

Summary of April 30, 2003 Meeting between USDA/Wildlife Services
and US Fish & Wildlife Service to Discuss Section 7 Consultation

Meeting Location: USDA/Wildlife Services office (Bismarck, ND)

Meeting Participants: Phil Mastrangelo (WS), John Paulson (WS), Jeff Towner (FWS), Rich Grosz (FWS), Bill Bicknell (FWS), and Karen Kreil (FWS)

Meeting Start Time: 15:00

- R. Grosz provided WS with copies of investigation reports of eagle/M-44 incident and gray wolf/M-44 incident.
- FWS discussed the need for initiation of informal Section 7 consultation as result of above mentioned M-44 incidents. WS concurred with FWS on this issue
- FWS provided WS with general information about the Section 7 consultation.
- Both agencies agreed to share information relevant to the Section 7 process.

Meeting Concluded: 15:30

**ENDANGERED SPECIES ACT - SECTION 7 CONSULTATION
BIOLOGICAL OPINION**

**USDA - WILDLIFE SERVICES
PREDATOR DAMAGE MANAGEMENT CONTROL PROGRAM
IN NORTH DAKOTA**

MAY 24, 2004

INTRODUCTION

This document transmits the Fish and Wildlife Service's (Service) biological opinion based on our review of U.S. Department of Agriculture's Wildlife Services' (Wildlife Services) predator damage management control program for the State of North Dakota, in accordance with Section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.). Your final biological assessment and request for formal consultation was received on December 9, 2003.

This biological opinion is based on information provided in the biological assessment, coordination meetings held between our agencies during the past year, and other sources of information. A complete administrative record for this consultation is on file at our office.

Wildlife Services' biological assessment addresses potential impacts associated with their predator damage control program to all federally listed threatened and endangered species that are known to occur in North Dakota. The biological assessment concludes that predator damage management control activities conducted in the State will have no effect on the western prairie fringed orchid (*Platanthera praeclara*), pallid sturgeon (*Scaphirhynchus albus*), and whooping crane (*Grus americana*) and may affect, but is not likely to adversely affect, the least tern (*Sterna antillarum*), piping plover (*Charadrius melodus*), and black-footed ferret (*Mustela nigripes*). Wildlife Services also determined that their predator management actions are not likely to adversely modify designated critical habitat for the piping plover. The Service concurs with Wildlife Services' determinations for the referenced species and critical habitat.

Wildlife Services' biological assessment also considered the potential effects of the predator control program on two candidate species, the Dakota skipper (*Hesperia docotae*) and black-tailed prairie dog (*Cynomys ludovicianus*). While a formal section 7 determination is not required for candidate species, the Service agrees that the current predator damage control activities in North Dakota will not adversely impact the Dakota skipper or black-tailed prairie dog.

Wildlife Services determined that predator damage management control activities may affect, likely to adversely affect the bald eagle (*Haliaeetus leucocephalus*) and gray wolf (*Canis lupus*). This biological opinion addresses the species that Wildlife Services determined their work "may affect, likely to adversely affect".

Consultation History

Consultation on Wildlife Services' predator control programs have taken place at both the national and state levels. In July 1992, the Service issued a biological opinion on the operation, research, and technical assistance phases of Wildlife Services' programs throughout the United States. Wildlife Services is currently in the process of updating its national biological assessment for predator control activities. In North Dakota, Wildlife Services previously requested formal consultation with the Service on March 15, 1996. At that time, the Service determined that Wildlife Services' predator damage management control program would have no effect on listed species throughout North Dakota. Since the Service's no effect determination was issued in 1996, new information concerning the recovery of bald eagle and gray wolf populations has become available and predator damage control activities in North Dakota have resulted in the loss of a bald eagle and a gray wolf.

Description of the Proposed Action

Wildlife Services uses integrated damage management strategies when undertaking direct assistance programs. Integrated damage management includes integration and application of all approved methods to reduce wildlife conflicts through prevention and management. A wide variety of methods and strategies are used, including cultural and husbandry practices utilized by landowners, habitat modification, animal behavior management, local population reduction, or a combination of these practices. The selection of wildlife damage management methods and their application takes into consideration the species causing the damage and the magnitude, geographic extent, duration, frequency, and likelihood of recurring damage. In addition, consideration is given to non-target species, environmental conditions and impacts, social and legal factors, and the relative cost of management options. In North Dakota, Wildlife Services' predator damage management programs focus primarily on reducing livestock losses resulting from coyote depredation. Other work conducted by Wildlife Services throughout the State includes beaver damage management, bird damage to crops, urban wildlife complaints, and human health and safety issues. The biological assessment prepared by Wildlife Services describes predator damage management activities in North Dakota.

STATUS OF LISTED SPECIES RANGE WIDE

BALD EAGLE

Species Description

The bald eagle, *Haliaeetus leucocephalus*, is the only species of sea eagle native to North America. The female bald eagle usually weighs 10 to 14 lbs (4.5-6.4 kg) in the northern sections

of the continent and is larger than the male, which weighs 8 to 10 lbs (3.6-4.5 kg). The wings span 6 to 7 ft (1.8-2.1 m).

The plumage of the bald eagle is highly variable, depending on the timing and sequence of the molt and age of the individual. The distinctive adult plumage including white head, neck, and tail; dark brown body; and yellow beak, iris, foot, and leg are obtained by 5.5 years. The plumage of juvenile birds can be confused with adult golden eagles (*Aquila chrysaetos*). The body coloration of the immature bald eagle is variable in the amount and distribution of white mottling. Immature birds have a dark breast, contrasting with a paler throat and belly. The head undergoes changes with progressive molts, changing from dark brown in the juvenile to snow white. Tail coloration also changes gradually with the disappearance of the brown-black tail band and increasing amounts of white. By age, 3.5 tail feathers are largely white. (Buehler 2000)

Historic and Current Range Wide Distribution

Historically, the bald eagle nested in at least 45 of the contiguous 48 states. The bald eagle ranges throughout much of North America, nesting on both coasts from Florida to Baja California, Mexico in the south, and from Labrador to the western Aleutian Islands, Alaska, in the north. The population of bald eagles in North America was estimated to be 250,000 to 500,000 birds prior to European settlement. The breeding range of the bald eagle was greatly diminished during the 19th and 20th centuries.

Bald eagles winter throughout the country, but are most abundant in the West and Midwest. Approximately 16,000 bald eagles were counted during the 1992 nationwide midwinter survey of the lower 48 States (Florida, Maine, and Washington data were only partial or incomplete), and approximately 12,000 bald eagles were counted during the 1993 midwinter surveys with 36 States reporting (USFWS 1999).

Life History

Bald eagles are long lived. The longest living bald eagle known in the wild was reported near Haines, AK, as 28 years old (Schempf 1997). It is presumed that once bald eagles mate the bond is long-term, though documentation is limited. Variations in pair bonding are known to occur. If one mate dies or disappears, the other will accept a new partner.

Bald eagle pairs begin courtship about a month before egg-laying. In the south, courtship occurs as early as September; in the north, as late as May. Incubation lasts approximately 35 days and fledging takes place at 11 to 12 weeks of age. Parental care may extend 4 to 11 weeks after fledging (Wood et al. 1998).

Eagles wintering areas typically offer an abundant supply of readily available food and suitable locations for night roosting. Night roosts offer isolation from human activity and thermal

protection from winds. Carrion and easily scavenged prey provide important sources of winter food in terrestrial habitats far from open water. Young eagles may wander randomly for years before returning to nest, usually in close proximity to their natal areas.

Population Status and Trends

The bald eagle was listed as endangered under the Endangered Species Protection Act (Act) of 1966 on March 11, 1967 (32 FR 4001). On February 14, 1978 (43 FR 6233), the species was listed as endangered in 43 states except Washington, Oregon, Minnesota, Wisconsin, and Michigan, where it was listed as threatened. On July 12, 1995 (60 FR 36000) the eagle was reclassified as threatened in all 48 conterminous states. On July 6, 1999 (64 FR 36454), the Service proposed to delist the species in the 48 conterminous states. The bald eagle also occurs in Alaska and Canada, where it is not at risk and is not protected under the Act; and in small numbers in northern Mexico.

