 - Alternative 2 - No Action

The No Action Alternative means that Wildlife Services would not take action to assist ODFW with administrative removals of cougars in Oregon. Other entities may take action in the absence of the Wildlife Services program but Wildlife Services could not fully asses those effects.

4.2.1 Impacts on the cougar population

Under the No Action Alternative, Wildlife Services would not administratively remove cougars as prescribed under the 2006 Oregon Cougar Management Plan (ODFW 2006). The CMP states that Wildlife Services, ODFW employees, or an agent of ODFW could administratively remove cougars. ODFW has already begun developing action plans for each of the three target areas identified and implementation of the action plans has begun. ODFW's removal actions were suspended during the deer and elk hunting seasons but began again in late fall/early winter of 2006. This information was provided to Wildlife Services in a letter received on October 16, 2006, in which ODFW made it clear that cougar removal in each of the selected target areas addressed in this EA are not dependent on Wildlife Services participation. Therefore, the total number of cougars that would likely be removed under this alternative and the resultant effects on the cougar population would be likely to be the same or similar to the proposed action (see Section 4.1.1).

4.2.2 Impacts on non-target species

Wildlife Service would not affect non-target species including threatened and endangered species, under this alternative. The effects on non-target species would depend on the skill and experience of the individuals who are removing cougars, and their adherence to measures that may avoid or minimize effects on threatened and endangered species, pets, and other non-target animals. Effects on non-target species may not always be as evident to some members of the public without Federal accountability and reporting requirements. For example, Wildlife Services is required to consult with the US Fish and Wildlife Services under the Endangered Species Act when any of its programs "may" affect threatened and endangered species, and it is Wildlife Services practice to disclose these findings and any mitigation requirements to reduce impacts on such species to the public through a

public NEPA process when such process is warranted (such as in this case). Under this alternative, Wildlife Services could not determine what effects cougar management by other entities may have on non-target species.

4.2.3 Social Values

Wildlife Services would not take action and would not affect social values of those with strong opinions under this issue. ODFW took into consideration social values during development of the CMP. Social values contributed to the decision to target cougars in areas with high levels of conflicts. Non-Federal agents of ODFW currently use the same methods proposed under Alternative 1. Many of the findings under Section 4.1.3 would equally apply. Opinions about values relating to the selectivity and humane treatment of individual animals could be affected by the level of experience and skill of the individuals taking action. Wildlife Services could not comment on the level of skill and experience of individuals who are outside of its program, but presumably, ODFW would have equally stringent standards for its agents.

4.2.4 Effects of the Proposed Action on Hunting Opportunities

Wildlife Services would have no effect on hunting opportunities. Alternative two would likely result in a similar effect on hunting opportunities as the proposed action since action would be taken by another agent.

4.2.5 Economic Effects

The economic effects may be somewhat similar to the proposed action depending on the skills and experience of any agents taking action. Another opinion expressed during the development of the CMP is the appropriateness of using public monies to fund cougar removal. Under this alternative, no Federal resources would be expended to administratively remove cougars. However, State revenues would be expended as under the Proposed Action. Section 4.1.4 contains a discussion about the appropriateness of using public money to manage wildlife and wildlife damage.

4.3 Summary and Conclusions

Table 4 presents the major conclusions drawn from the analysis.

Table 4. Summary and Conclusions

Issue	Proposed Action (Alt. 1)	No Federal Action (Alt. 2)
Cougar	Removal of cougars is intended to reduce localized populations. WS take would not exceed 200 cougars per year under this proposal. Cumulative effects of cougar removal would not cause the cougar population to fall below minimum levels established for each cougar management zone or statewide.	Similar or the same as the proposed action since non Wildlife Services agents would be expected to implement the same program in the absence of the Wildlife Services program.
Non-target Species	Low negative effect on non-target species, Wildlife Services is accountable for disclosure to public for any take. Game species, livestock, and pets would be expected to benefit by removing cougars from areas with high levels of conflicts.	Negative effects on non-target species in the absence of a Wildlife Services program may be higher than Alternative 1 depending upon skill and experience of agents.
T&E Species	Not likely to adversely affect gray wolf, Canada lynx, no effect on bald eagles or other listed species. Section 7 consultation required for species that may be affected.	No effect by Wildlife Services Unknown effects by non WS agents.
Social	Some people opposed to capture and killing of cougars. Methods used to minimize pain and suffering Not likely to affect visual enjoyment since cougars are secretive.	No effect by Wildlife Services. Humane effects dependent upon skill and experience of non-WS agent. Other social effects likely to be the same. Not likely to affect visual enjoyment of cougars similar to Alt. 1
Effects on Hunting	May reduce localized hunting opportunities if conducted in areas accessible to hunters.	No Wildlife Services effect on hunting. Same overall effect as Alt. 1 since total removals would likely be similar.
Economic Effects	Some people opposed to State or sportsmen's funds used to remove cougars. No Federal funds used to implement this action. Likely to benefit livestock industry and economic benefits from improved game management. May be cost effective as relates to studies on the integrated Wildlife Services program.	No effect by WS. Same overall effect as Alt. 1