Since the bald eagle was listed throughout the lower 48 states, this species has dramatically increased in numbers and expanded its range. A partial survey conducted by the National Audubon Society in 1963 reported 417 active bald eagle nests, with an average of 0.59 eaglets produced per nest. Surveys coordinated by the Service in 1974 reported 791 occupied breeding areas in the conterminous United States. In 1994, the Service, in coordination with a network of cooperators, reported approximately 4,450 occupied breeding areas, with an estimated average young per occupied territory of 1.16. By 2000, the breeding population of bald eagles exceeded 6,471 breeding pairs. The bald eagle population in the lower 48 states has essentially doubled every 7 to 8 years during the past three decades.

To facilitate the recovery of the bald eagle, the Service divided the lower 48 states into five recovery regions. Bald eagles in North Dakota are part of the Northern States Recovery Region. The delisting goal for this region is 1,200 occupied breeding territories in at least 16 of this 25 state region, with an average annual production of at least 1.0 young per occupied nest (USFWS 1983). The Northern States recovery goals were met in 1991, with 1,349 occupied breeding areas in 20 states. In 1998, the estimated number of occupied breeding areas for the Northern States Recovery Region exceeded 2,204 (USFWS 1999).

Habitat and Food Requirements

Habitat Characteristics - The bald eagle is a bird associated with aquatic ecosystems. Eagles frequent estuaries, large lakes, reservoirs, major rivers, and some seacoast habitats. Bald eagles usually nest in large trees near water, but are known to nest on cliffs and (rarely) on the ground. Nest sites are usually located in relatively remote areas that are free of disturbance. The trees must be sturdy and open to support a nest that is often 5 ft (1.5 m) wide and 3 ft (.9 m) deep. Adults tend to use the same breeding areas year after year and often use the same nest, though a breeding area may include one or more alternate nests. In winter, bald eagles frequently congregate at the same specific sites year after year. The winter concentration sites are generally

close to open water and provide suitable perch and roost locations. In North Dakota, bald eagles concentrate during the winter along open water stretches of the Missouri River below Garrison Dam and at the confluence of the Yellowstone and Missouri Rivers.

Food and Feeding Habits - Bald eagles primarily feed on fish, although they are opportunistic and will take waterfowl, gulls, and carrion. Wintering bald eagles depend on suitable night and severe weather roosts in sheltered timber stands (Steenhoff 1976) with an abundant, readily available food supply.

Range Wide Distribution and Abundance of Habitat

Bald eagle habitat is distributed throughout much of North America, in association with bodies of water, such as lakes and rivers, that support abundant fish and waterbird prey and have large trees or snags that provide nest, perch and roost sites. Recovery has been broadly distributed throughout the bald eagle's range. In 1984, 13 of the lower 48 states had no nesting pairs of bald eagles. By 1998, all but two states supported nesting bald eagles. In 1984, the States of Florida, Wisconsin, Michigan, Minnesota, Washington and Oregon contained 73 percent of known nesting pairs in the conterminous United States. By 1998, these states had a reduced share of 56 percent of all nesting pairs, due to increased nesting in other states. Based on the increasing population trend and the dispersal of breeding pairs into new areas, neither nesting nor wintering habitats appear to be limiting, and there is no indication that the availability of habitats will limit the bald eagle population in the near future (USFWS 1999).

Factors Affecting the Species Range Wide

Habitat Loss and Degradation - Nesting and wintering habitat are both critical to the continued survival of the bald eagle. Based on increasing population trends, neither nesting nor wintering habitats appear to be limiting, and there are no indications that availability of these habitats will limit the bald eagle population in the near future.

Pollution/Contaminants - The pesticide Dichloro diphenyl trichloroethane (DDT) came into widespread use after World War II. Initially, DDT was sprayed extensively along coastal and other wetland areas to control mosquitos (Carson 1962). Ingestion of DDT through the eagle's diet of fish, waterfowl, gulls, and other prey caused eggshell thinning. As a result, many eggs broke when incubated by the parent, while others suffered embryonic mortality and failed to hatch. By the early 1960s, recruitment had dropped and population numbers plummeted. In response to human health risks associated with DDT, the use of DDT in the United States was banned in 1972.

By 1976, registrations of dieldrin, heptachlor, chlordane, and other toxic persistent pesticides were canceled for all but the most restricted uses nationwide. Most uses of polychlorinated biphenyls (PCBs) were restricted in 1977 and continued to be phased out during the 1980s (Schmitt and Bunck 1995).

During the 1970s, the Service implemented a monitoring program to examine the long-term trends in the presence of pesticides and other harmful chemicals in fish and wildlife (Schmitt and Bunck 1995). Fish, starlings, and duck wings were collected nationwide between 1972 and 1985. The nationwide monitoring program documented that the downward trend of DDT concentrations in fish, starlings, and ducks wings was paralleled by declining DDE (a degradation product of DDT) concentrations in bald eagle eggs and increasing eagle eggshell thickness (Wiemeyer et al. 1993). Concentrations of other persistent insecticides such as heptachlor, dieldrin, endrin, and chlordane were also documented as declining nationally in fish, starlings, and duck wings.

High concentrations of mercury cause a variety of neurological problems in bald eagles. Flight and other motor skills can be significantly altered. High mercury concentrations may also reduce the hatching rate of eggs. Concentrations of mercury in fish declined significantly from 1969 through 1974 as a result of restriction on its uses, but concentrations have not changed appreciably since 1974. Recent findings have highlighted the importance of atmospheric transport in the maintenance of elevated mercury concentrations and the accumulation of mercury in certain areas, such as Lake Champlain and the Florida Everglades (Schmitt and Bunck 1995).

The most important source of lead affecting bald eagles is waterfowl wounded with lead shot. The requirement in 1991 to use nontoxic shot for waterfowl hunting has reduced the threat of lead poisoning to bald eagles.

Other Factors Affecting the Species - Several other causes of mortality to individual eagles have been identified. Many electrical transmission lines have been configured to avoid/reduce electrocution of raptors, although losses continue to occur. Power lines that cause eagle mortalities need to be identified and retrofitted to prevent additional losses. Areas where road-killed animals are left near the highway can result in eagles colliding with vehicles, particularly during the winter when eagles rely more heavily on carrion. Efforts to reduce these mortalities are being undertaken locally.

Human disturbance of bald eagles is a continuing threat which may increase as eagle populations expand and human development continues in rural areas. Numerous studies have documented that most bald eagles will flush from the nest site if disturbed by human presence. If disturbance occurs frequently, nesting can fail, and the adults may or may not renest. Through the Endangered Species Act recovery process, management guidelines have been developed for bald eagle nesting and wintering sites in various portions of the species' range. Specific conservation measures have also been developed through the section 7 consultation process to reduce impacts to bald eagles and their habitats.

GRAY WOLF

Species Description

Gray wolves are the largest wild members of the Canidae, or dog family, with adults ranging from 18 to 80 kilograms (40 to 175 pounds) depending upon sex and subspecies (Mech 1974). Wolves' fur color is frequently a grizzled gray, but it can vary from pure white to coal black. Wolves may appear similar to coyotes (*Canis latrans*) and some domestic dog breeds, such as the German shepherd or Siberian husky (*C. familiaris*). However, wolves' longer legs, larger feet, wider head and snout, and straight tail distinguish them from both coyotes and dogs.

Historic and Current Range Wide Distribution

The gray wolf historically ranged across most of North America, Europe, and Asia. In North America, gray wolves formerly occurred from the northern reaches of Alaska, Canada, and Greenland to the central mountains and the high interior plateau of southern Mexico. The only areas of the conterminous United States that apparently lacked gray wolf populations since the last glacial events are parts of California and portions of the eastern and southeastern United States (an area occupied by the red wolf). In addition, wolves were generally absent from the extremely arid deserts and the mountaintops of the western United States (Young and Goldman 1944, Hall 1981, Mech 1974, Nowak 2000).