Issue	Proposed Action (Alt. 1)	No Federal Action (Alt. 2)
Cumulative	Cougar population in all zones and at state level expected to be well above levels required to sustain viability.	Similar to Alt. 1 since ODFW would initiate actions in the absence of Wildlife Services.

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APPENDIX A – Consultation with USFWS

United States Department of the Interior

FISH AND WILDLIFE SERVICE

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FEB 0 2 2007

Reply To: 8330.I0073 (07)
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FEB 4 2007

Dave Williams, State Director
Oregon State Office
Wildlife Services
6135 NE 80th Ave, Suite A-8
Portland, OR 97218

Subject: Informal consultation on Wildlife Services' proposed cougar control activities in support of the 2006 Oregon Cougar Management Plan (13420-2007-I-0073)

Dear Mr. Williams:

This is in response to your December 20, 2006 correspondence requesting informal consultation with the Fish and Wildlife Service (Service) in accordance with Section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S. C. 1531 *et seq.*). Your letter was received by the Service on December 21, 2006; it documents your evaluation of potential effects on Canada lynx (*Felis canadensis*) and gray wolf (*Canis lupus*) from proposed actions to pursue, shoot, trap, and snare cougars (*Felis concolor*) in conjunction with the Oregon Department of Fish and Wildlife (ODFW) to implement the 2006 Oregon Cougar Management Plan (Cougar Plan)(ODFW 2006). The proposed actions could occur anywhere in Oregon where the ODFW identifies a need for cougar control.

Based on the biological assessment and discussions between our agencies, the U.S. Department of Agriculture - Animal and Plant Health Inspection Service - Wildlife Services (Wildlife Services) has determined, and the Service concurs, that the proposed cougar control activities may affect, but are not likely to adversely affect both Canada lynx and gray wolves. A description of the proposed action and our rationale for concurrence with the effects determinations is provided below.

Description of the Proposed Action

Wildlife Services has been requested by the ODFW to assist with cougar control work as needed to implement management direction in Oregon's Cougar Plan. Wildlife Services will assist by using specially-trained employees and experienced houndsmen and dogs to trail cougars and employ a variety of techniques (e.g., shooting, snares, leg-hold traps, cage traps) to capture and remove individual cougars as specified by the ODFW. The locations, time periods, and duration

of these cougar control efforts will be determined by ODFW based on management objectives for cougar populations identified in the Cougar Plan.

Cougar densities are highest in northeast and southwest Oregon, so cougar control work will likely be most prevalent in those areas (ODFW 2006). However, the proposed control actions could occur anywhere in the State that ODFW determines a need exists. Areas with recurring cougar-related conflicts will be identified as "target" areas. To decrease cougar conflicts in target areas, the objective will be to decrease cougar numbers within the area. Target areas may vary in size from entire ODFW Wildlife Management Units (WMU) where conflict is associated with game management objectives, to small areas encompassing specific areas of livestock damage or threats to human health and safety and predation on pets.

Cougar control techniques may include shooting, foothold traps, cage traps, foot/leg and neck snares, and pursuing with dogs. In or near populated areas where domestic animals, pets or people are present and could encounter foothold traps or snares, cougar cage traps will be used. Cougar cage traps are checked once every 24 hours.