European settlers in North America and their cultures often had superstitions and fears of wolves. Their attitudes, coupled with perceived and real conflicts between wolves and human activities along the frontier, led to widespread efforts to control/eradicate wolf populations. Poisons, trapping, and shooting-spurred by Federal, state, and local government bounties resulted in extirpation of this once widespread species from more than 95 percent of its range in the 48 conterminous states. At the time of the passage of the Endangered Species Act, likely only several hundred wolves remained in northeastern Minnesota and on Isle Royale, Michigan, and possibly a few scattered wolves in the Upper Peninsula of Michigan, Montana, and portions of the southwest United States (USFWS 2003).

Within the last decade, the prospects for gray wolf recovery in several areas of their former historical United States range have greatly increased. In the western Great Lakes area, wolves have dramatically increased their numbers and occupied range. Gray wolf reintroduction programs in the northern U.S. Rocky Mountains have shown great success. Additionally, the reintroduction and recovery program of the Mexican wolf in the American Southwest, although in its initial stages, is beginning to show similar progress after only a few years.

Life History

Wolves are social animals, normally living in packs of 2 to 12 wolves. However, two packs within Yellowstone National Park had 22 and 27 members in 2000, and Yellowstone's Druid

Peak pack increased to 37 members in 2001 (Service et al. 2001, 2002). Packs are primarily family groups consisting of a breeding pair, their pups from the current year, offspring from the previous year, and occasionally an unrelated wolf. Packs typically occupy, and defend from other packs and individual wolves, a territory of 50 to 550 square kilometers (20 to 214 square miles). Normally, only the top-ranking (“alpha”) male and female in each pack breed and produce pups. Litters are born from early April into May; they can range from 1 to 11 pups, but generally include 4 to 6 pups (Michigan Department of Natural Resources 1997; Service 1992a; Service et al. 2001). Normally a pack has a single litter annually, but producing 2 or 3 litters in one year has been documented in Yellowstone National Park (Service et al. 2002). Yearling wolves frequently disperse from their natal packs, although some remain with their natal pack. Dispersing wolves may become nomadic and cover large areas as lone animals, or they may locate suitable unoccupied habitat and a member of the opposite sex and begin their own territorial pack. Dispersal movements on the order of 800 km (500 mi) have been documented (Fritts 1983; James Hammill, Michigan DNR, in litt. 2001).

Population Status and Trends

While the gray wolf’s historic range included most of the lower 48 states, there is limited information quantifying wolf populations. As early settlers moved westward populations of big game animals, that provided the primary source of prey for wolves, were depleted. When wolves turned to livestock, landowners and government agencies began a campaign to eliminate wolves. Bounties paid for dead wolves began during the 1800s and by the early 1900s wolves were extirpated from southern Minnesota and Wisconsin. Bounties initiated in the 1800s continued until 1965 in Minnesota. Between 1965 and 1974, Minnesota maintained an open season on wolves and the State conducted a Directed Predator Control Program. During this time, the wolf population in Minnesota was estimated to be 350 to 700 animals.

Today about 2,445 wolves live in the wild in Minnesota, fewer than 20 on Lake Superior’s Isle Royale, about 278 in Michigan’s Upper Peninsula, 323 in Wisconsin, and about 664 in the northern Rocky Mountains of Montana, Idaho, and Wyoming. Wolves are being reintroduced to Arizona and New Mexico. Occasional wolves are seen in Washington State, North Dakota, and South Dakota. Populations fluctuate with food availability, strife within packs, and disease. In some areas, wolf populations also may change due to accidental and intentional killing by people (USFWS 2003).

Habitat and Food Requirements

Habitat Characteristics

A popular perception is that wolves inhabit only remote portions of pristine forests or mountainous areas, where human developments and other activities have produced negligible change to the natural landscape. Their extirpation south of Canada and Alaska, except for the heavily forested portions of northeastern Minnesota, reinforced this popular belief.

Wolf research, as well as the expansion of wolf range over the last 2 decades, has shown that wolves can successfully occupy a wide range of habitats, and they are not dependent on wilderness areas for their survival. In the past, gray wolf populations occupied nearly every type of habitat north of mid-Mexico that contained large ungulate prey species. An inadequate prey density and a high level of human persecution apparently are the only factors that limit wolf distribution (Mech 1995). Virtually any area that has sufficient prey and adequate protection from human-caused mortality could be considered potential gray wolf habitat.

Food and Feeding Habits

Wolves primarily are predators of medium and large mammals. Wild prey species in North America include white-tailed deer (*Odocoileus virginianus*) and mule deer (*O. hemionus*), moose (*Alces alces*), elk (*Cervus canadensis*), beaver (*Castor canadensis*), and snowshoe hare (*Lepus americanus*), with small mammals, birds, and large invertebrates sometimes being taken (Mech 1974, Stebler 1944, Wisconsin DNR 1999a). In the Midwest, during the last 22 years, wolves have also killed domestic animals including horses (*Equus caballus*), cattle (*Bos taurus*), sheep (*Ovis aries*), goats (*Capra hircus*), llamas (*Lama glama*), pigs (*Sus scrofa*), geese (*Anser sp.*), ducks (*Anas sp.*), turkeys (*Meleagris gallopavo*), chickens (*Gallus sp.*), pheasants (*Phasianus colchicus*), dogs, and cats (*Felis catus*) (Paul 2001, Wydeven et al. 2001a).

Factors Affecting the Species Range Wide

Habitat Loss and Degradation

The gray wolf is highly adaptable to a wide range of habitat conditions. Habitat loss or degradation, does not by itself place the Eastern DPS of the gray wolf in danger of extinction. Recovery efforts over the past decade, as well as state, tribal, and Federal land management agency wolf management plans and practices will provide adequate protection for wolf populations, maintain their prey base, preserve denning sites and dispersal corridors, and are likely to keep wolf populations well above the numerical recovery criteria established in the Federal Recovery Plan for the Eastern Timber Wolf (Service 1992a).

Over Utilization for Commercial, Recreational, Scientific, or Educational Purposes

Since the gray wolf was listed under the Endangered Species Act, no gray wolves have been legally killed or removed from the wild in the conterminous 48 states for either commercial or recreational purposes. Some wolves may have been illegally killed for commercial use of the pelts and other parts, but illegal commercial trafficking in wolf pelts or wolf parts is believed to be rare. Illegal capture of wolves for commercial breeding purposes is also possible, but is believed to be rare. The large fines and prison sentences for criminal violations are believed to substantially discourage and minimize the illegal killing of wolves for commercial or recreational purposes (USFWS 2003).

The taking of wolves by tribes, Federal agencies, organizations, or private citizens for commercial, recreational, scientific, or educational purposes may increase slightly, with the reclassification of the gray wolf from endangered to threatened for both the Eastern and Western distinct population segment. However, the requirement that such take must be consistent with the conservation of the threatened species means that the magnitude of the take will be small and cannot inhibit gray wolf recovery. In addition, any additional take, under the new 4(d) regulation, or threatened wolves by state conservation agency employees must be for scientific research or conservation programs, and therefore must be consistent with continued wolf recovery.

Disease or Predation

Several diseases have had significant impacts on wolf population growth in the Great Lakes region in the past. These impacts have been both direct, resulting in mortality of individual wolves, and indirect, by reducing longevity and fecundity of individuals or entire packs or populations. Canine parvovirus stalled wolf population growth in Wisconsin in the early and mid-1980s, and it has been implicated as a contributing factor in declines of the isolated Isle Royale population in Michigan. Sarcoptic mange impacted wolf recovery in both Michigan's Upper Peninsula and in Wisconsin in this decade, and is recognized as a continuing problem. However, despite these and other diseases and parasites, the overall trend for wolf populations in the western Great Lakes states is upward. The wolf management plans of Minnesota, Michigan, and Wisconsin, include monitoring components that are expected to identify future disease and parasite problems in time to allow corrective action to be taken to avoid a significant decline in overall population viability. The Service does not believe disease impact will prevent wolf recovery.

There are no wild animals that habitually prey on gray wolves. Occasionally wolves will be killed by large prey such as deer or moose (Mech and Nelson 1989) or by a competing predator such as a mountain lion, but this has only been documented on rare occasions and is not believed to be a significant mortality factor.

Humans have functioned as highly effective predators of the gray wolf. Historic efforts to eliminate wolves from the landscape include: the United States Congress passed a wolf bounty that covered the Northwest Territories in 1817. Bounties on wolves subsequently became the norm for States across the species' range. In Michigan, an 1838 wolf bounty became the ninth law passed by the First Michigan Legislature; this bounty remained in place until 1960. A Wisconsin bounty was instituted in 1865 and then repealed about the time wolves were extirpated from the State in 1957. Minnesota maintained a wolf bounty until 1965.

Subsequent to the gray wolf's listing as a federally endangered species, the Act and state endangered species statutes prohibited the killing of wolves except under extenuating circumstances, such as in defense of human life, for scientific or conservation purposes, or under

several special regulations intended to reduce wolf depredations of livestock. This reduction in human-caused mortality is the main cause of the wolf's comeback in parts of its historical range.

Illegal killing of wolves occurs for a number of reasons. Some of these killings are accidental (e.g., wolves are hit by vehicles, mistaken for coyotes and shot, or caught in traps set for other animals), and some of these accidental killings are reported to state, tribal, or Federal authorities. However, it is likely that most illegal wolf killings are intentional and are never reported to authorities. Such killings may be done because of frustration over wolf depredations of livestock or pets, fear for the safety of pets or children, hatred of the species, opposition to wolf recovery, a desire to protest against the government, or for other reasons. The number of illegal killings is difficult to estimate and impossible to accurately determine, because they generally occur in isolated areas and all evidence is quickly concealed.

Despite the difficulty in measuring the extent of illegal killing of wolves, their population and range in the western Great Lakes states has continued to increase. During recent decades, all sources of wolf mortality, including legal (takings for research and depredation control activities) and illegal human-caused mortality, have not been of sufficient magnitude to stop the continuing growth of the wolf population, estimated at about 4 percent average annual increase in Minnesota, and about a 28 percent average annual increase in Wisconsin and Michigan since 1992-1993 (USFWS 2003).

ENVIRONMENTAL BASELINE

BALD EAGLE

Status of the Species within the Action Area - During the 1800s, breeding populations were a regular occurrence along the Missouri River (Stewart 1975). Lewis and Clark documented bald eagles nesting along the Missouri River. After the Corps of Discovery departed from Fort Mandan, located just west of Washburn, North Dakota, in the spring of 1805, there are several journal entries concerning bald eagles. On April 27, 1805, the explorers were camped near the confluence of the Yellowstone and Missouri Rivers. Meriwether Lewis recorded that, "The Eagles, Magpies, and gees have their nests in trees adjacent to each other: the magpye particularly appears fond of building near the Eagle, as we scarcely see an Eagle's nest unaccompanied with two or three Magpies nests within a short distance. The bald Eagle are more abundant here than I ever observed them in any part of the country."

Today, bald eagles primarily nest along the free-flowing reaches of the Missouri River in North Dakota. The Missouri River floodplain forest upstream of Lake Sakakawea and between Garrison Dam and Lake Oahe provides suitable nesting habitat for bald eagles. In 1976, a pair of bald eagles nested below Garrison Dam. No nesting bald eagles were documented in North Dakota from 1977 to 1987. In 1988, two nesting attempts (one active) below Garrison Dam resulted in the fledging of one young. Each year from 1988 to 1995 a single pair of eagles

successfully fledged young from a nest site below Garrison Dam. In 1996, two nesting pairs raised one young each. The Service expected that young eaglets from the earlier successful nests would develop an affinity to the area where raised and nest in the area once they reached sexual maturity. In 1997, the Service conducted an aerial survey of this reach of the Missouri River and documented eight active nests which fledged 12 young. No survey was conducted in 1998; however, eight active nests were documented again in 1999. In addition to the nest documented along the Missouri River, eagle nests have been recently established in Rolette County, the Devils Lake area, and the Red River Valley.

Bald eagles winter along ice-free river reaches near Williston, North Dakota, and below Garrison Dam. Wintering populations on the Missouri River in North Dakota between 1986 and 2004 have fluctuated from a low of 2 to a high of 59 individuals. The wintering populations are highly dependent on the severity of the winter conditions and the availability of open water along the river. The North Dakota Game and Fish Department conducted a bald eagle aerial survey of the Missouri River, from Bismarck to Garrison Dam on January 12, 2004. They recorded 37 adult and 13 immature bald eagles (Isakson pers. comm. 2004). During spring and fall migration bald eagles have been observed in all 53 counties in North Dakota.

Productivity and Recovery Objective within the Action Area - The Northern States Bald Eagle Recovery Plan (USFWS 1983) reports that changes in survival have more impact on the population of bald eagles than similar changes in reproductive rates. Depending on adult survival, populations with lower reproduction can do better than others with higher reproduction (Grier 1980). According to the Northern States Bald Eagle Recovery Plan, the Service has to rely on information about numbers of nesting birds and maintain an assessment of the reproductive side of the population equation.

The initial goal for recovery is to have 1,200 occupied breeding areas distributed over a minimum of 16 states within the Northern States Region by the year 2000, with an average annual productivity of at least 1.0 young per occupied nest. Delisting goals were met in 1991, with 1,349 occupied breeding areas distributed over more than 20 states and an estimated average productivity since 1991 of greater than 1.0. In 1998, the estimated number of occupied breeding areas for the Northern States Recovery Region exceeded 2,200. Distribution of a recovered population within the Missouri River Basin States is given in pairs as follows (USFWS 1983; Montana Bald Eagle Working Group 1986):

Montana	99
North Dakota	10
South Dakota	0
Nebraska	10
Iowa	10
Kansas	0
Missouri	50

By 2000, these objectives have been met or exceeded for all states. On July 6, 1999 (64 FR 36454), the Service proposed to delist the species in the 48 conterminous states. The proposed rule to delist the bald eagle has not been finalized.

Factors Affecting Species Environment within The Action Area - There are a number of factors that can affect nesting and wintering bald eagles in North Dakota. These include commercial and residential development in areas that provide nesting and wintering habitat, clearing of riparian woodlands for agricultural purposes, environmental contaminants, electrocution of birds perching on electrical transmission lines, transmission line collisions, human disturbance at nest sites causing the nest to be abandoned, shooting, and trapping. While each of these factors can potentially result in the loss of an individual bird or affect nest productivity, their combined impact to the population is minor, as the bald eagle population in the lower 48 states has steadily expanded during the past 20 years.

GRAY WOLF

Status of the Species within the Action Area

Wolves were largely eliminated from the Dakotas in the 1920s and 1930s and were rarely reported from the mid-1940s through the late 1970s. Ten wolves were killed in North Dakota and South Dakota from 1981 to 1992; 5 of the mortalities were in 1991 and 1992 (Licht and Fritts 1994). There have been other recent reported sightings of gray wolves, including a 1994 confirmation of a den with pups in extreme north-central North Dakota near the Canadian border.

The increasing numbers of wolves in Minnesota and the accompanying expansion of their range westward and southwestward have led to an increase in dispersing, mostly young, wolves that have been documented in North Dakota and South Dakota in recent years. An examination of skull morphology of North Dakota and South Dakota wolves indicates that of eight examined, seven likely had dispersed from Minnesota; the eighth probably came from Manitoba, Canada (Licht and Fritts 1994). The Service considers wolves in the Dakotas as part of the Eastern Gray Wolf Distinct Population Segment.

Most of the information about the presence of wolves in North Dakota comes from livestock owners that contact Wildlife Services concerning wolf sightings or suspected depredations. Wildlife Services conducts a field investigation for each report that is promptly filed to verify the presence of wolves and determine what, if any, action is warranted. Since 1993, Wildlife Services has responded to 22 suspected wolf depredation complaints throughout North Dakota. In 11 of the 22 cases, there was sufficient evidence (tracks, scat, or visual sightings) to verify the presence of wolves. In most cases, Wildlife Services determined that predator damage management action was not warranted under the conditions of North Dakota's "Contingency Plan for Responding to Gray Wolf Depredations of Livestock."