As outlined in your December 20, 2006 letter, Wildlife Services will implement a number of precautionary measures to minimize potential effects on non-target animals, particularly gray wolf and Canada lynx. Specific measures include the following:

- Wildlife Services will maintain regular contact with the USFWS and ODFW to keep apprised of locations and information on the presence of gray wolves or Canada lynx in Oregon.
- Wildlife Services personnel who conduct the proposed cougar management activities in occupied wolf range/habitat shall be trained in identification of wolves and wolf sign.
- Wildlife Services will ensure that their Wildlife Specialists that work in lynx habitat will be trained in identification of Canada lynx and Canada lynx sign, and snowshoe hare and their sign. Training of personnel in Canada lynx and snowshoe hare identification will be conducted by Wildlife Services in collaboration with the local wildlife management offices.
- Wildlife Services will report any sightings of wolves, wolf sign, or wolf depredations to the local USFWS or ODFW within 24 hours. Additional time shall be allowed for remote areas with limited access.
- Wildlife Services will conduct a 24-hour trap check in occupied wolf range/habitat while using foothold traps or foot snares intended for cougars. Traps shall be equipped with a drag, even if solidly staked, and connections shall be welded. All traps pose a threat to juvenile wolves and, therefore, shall not be used in proximity to occupied dens and rendezvous sites from June 1 to October 1 should such sites be formed in the future.
- Neck snares shall not be used near den or rendezvous sites should such sites be established at some point in the future. Neck snares shall not be used within a 3-mile radius around an area where wolf sign is evident. If wolf sign becomes evident in areas where neck snares are already in place they shall be removed immediately.
- Dogs used by Wildlife Services to trail cougars are specially trained to locate and follow a specific scent, which minimizes the chance of trailing non-target species. In the highly

unlikely event that a lynx were pursued or treed in lynx habitat in Oregon, the dogs would be removed from the area immediately.

- The deployment of cougar cage traps will occur outside of areas where wolves or lynx are likely to be present. These traps will also be checked once every 24 hours.
- In the event of a listing status change, designation of critical habitat within Oregon, or environmental or project changes, Wildlife Services will reinitiate consultation if the proposed action may affect the gray wolf or critical habitat accordingly.
- Wildlife Services will incorporate pan-tension devices in foot/leg snares and leg-hold traps in lynx habitat to prevent the capture of lynx and smaller non-target animals. The amount of weight required to trigger the leg-hold trap for a cougar can be increased by the pan-tension device to exclude lynx and other smaller animals.
- Neck snares used to control cougars would only be used in lynx habitat with stops which would preclude capture of the smaller lynx.

Canada Lynx

The Canada lynx was listed as a threatened species in the contiguous United States in March of 2000 (65 FR 16052). No critical habitat has been designated for the species.

The lynx is a medium-sized cat with long legs; large, well-furred paws; long tufts on the ears; and a short, black-tipped tail (McCord and Cardoza 1982). The winter pelage of the lynx is dense and has a grizzled appearance with grayish-brown mixed with buff or pale brown fur on the back, and grayish-white or buff-white fur on the belly, legs and feet. Summer pelage of the lynx is more reddish to gray-brown (Koehler and Aubry 1994). Adult males average 22 pounds (lbs) in weight and females average 19 lbs (Quinn and Parker 1987). The lynx's long legs and large feet make it highly adapted for hunting in deep snow. Snowshoe hares (*Lepus americanus*) are the primary prey of lynx, comprising 35-97 percent of the diet (Koehler and Aubry 1994).

Lynx populations in the contiguous United States occur at the southern periphery of the species' range, whose core is located in the northern boreal forest of central Canada (McCord and Cardoza 1982). In Canada and Alaska, lynx inhabit the boreal forest ecosystem known as the taiga (Agee 2000). In the western United States, the range of lynx extends south from the classic boreal forest zone into subalpine conifer forests (Agee 2000). Within these forest types, lynx are most likely to persist in areas that receive deep snow, to which the lynx is highly adapted (Ruggiero et al. 2000).

Forests with boreal features extend into the northwestern United States at high elevations in the Cascade and Rocky Mountain Ranges. However, these forest patches are small relative to the extensive northern boreal forest of Canada. Most southern boreal forest habitat patches in Oregon and southern Washington are considered too small to consistently support the prey base of snowshoe hares necessary to support resident populations of lynx (Ruggiero et al. 2000).