In the past 12 years, the number of wolf reports received by Wildlife Services has increased. During the 6-year period from 1993 to 1998, Wildlife Services investigated six wolf reports and found adequate sign to verify the presence of wolves in two cases. In the 5 years, from 1999 through 2003, 16 wolf sightings were reported and nine incidents were verified. In 2004, one additional wolf sighting has been confirmed by Wildlife Services to date.

North Dakota Game and Fish Department and the Service are occasionally contacted by citizens to report wolf sightings. In most cases, incidental reports are provided by landowners where no loss of property has occurred or motorists traveling the State's highway system. Follow-up investigations are generally not conducted to verify incidental sightings.

No studies or research initiatives have been conducted to document the number of wolves present in North Dakota. Biologists with the North Dakota Game and Fish Department, Wildlife Services, and Fish and Wildlife Service estimate that the population of wolves in the State ranges between 10 and 20 animals (Mastrangelo and Paulson, pers. comm. 2004).

Factors Affecting Species Within the Action Area - Factors affecting gray wolf populations in North Dakota are similar to the range-wide factors previously described in this document. These factors include habitat loss, disease, collisions with vehicles, illegal shooting, and trapping. Dispersing wolves in North Dakota do not have established territories and can travel substantial distances. Their movement patterns in North Dakota's open landscape may increase the likelihood of livestock depredation and encounters with humans.

The Service anticipated potential wolf depredation problems associated with mostly single, dispersing wolves from the Minnesota and Manitoba populations in the Dakotas. To address the potential depredations, the Service prepared a "Contingency Plan for Responding to Gray Wolf Depredations of Livestock" for each state (USFWS 1992b, 1994). In partnership with Wildlife Services and state animal damage control agencies, the contingency plans established procedures for the live capture and permanent transfer to American Zoo and Aquarium Association (AZA)-approved holding facilities, such as zoos, captive breeding centers, or research facilities, of all depredating or injured/sick wolves in North Dakota and South Dakota. The lethal control of depredating and injured/sick wolves is authorized by the plans only if no AZA-approved holding facilities could be identified.

In 2003, the Service finalized the rule to downlist the gray wolf Eastern Distinct Population Segment (Eastern DPS), including North Dakota, from endangered to threatened (Service 2003). As part of the final rule, the Service concluded that North Dakota lacks significant potential for restoration of the gray wolf, and neither the Eastern Recovery Plan nor the Northern Rockies Plan includes North Dakota as a possible location for restoration of gray wolf populations (Service 1987, 1992a).

Section 4(d) of the Act provides that whenever a species is listed as a threatened species, the Service shall issue regulations deemed necessary and advisable to provide for the conservation of

the species. With the 2003 final rule reclassifying the Eastern DPS of the gray wolf as threatened, the Service retained the special regulation under section 4(d) of the Act that has been crucial to conserving the gray wolf in Minnesota, and we are implementing a similar special regulation to provide similar authority for lethal control of depredating wolves in most of the Eastern DPS.

This new special regulation allows the Service, the wildlife management agencies of North Dakota, South Dakota, Michigan, Wisconsin, Nebraska, Kansas, Iowa, Missouri, Illinois, Indiana, and Ohio, or tribes within these States, or the designated agents of these agencies and tribes to carry out the full spectrum of depredation control actions, from nonlethal opportunistic harassment to lethal control of depredating wolves. The restrictions for lethal depredation control actions, which are based on the Minnesota wolf depredation control program that has been in place since 1985, include:

- 1) Wolf depredation on lawfully present domestic animals must be verified,
- 2) the depredation is likely to be repeated,
- 3) the taking must occur within 1 mile of the depredation site in Michigan and Wisconsin, and within 4 miles of the depredation site in other areas of the Eastern DPS that are west of Pennsylvania,
- 4) taking, wolf handling, and euthanizing must be carried out in a humane manner, which includes the use of steel foothold traps, and
- 5) any young-of-the-year wolf trapped before August 1 must be released, provided the wolf has not sustained a life threatening injury.

Lethal depredation control has been successful in reducing conflicts between the recovering wolf population and domestic animals in Minnesota. It resolves the immediate depredation problem without the removal of excessive numbers of wolves, and avoids removing any wolves when the depredation was not verified as being caused by wolves or is not likely to be repeated. Actions to control wolf depredation authorized by the section 4(d) rule will eliminate the costs, time, and facilities needed to capture, transport, and house live gray wolves that was previously required by North Dakota's "Contingency Plan for Responding to Gray Wolf Depredations of Livestock."

The situation in North Dakota and South Dakota is quite different from that in Michigan or Wisconsin. Wolves that appear in North Dakota and South Dakota are dispersing individuals from Minnesota and Canada, or rarely may be from a pair or small pack. The Service's wolf recovery plans do not recommend actions to promote gray wolf restoration in either of these two States, and the Service does not believe the Act requires or encourages such recovery actions. We also recognize that, due to the more open landscape of the Dakotas and the high likelihood that dispersing wolves will encounter livestock, wolves are more likely to become involved in

depredations on domestic animals. Therefore, we believe a mechanism for prompt control of depredating wolves in these States is necessary. Because there are no known wolf packs that are currently established in North and South Dakota and there are a limited number of wolves dispersing into these States, we believe there is minimal risk when taking control actions under this special regulation, or accidentally trapping or shooting wolves from a nearby non-depredating pack or dispersers that are not involved in the depredation. For this reason, as well as recognition that the much more open landscape of North Dakota and South Dakota means that depredating wolves are likely to travel a greater distance from the depredation site to secure cover, the Service will permit lethal depredation control actions to be undertaken up to 4 miles from the depredation site.

The Service anticipates a higher proportion of wolves in North Dakota will become involved in depredation on domestic animals than the approximately 2 to 3 percent in Wisconsin and Michigan. Thus, if the Minnesota wolf population continues to expand and provide additional dispersing wolves, lethal depredation control activities in North Dakota and South Dakota may also kill on the order of 4 or 5 wolves annually in each of these States. These mortalities will neither slow the recovery of the Minnesota and Michigan-Wisconsin wolf populations nor delay the eventual delisting of the Eastern DPS, because the Eastern Plan does not rely on wolves in North Dakota or South Dakota to achieve any of its recovery criteria. If wolves in the Dakotas are not involved in depredations on domestic animals, they retain all the normal protections of a threatened species (Service 2003).

EFFECTS OF THE ACTION

Most Biological Opinions prepared by the Service address projects that have not been implemented or constructed. This consultation evaluates Wildlife Services' ongoing predator damage management control program and the effects of this work on the bald eagle and gray wolf. Wildlife Services has a long history associated with administering predator damage control programs in North Dakota. As a result, there is a substantive track record to assess the direct and indirect effects of these activities on listed species.

Wildlife Services' proposed action is to continue to utilize the full spectrum of authorized damage abatement control methods to address predator damage to domestic livestock, wildlife, and personal property. In North Dakota, Wildlife Services' predator damage management control program provides assistance to resolve badger, coyote, mink, raccoon, red fox, and striped skunk damage complaints each year. Wildlife Services' programs are also designed to protect human health and safety and minimize the transmission of disease from wildlife to humans and livestock. Methods used to meet the program's objectives include frightening devices such as propane cannons, sirens, and strobe lights (0.2 percent), gas cartridges for fumigating coyote and fox dens (0.3 percent), cage traps (0.5 percent), shooting (2.0 percent), body-gripping traps (3.0 percent), foothold traps (11 percent), neck snares (21.0 percent), M-44 devices, also commonly known as coyote getters (27 percent), and aerial hunting (35 percent).

Standard operating procedures and policies have been developed for each control method in accordance with state and Federal regulations.

Wildlife Services' predator programs primarily focus on eliminating individual animals that have caused the loss of livestock and, to a lesser degree, wildlife and personal property. Selected control methods have the potential to take threatened or endangered species; however, the use of these methods do not affect threatened and endangered species habitat, food sources, or other requirements for the recovery of these species.

Bald Eagle - The Service concurs with Wildlife Services' determination that most predator control methods pose no threat of injury or death to bald eagles. Shooting, aerial gunning, and the use of fumigants all require positive identification of the target species. Cage and body gripping traps are designed for the capture of small and medium sized predators, such as mink, raccoons, and striped skunk. The size of these traps and location where they are placed exclude the capture of a bald eagle. Frightening devices, such as propane cannons, sirens, and strobe lights, are used on a limited basis to scare predators away from livestock. These devices are primarily used during calving and lambing season when livestock is confined to corrals, barns, or small pastures. Frightening devices are not used within 1 mile of bald eagle nesting locations or known roost locations.

The use of foothold traps and neck snares are set to specifically capture target species. Information compiled by Wildlife Services for fiscal year 2002 indicates that 816 animals were taken with foothold traps and snares in North Dakota. Of this total, 97.7 percent of the animals were the targeted species. Policies concerning the use of foothold traps and neck snares have been established by Wildlife Services to minimize the take of non-target species. The policies to minimize the take of non-target species include:

1. Foothold traps and neck snares are generally set along established travel ways or trails being used by the target species. Snares are often placed under fences where the target animal has dug to gain access to a pasture or along trails used by predators.
2. Foothold traps and snares are not set within 30 feet of an exposed animal carcass.
3. Foothold traps are used when the ground is not frozen, typically April until early November. Foothold traps are not used during the winter months when eagles rely more heavily on carrion as a source of food and eagles can concentrate in a localized area where carrion or other sources of food is readily available.
4. Traps and snares are not set within 1 mile of known bald eagle nest locations.

To date, no bald eagles have been injured or killed as a result of a neck snare or foothold trap set by Wildlife Services in North Dakota. However, on occasion eagles have been taken by these methods in other parts of the country.

M-44 devices are a restricted-use pesticide registered by the Environmental Protection Agency (EPA) for the control of coyote, red and gray fox, and feral dogs. The M-44 consists of four components: a 5-7 inch hollow metal tube, which is driven into the ground; a spring-activated ejector in the tube; a capsule holder, which screws into the top of the ejector; and a plastic capsule. The capsule contains 0.9 grams of sodium cyanide, plus inert ingredients. The capsule holder is wrapped with cloth or similar material to hold scented bait to attract the target animal. The M-44 is activated by an animal pulling on the capsule holder, which releases the spring ejector. When sufficient pressure is applied, the sodium cyanide capsule is released into the mouth of the animal.

Sodium cyanide is highly to very highly toxic to birds and mammals. Sodium cyanide powder is a fast-acting toxicant that converts to hydrogen cyanide gas when it comes in contact with moisture. Cyanide gas inhibits an enzyme reaction that is essential to mammalian cellular respiration. This results in central nervous system depression, cardiac arrest, and gross respiratory failure. Sodium cyanide poses no secondary poisoning risks to animals that feed on the carcasses of animals killed by M-44 devices (USDA 1997).

In 1993, the Service evaluated the use of M-44 devices by Wildlife Services and issued a Biological Opinion addressing the effects of the use of sodium cyanide capsules to control predators on threatened and endangered species. The Biological Opinion concluded that M-44 devices may affect seven species of mammals and three species of birds. Based on the available scientific information at that time, the Service concluded that the use of M-44s would have no effect on the bald eagle.

As a result of the Service's 1993 Biological Opinion and EPA's Reregistration Eligibility Decision process for the use of M-44 cyanide capsules, 26 label restrictions were developed governing the use of M-44s by Wildlife Services. Label Restriction No. 9 requires, "The M-44 device shall not be used in areas where federally listed threatened and endangered animal species might be adversely affected. Each applicator shall be issued a map, prepared by or in coordination with the U.S. Fish and Wildlife Service, which clearly indicates such areas." In North Dakota, the Service coordinates with the Wildlife Services to provide information identifying known bald eagle nest and winter roosting locations.

At sites where the loss of livestock has occurred, the livestock carcass is often left in the field as a "draw station" to attract the targeted predator back to the kill site and reduce further losses. Wildlife Services takes precautions to reduce the capture of non-target species by setting foothold traps, snares, and M-44 devices at least 30 feet from the carcass. During the winter when food is sometimes scarce, bald eagles may concentrate at the kill site to feed on the carcass. If a concentration of eagles occurs in the area where snares, foothold traps, or M-44s are set, the risk of take occurring increases.

On February 26, 2002, a bald eagle was killed in North Dakota by pulling an M-44 that was set to reduce coyote depredation. Wildlife Services promptly contacted the Service to report the

incident. To our knowledge, this was the first time during the 35 years that M-44 devices have been used to control coyotes that a bald eagle was taken in the nation. The M-44 was legally set in accordance with EPA's established label restrictions. The label restriction requires M-44s to be placed at least 30 feet from an exposed animal carcass that is used as a "draw station" to attract coyotes. The M-44 device that killed the eagle was set 69 feet away. The number of M-44 devices that can be set is limited to 10 for each 100-acre pasture. Two M-44 devices were being used by Wildlife Services when the loss occurred.

The Service's Law Enforcement Division investigated the circumstances that led to the death of the bald eagle and, in accordance with standard procedures, forwarded the case report to the U.S. Attorney's Office. The case file was reviewed by the U.S. Attorney's Office and a determination was made that prosecution was not warranted.

Gray Wolf - As previously discussed, Wildlife Services employs a number of techniques to reduce predator damage throughout North Dakota. Because the predator control methods are targeted for specific species, several techniques have no effect on the small population of gray wolves in the State. Frightening devices, including propane canons, sirens, and strobe lights are used infrequently during calving and lambing season when livestock is confined to a small area. Cage traps and body gripping traps are used to capture small and medium sized predators including mink, raccoon, and striped skunk. The size of these traps and the location where they are placed prevent the capture of gray wolves. Gas cartridge fumigants are a general use pesticide registered by EPA for use at coyote, red fox, and striped skunk dens. The use of fumigants requires the positive identification of the target animal using the den site.

Shooting and aerial hunting also require positive identification of the target animal. Wildlife Services personnel have extensive experience working with predators and are capable of distinguishing between coyotes and wolves under a variety of field conditions. However, in March 1990 a gray wolf was killed during a Wildlife Services aerial hunting operation in McIntosh County, North Dakota. Wildlife Services was working in cooperation with a landowner to address a coyote depredation losses. The Service's Law Enforcement Division and the U.S. Attorney's Office investigated the case and determined that the loss of the wolf was accidental. The U.S. Attorney's Office declined prosecution. No additional wolves have been taken during Wildlife Service's aerial hunting operations during the past 14 years in North Dakota.

Neck snares, foothold traps, and M-44 devices are techniques specifically used to reduce coyote depredation. Each of these methods can result in the injury or death of a gray wolf. Neck snares are made using 5/64 inch or 3/32 inch galvanized aircraft cable to create a loop that is held in place by a "snare lock" that allows the loop to tighten when resistance is applied. Neck snares are usually set underneath fences where target animals have dug a small passageway to gain entrance to a pasture. Snares are also set on established trails being used by predators.

Neck snares used by Wildlife Services comply with North Dakota Game and Fish Department regulations. The regulations require the use of “break away” snare locks that disassemble at an average pull weight of 350 pounds. The lock allows larger, more powerful animals to escape once captured by breaking the snare lock mechanism (Phillips and Gruver 1996, Turkowski et al. 1984). Recent studies indicate that gray wolves are capable of escaping unharmed from break-away snares that have been set for coyotes (Hart 2003).

State regulations governing the use of snares help to minimize the capture of non-target animals, including the use of a “stop” which limits the loop to a maximum diameter of 12 inches, and a requirement that the bottom of the snare can be no more than 12 inches from the ground. Wildlife Services also stipulates that snares be set no closer than 30 feet from an exposed carcass. In fiscal year 2002, Wildlife Services captured 531 animals using neck snares. The target species was snared 97.2 percent of the time. To date, no gray wolves have been taken in a neck snare set by Wildlife Services in North Dakota.