In the northwestern United States, museum specimens document historic occurrences of lynx in the higher mountains of Washington, Oregon, Montana, and Idaho (McKelvey et al. 2000). However, the historic distribution of resident, breeding populations is unknown. Today, resident

lynx populations are known to exist in high-elevation conifer forests of western Montana and north-central and northeastern Washington (Ruggiero et al. 2000). Resident lynx populations probably also exist in contiguous habitats in northern Idaho.

In Oregon, there is no evidence of lynx reproduction. We periodically receive unconfirmed sighting reports of lynx, but in the last 50 years only three specimens have been documented in the State, and all were collected in areas not considered to be lynx habitat: one in bunchgrass-rimrock habitat in Wallowa County in 1964, one in a suburban residential area near Corvallis in Benton County in 1974 (Verts and Carraway 1998), and a third in Harney County in southeastern Oregon in 1993 (McKelvey et al. 2000). Given the naturally insular habitat in Oregon and the great distance from core populations in Canada, it is possible that lynx have always occurred intermittently in this State as occasional dispersers from the north that have been unable to establish persistent populations. At the present time, there is no known resident population in Oregon, nor is one expected to develop in the foreseeable future given the distance (over 150 miles) from the nearest existing lynx populations in northern Washington/western Montana and the limited extent of suitable habitat.

Given what we know about the status of lynx in Oregon and surrounding areas, Wildlife Services' cougar control activities in Oregon are extremely unlikely to affect lynx. The best available information indicates there is no resident lynx population in this State and the nearest populations are over 150 miles away. Individual lynx do occasionally disperse into Oregon; however, given their extreme rarity it is highly unlikely that a dispersing lynx will encounter a snare or trap set for cougars, especially given that cougar control work will be very limited in the high-elevation habitats preferred by lynx. In addition, the previously identified precautionary measures being taken by Wildlife Services should further reduce the possibility of lynx being affected by the proposed activities.

Gray Wolves

The gray wolf was listed as endangered in 1974 throughout the conterminous U.S., except Minnesota, where it was listed as threatened (39 FR 1171). No critical habitat has been designated for wolves. A nonessential experimental population rule, under section 10 (j) provisions of the ESA, was finalized by the Service in 1994 (59 FR 60266). It established two nonessential experimental population (NEP) areas: the Central Idaho NEP Area that covers all of Idaho south of Interstate Highway 90 and a small portion of southwest Montana, and the Yellowstone NEP Area that encompasses all of Wyoming and all of Montana south of the Missouri River and east of Interstate Highway 15. Wolves within the NEP areas are covered by special regulations, and are managed as "threatened" species. Gray wolves occurring outside those NEP boundaries are managed as endangered species.

Gray wolves are the largest wild members of the dog family (Canidae). In the Northern Rocky Mountains, the average weight of an adult male wolf is over 100 pounds (lbs), and some weigh up to 130 lbs. Females weigh less than males, averaging 75 - 88 lbs. Wolves' fur color is frequently a grizzled gray, but it can vary from pure white to coal black (Gipson et. al 2002). Males are usually 5.0 - 6.5 feet (ft) from nose to tail tip, while females range from 4.5 - 6.0 ft in length. Most wolves stand 2.1 - 2.6 ft tall at the shoulder. Tracks are normally 4.3 - 5.5 inches

long. With its long legs and deep, narrow chest, the wolf is well suited for fast and far-ranging travels (Service 1987).

Gray wolves are highly social and live in packs of 2 to 12 individuals, which typically consist of a dominant breeding pair, their offspring from the previous year, and new pups. Packs typically occupy large distinct territories, 200-500 square miles in size, and they defend these areas from other wolves or packs. Dispersing wolves may cover large areas as lone animals as they try to join other packs or attempt to form their own pack in unoccupied habitat. Dispersal distances in the Northern Rocky Mountains average about 60 miles, but dispersals over 500 miles have been documented (Boyd and Pletscher 1999). For detailed information on the biology of this species see the "Biology and Ecology of Gray Wolves" section of the April 1, 2003, final rule to reclassify and remove the gray wolf from the list of endangered and threatened wildlife in portions of the conterminous United States (68 FR 15804).