The use of foothold traps and M-44 devices to reduce coyote depredation may result in the capture, injury, or death of gray wolves. The lures that are used to attract coyotes to set locations also attract other canids, including wolves. If gray wolf sign or activity is detected in the vicinity where coyote control activities are underway, Wildlife Services will remove its standard traps and M-44 devices that are set and rely on shooting or aerial hunting to remove coyotes. Wildlife Services may also use specific types of foothold traps that are capable of restraining coyotes but will not hold gray wolves, if gray wolf activity is detected in the area. Gray wolves accidentally captured in foothold traps set for coyotes that are not injured will be tranquilized and released. To date, no wolves have been taken with foothold traps set by Wildlife Services in North Dakota.

The use of M-44 devices is an effective method to reduce coyote depredation during the winter months (primarily January through April) when frozen ground precludes the use of foothold traps. On March 24, 2003, a 2 year-old female wolf was killed in Mountrail County, North Dakota, when the wolf pulled an M-44 device that was legally set to reduce coyote depredation. Neither the landowner, Wildlife Services, nor the Service had any information indicating that a wolf was present in the vicinity of the predator control operation that was ongoing. This is the only wolf that has been taken by an M-44 device in North Dakota. In accordance with standard practices, the Service’s Law Enforcement Division and the U.S. Attorney’s Office investigated the circumstances that led to the death of this wolf. The U.S. Attorney’s Office determined that prosecution was not warranted.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future state, tribal, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section

because they will require separate consultation pursuant to Section 7 of the Endangered Species Act.

The principal future action affecting the bald eagle and the gray wolf that is reasonably certain to occur is the removal of both of these species from the Federal list of threatened species. While this is a Federal action, state and tribal natural resources agencies will implement management decisions that could affect the gray wolf and to a lesser degree the bald eagle. If the bald eagle is removed from the list of species protected by the Act, bald eagles will retain protection afforded by the Bald and Golden Eagle Protection Act (16 U.S.C. 688-688d), the Migratory Bird Treaty Act (16 U.S.C. 703-711), the Lacey Act (16 U.S.C. 3372 and 18 U.S.C. 42-44) and other Federal and state statutes.

In North Dakota, the gray wolf is classified as a furbearer with a closed season. The North Dakota Game and Fish Department will need to evaluate the status of wolves in the State if protections provided by the Act are removed. North Dakota Game and Fish Department and tribal wildlife agencies in the State have not developed management plans for the gray wolf, in the event that delisting is determined to be warranted.

The 87-mile Garrison reach of the Missouri River and the associated riparian woodland community, extending from Garrison Dam to the headwaters of Lake Oahe, provides nesting and wintering habitat for bald eagles. During the past decade, individual homes and residential developments have been constructed along the river. Projects constructed along stretches of the river that support mature cottonwood trees could limit nesting activity in selected areas. The extent of development that can reasonably be expected to occur is not known.

CONCLUSION

After reviewing the current status of the bald eagle and gray wolf, the environmental baseline for the action area, the effects associated with Wildlife Services' predator damage management control program in North Dakota, and cumulative effects, it is the Service's biological opinion that this action is not likely to jeopardize the continued existence of the bald eagle or gray wolf. No critical habitat has been designated for these species, therefore, none will be affected.

Bald Eagle

The nesting population of bald eagles has steadily increased throughout the conterminous United States since the use of DDT was banned. The number of breeding pairs of bald eagles in North Dakota has also increased. The goal established in the Bald Eagle Recovery Plan for the Northern States population is 1,200 breeding pairs, with an annual production of at least 1.0 eaglet per occupied nest. This goal was exceeded in 1991. Surveys conducted in 1998 indicated that 2,204 breeding territories were occupied in the Northern States.

Wildlife Services' predator damage management control program in North Dakota has resulted in one bald eagle that was killed when the bird activated an M-44 device. To date, no eagles have been injured or killed by foothold traps or neck snares set by Wildlife Services in the State, although eagles have been killed in other states by traps and snares. The Service has reviewed the standard procedures Wildlife Services follows for each method used to control predator damage and conclude that reasonable precautions are being taken to avoid the future loss of bald eagles.

Gray Wolf

The number of individual wolves and packs in the Eastern Distinct Population Segment has increased since the gray wolf was listed as endangered in 1974. On April 1, 2003, the Service downlisted the gray wolf from endangered to threatened and is currently evaluating if removing the gray wolf from the list of threatened species is warranted. As part of the downlisting analysis, the Service concluded that North Dakota lacks significant potential for restoration of the gray wolf and the Eastern Recovery plan does not include North Dakota on the list of potential areas for the restoration of gray wolf populations (Service 1987 and 1992). Therefore, the use of lethal methods to control depredating wolves will not adversely affect the recovery in the Eastern Distinct Population Segment. The 4(d) rule, established by the Service as part of the final rule to downlist the gray wolf, allows for lethal control when specific evidence verifies the loss of livestock was attributable to wolves and the loss of livestock is likely to continue. Wolves accidentally taken by foothold traps, neck snares, or M-44 devices legally set by Wildlife Services to control coyote depredation are not covered by the provisions of the 4(d) rule.

Since 1991, the actions of Wildlife Services' predator damage management control program have resulted in the death of two gray wolves in North Dakota. One animal was shot during an aerial hunting operation and the other was killed by pulling an M-44 device. The Service has reviewed the methods used by Wildlife Services to control predator damage throughout North Dakota and conclude that all reasonable precautions are being taken to avoid the unintentional take of gray wolves.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to use their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of threatened and endangered species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery programs, or to develop biological information.

Information collected by Wildlife Services concerning the occurrence of gray wolves in North Dakota provides the best available indication of wolf populations and long-term trends that is currently available. The coordination procedures that are in place to provide this information to

the Service and North Dakota Game and Fish Department at the end of each fiscal year shall be maintained.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act, provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The measures described below are non-discretionary and must be undertaken by Wildlife Services so that they become binding conditions of any grant or permit issued to an applicant, as appropriate, for the exemption in section 7(o)(2) to apply. Wildlife Services has a continuing duty to regulate the activity covered by this incidental take statement. If Wildlife Services 1) fails to assume and implement the terms and conditions, or 2) fails to require an applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, Wildlife Services must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement. [50 CFR §402(I)(3)]

BALD EAGLE

Amount or Extent of Take Anticipated

The Service anticipates up to two bald eagles per year could be taken as a result of Wildlife Services' predator damage management control program in North Dakota. The incidental take is expected to be in the form of injury or death resulting from the use of snares, foot-hold traps, or M-44 devices set in compliance with State and Federal regulations and EPA's label restrictions governing their use of sodium cyanide capsules in M-44 devices.

Effect of Take

The Service has determined that this level of anticipated take is not likely to jeopardize bald eagle populations.

Reasonable and Prudent Measures to Minimize Take

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize impacts of incidental take of bald eagles. Wildlife Services shall:

1. Conduct predator damage management control activities in a manner that reduces the incidental take of bald eagles.
2. Avoid implementing predator damage control activities that may impact known bald eagle nest sites and winter roost locations.
3. Report the incidental loss or injury of a bald eagle to the North Dakota Field Office - Ecological Services (701- 250-4481) and Law Enforcement (701-255-0593) within 24 hours of the discovery.
4. Prepare a detailed incident report describing the circumstances that lead to the loss or injury of a bald eagle and recommendations concerning how future losses can be avoided.

Terms and Conditions for Implementation of Reasonable and Prudent Measures

In order to be exempt from the prohibitions of section 9 of the Act, Wildlife Services must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline required reporting/monitoring requirements. These terms and conditions are non-discretionary.

- o To implement Reasonable and Prudent Measure Number 1, Wildlife Services will not place M-44 devices, foothold traps, or neck snares within 30 feet of any exposed bait or animal carcass in accordance with the agency's established policy. Foothold traps set for coyotes will be used with pan tension devices to reduce/eliminate the likelihood of capturing a bald eagle.
- o To implement Reasonable and Prudent Measure Number 2, the Service will provide Wildlife Services information documenting bald eagle nest sites and winter roost locations in North Dakota. Wildlife Services will develop operational plans to ensure that predator damage control activities do not take place within 1 mile of an active nest territory from March 15 through August 1. Wildlife Services will also avoid working within 1 mile of winter roost sites from November 15 through March 30 of each year.