Wolves were once common throughout North America and they historically were widespread in Oregon. By 1930, following the decline of bison, deer, elk, and other ungulates by unregulated hunting and human settlement, wolves were eradicated from the western states by humans, primarily due to conflicts with livestock (Service 1987).

The Northern Rocky Mountain Wolf Recovery Plan (Recovery Plan) was completed in 1980, and revised in 1987 (Service 1987). Three recovery areas were delineated in the Recovery Plan: northwest Montana, Greater Yellowstone Area, and central Idaho. The recovery objective established in the Recovery Plan was to ensure that each of the three recovery areas maintained 10 breeding pairs for three consecutive years.

After the establishment of NEP areas, the Service reintroduced wolves into central Idaho and Yellowstone in 1995 and 1996 (Bangs and Fritts 1996; Bangs et al. 1998). Since that time, the northern Rocky Mountains gray wolf population has increased dramatically and has well exceeded the recovery objectives for breeding pairs (Service et al. 2005; 70 FR 61770). In recognition of that situation, on January 29, 2007, the Service announced a proposal to remove the Northern Rocky Mountains gray wolf population from the federal endangered species list. The eastern third of Oregon is considered to be within that population boundary.

Oregon was not a part of the federal wolf recovery effort and, at the present time, there are no known wolf packs in the State. However, as of December 2006, the activity centers of two documented wolf packs in western Idaho are less than 15 miles from the Oregon border and at least six more Idaho packs are within 50 miles of the border, well within the average wolf dispersal range. In 1999 and 2000, three separate wolves, all dispersers from Idaho, were documented in eastern Oregon; one was captured and returned to Idaho and the other two were found dead. Since then, the Service and ODFW have received numerous reported wolf sightings from the public, some of which appear quite credible. These sightings, as well as other evidence collected by ODFW and Service personnel suggest that there are a small number of dispersing wolves in eastern Oregon at this time.

Given the substantial increase in the Idaho wolf population in recent years, more wolves are expected to disperse into Oregon in coming years and packs are expected to form. In

anticipation of this situation, ODFW has developed an Oregon Gray Wolf Conservation and Management Plan to guide wolf management in the State (ODFW 2005). That plan establishes population objectives for wolves in the State and provides guidelines for their conservation. Thus, in the long-term, there is a high likelihood that Oregon will have a wolf population. However, the plan calls only for natural recolonization of wolves moving under their own power from other areas; there will be no reintroduction to accelerate population establishment as was done in central Idaho and Yellowstone. So, wolf establishment in Oregon will likely be a slow, gradual process with colonization expected to be limited to the northeast corner of Oregon for at least the next three to five years.

Given what we know about gray wolves in Oregon and surrounding areas, Wildlife Services' cougar control activities, as proposed, will not affect wolves across most of Oregon over the next five years because there will be no wolves in those areas. However, a small number of wolves are likely to be present in northeast Oregon. In that region, the measures proposed by Wildlife Services, particularly those involving modifications to the use of traps and snares in occupied wolf habitat, should effectively reduce the likelihood that wolves will be caught in these devices. Close coordination between Wildlife Services, ODFW, and the Service will be needed to ensure that Wildlife Services field personnel are aware of known wolf activity areas.

Conclusion

Based on the above information, the Service concurs with your determination that the proposed cougar control activities may affect, but are not likely to adversely affect Canada lynx and gray wolves.

This concludes informal consultation pursuant to section 7(a)(2) and 7(c) of the ESA. If new information reveals effects of the action may affect listed species in a manner or to an extent not considered in this consultation; the action is subsequently modified in a manner that causes an effect to listed species or critical habitat that was not considered in this consultation; and/or, a new species is listed or critical habitat is designated that may be affected by this action, Wildlife Services would need to reinitiate consultation.

We appreciate your efforts to minimize effects to listed species. Wildlife Services is encouraged to continue to explore opportunities to promote the conservation of listed species. If you have questions regarding this concurrence, please contact John Stephenson at 541-312-6429 or me at 541-962-8584.

Sincerely,

Gary S. Miller
Field Supervisor

cc:
Nancy Gilbert, Fish and Wildlife Service, Bend, Oregon

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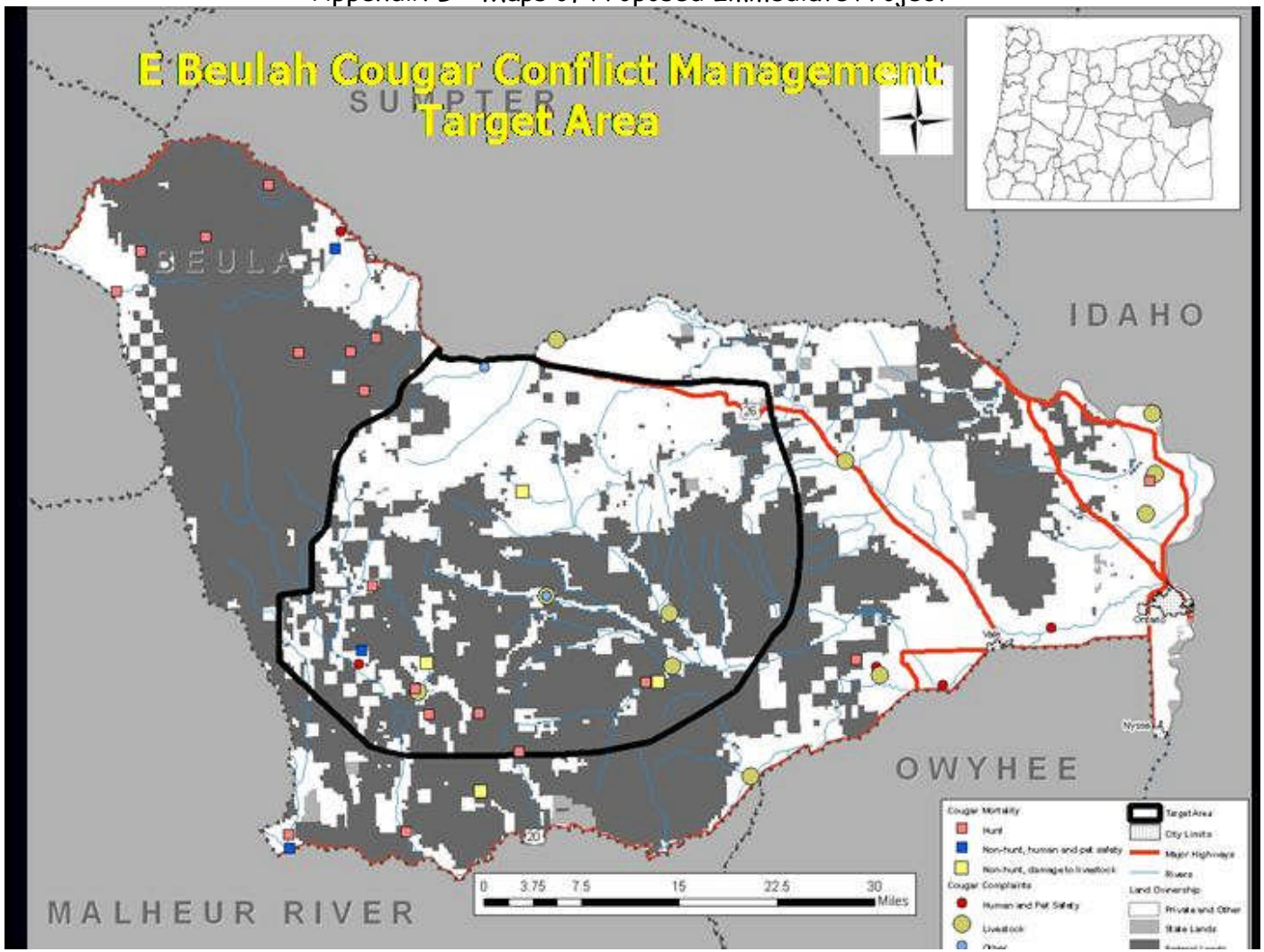
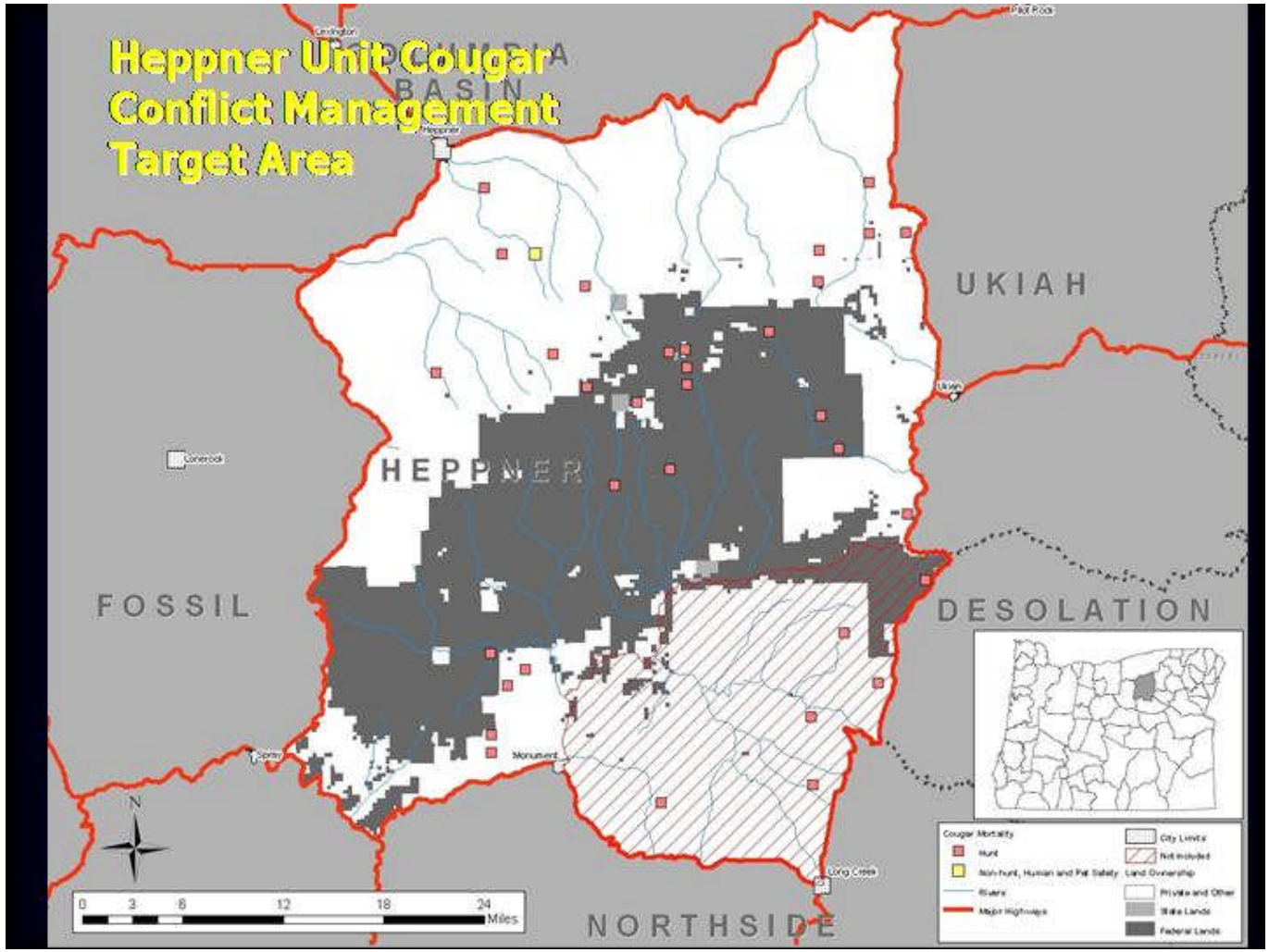
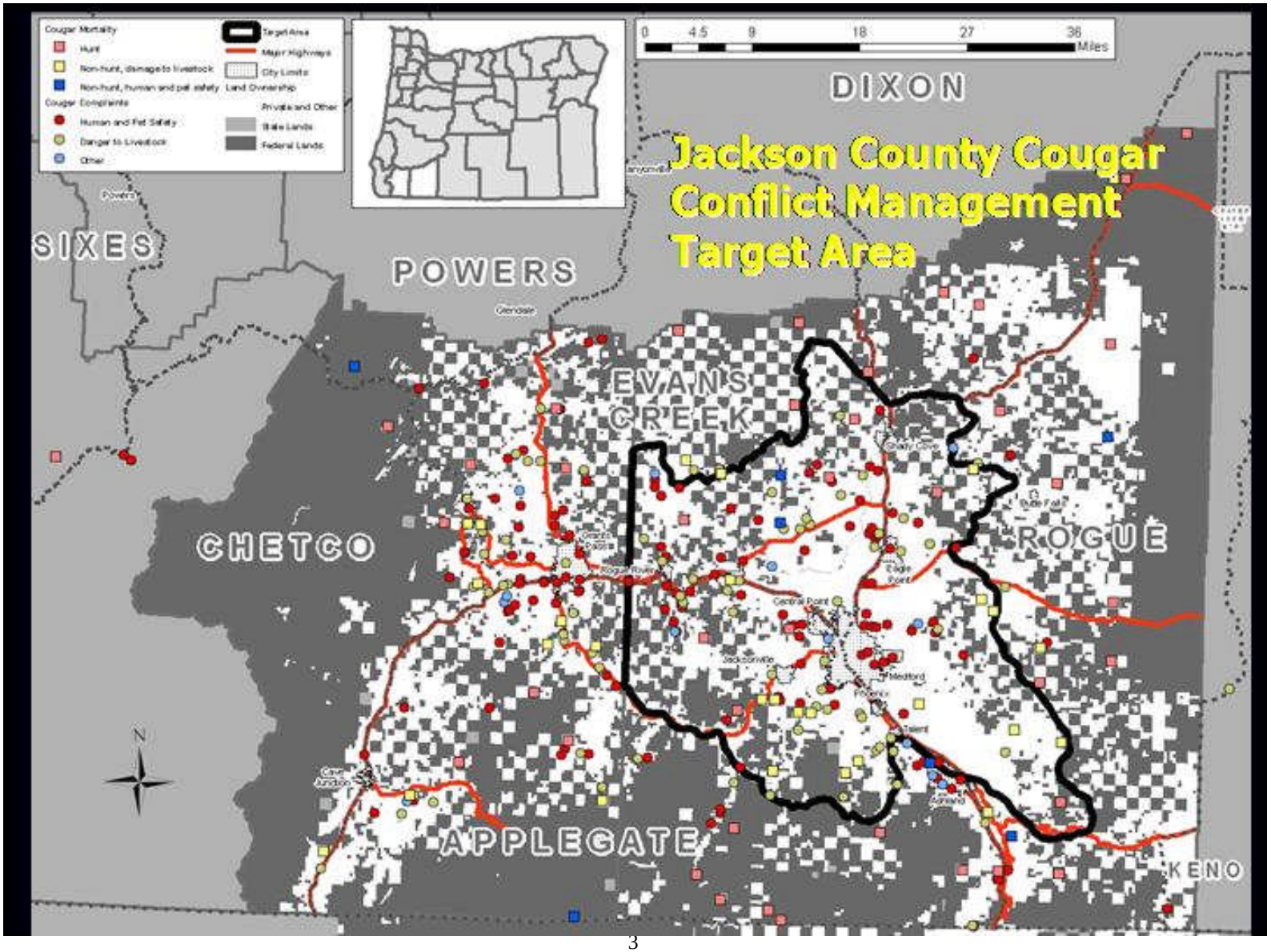
Appendix B – Maps of Proposed Immediate Project




Heppner Unit Cougar
Conflict Management
Target Area
BASIN
UKIAH
HEPPNER
FOSSIL
DESOLATION
NORTHSIDE
Monument
Long Creek
N
0 3 6 12 18 24
Miles
Cougar Mortality
Hunt
Non-hunt, Human and Pet Safety
Rivers
Major Highways
City Limits
Not Included
Land Ownership
Private and Other
State Lands
Federal Lands


Jackson County Cougar
Conflict Management
Target Area
DIXON
SIXES
POWERS
EVANS
CREEK
CHETCO
ROGUE
APPLEGATE
KENO
Cougar Mortality
Hunt
Non-hunt, damage to livestock
Non-hunt, human and pet safety
Cougar Complaints
Human and Pet Safety
Danger to Livestock
Other
Target Area
Major Highways
City Limits
Land Ownership
Private and Other
State Lands
Federal Lands
0 4.5 9 18 27 36
Miles
N