- o To implement Reasonable and Prudent Measure Number 3, Wildlife Services shall assess the condition of any bald eagles found in the field. Eagle mortalities shall be reported to the Service within 24 hours and arrangements made to promptly deliver the specimen to the Service's North Dakota Field Office in Bismarck. If a bald eagle is injured by a foot-hold trap or other predator damage control activity, Wildlife Services field staff shall immediately contact the North Dakota Field Office to review the situation and determine the appropriate course of action.
- o To implement Reasonable and Prudent Measure Number 4, Wildlife Services shall prepare an incident report for each bald eagle that is lost or injured in the course of predator damage control activities in North Dakota. The report will describe in detail the circumstances that resulted in the take of a bald eagle and make recommendations concerning how similar situations can be avoided in the future. The incident report shall be submitted to the Field Supervisor, North Dakota Field Office, 3425 Miriam Avenue, Bismarck, North Dakota 58501 within 30 days of the incident.

The Service will not refer the incidental take of any migratory bird or bald eagle for prosecution under the Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. Sec. 703-712), or the Bald and Golden Eagle Protection Act of 1940, as amended (16 U.S.C. Sec. 688-688d), if such take is in compliance with the terms and conditions, including the amount of take, specified herein.

Closing

The Service believes that no more than two bald eagles per year will be incidentally taken as a result of the proposed action. The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize the impact of incidental take that might otherwise result from the proposed action. If, during the course of the action, this level of incidental take is exceeded, such incidental take represents new information requiring reinitiation of consultation and review of the reasonable and prudent measures provided. Wildlife Services must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

In July 1999, the Service proposed delisting the bald eagle. The Service is currently evaluating and responding to all comments that were received. Once this process is complete, the Service will publish a final determination in the Federal Register. During the comment period, numerous questions were submitted concerning protection the bald eagle will have under other Federal statutes if delisting is warranted. If the best available scientific and commercial information indicates that delisting is warranted, the bald eagle will not be subject to section 7 consultation; however, it will still be protected by the provisions of the Bald and Golden Eagle Protection Act, the Migratory Bird Treaty Act, and other state and Federal laws. The Service will prepare guidance concerning protections afforded the bald eagle under those laws following delisting. The Service will advise Wildlife Services concerning any changes affecting the status of the bald eagle and how that applies to this biological opinion.

GRAY WOLF

Amount or Extent of Take Anticipated

The Service anticipates up to four gray wolves per year could be taken as a result of wildlife Services' predator damage management control program in North Dakota. The incidental take is expected to be in the form of injury or death resulting from the use of neck snares, foothold traps and M-44 devices set in compliance with State and Federal regulations and guidelines governing their use.

Effect of Take

The Service determined that this level of anticipated take is not likely to jeopardize the Eastern Distinct Population Segment of the gray wolf.

Reasonable and Prudent Measures to Minimize Take

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize impacts of incidental take of gray wolves in association with predator damage control activities targeted to reduce coyote depredation. Wildlife Services shall:

1. Survey the project area for sign indicating wolf activity prior to setting foothold traps, neck snares, or M-44 devices to control coyotes.
2. Rely on aerial hunting or shooting to control coyotes, if wolf sign is detected and there has not been a verified loss of livestock attributable to wolves.
3. Notify the North Dakota Field Office, Field Supervisor, concerning reported and verified wolf sightings or sign reported in the State within 5 working days.
4. Report the incidental take of a gray wolf to the North Dakota Field Office - Ecological Services (701 - 250-4481) and Law Enforcement (701 - 255-0593) within 24 hours of the discovery.
5. Prepare a detailed incident report describing the circumstances that lead to the loss or injury of the gray wolf, including recommendations concerning how future losses can be avoided.

Terms and Conditions for Implementation of Reasonable and Prudent Measures

In order to be exempt from the prohibitions of section 9 of the Act, Wildlife Services must comply with the following terms and conditions, which implement the reasonable and prudent

measures described above and outline required reporting/monitoring requirements. These terms and conditions are non-discretionary.

- o To implement Reasonable and Prudent Measure Number 1 and 2, Wildlife Services will investigate the project area for wolf sign prior to setting foothold traps, neck snares, or M-44 devices to control coyote depredation. The investigation shall include interviewing the landowner and evaluating evidence at the site where a loss of livestock has occurred. If wolf sign is detected and the verified loss of livestock is attributable to coyotes but not wolves, Wildlife Services will control coyotes using methods that require positive identification of the target species, i.e. aerial hunting or shooting. The use of other coyote damage control methods can resume, provided no additional wolf sign is detected during the next 7 days.
- o Reasonable and Prudent Measures 3, 4, and 5 address notification and reporting requirements for wolf sightings in North Dakota. Transferring information in a timely manner allows the agencies with responsibilities for conservation and management of gray wolves to make sound decisions concerning the species.

Closing

The Service believes that no more than four gray wolves per year will be incidentally taken as a result of the proposed action. The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize the impact of incidental take that might otherwise result from the proposed action. If, during the course of the action, this level of incidental take is exceeded, such incidental take represents new information requiring reinitiation of consultation and review of the reasonable and prudent measures provided. Wildlife Services must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

REINITIATION NOTICE

This concludes formal consultation on the effects of Wildlife Services' Predator Damage Management Control Program for the State of North Dakota. As provided in 50 CFR 402.16, reinitiation of formal consultation is required if:

1. The amount or extent of incidental take is exceeded;
2. New information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in the opinion;
3. The agency action is subsequently modified in a manner that causes an effect to listed species that was not considered in the biological opinion; or

- 
4. A new species is listed or critical habitat designated that may be affected by the action.

In instances where the amount or extent of incidental take is exceeded, the specific operation causing such take must cease pending reinitiation.

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PERSONAL COMMUNICATION

Isakson, Patrick. pers. comm. 2004. Non-game Biologist, North Dakota Game and Fish Department. Bismarck, ND.

Kreil, Randy. pers. comm. 2004. Chief, Wildlife Division, North Dakota Game and Fish Department. Bismarck, ND.

Mastrangelo, Phil. pers. comm. 2004. State Supervisor, USDA, APHIS, Wildlife Services. Bismarck, ND,

Paulson, John. pers. comm. 2004. District Supervisor, USDA, APHIS, Wildlife Services. Bismarck, ND.

Mastrangelo, Philip M (APHIS)

From: Moxcey, Michael S (APHIS) on behalf of MIS2KHELP
Sent: Tuesday, August 16, 2011 5:15 PM
To: Blaney, Darlene G (APHIS); Mastrangelo, Philip M (APHIS)
Cc: MIS2KHELP
Subject: RE: Archived MIS Data Needed for FOIA Request

Phil,
The legacy reports aren't working and the folks who are familiar with the system are out for awhile, Rosa Linda and Nancy.

I was able to pull together the basic data from queries and jam it together:

0094144 EaglesBald M-44 1
(b)(6) half hour worked, fired 2 M-44s, took one Bald Eagle in
McHenry County, Feb 26, 2004

```
select * from ACTIVITY_FORMS where form_id=0094144;
```

FORM_ID	F	AGR	FORM_DATE	TIME	ADCode	M44	M44_TEST	LC	COC
0094144	1	20657	26-FEB-03	.5	206	2	0 01	049	

```
SQL> select * from SPECIES_CONTROL where FORM_ID=0094144;
```

FORM_ID	SCODE	Tgt	QUANTITY	MCODE	K
0094144	096	2	1	002	Killed

MCODE:002 = M-44 CYANIDE CAPSULE M-44 CAPSULE Registration 56228-15
SCODE:096 = EAGLES, BALD
TGT:2 = NT SPECIES IS NOT ON AGREEMENT (NON-TARGET SPECIES)
COUNTY:049 = MCHENRY County
LandClass:01 PRIVATE LANDS
ADCCODE:206 = (b)(6)

AgrContract: 000476 for (b)(6)

If we need more stuff, we'll have to talk to someone familiar with the old data like Rosie or nancy or Darlene.

Mike Moxcey

MIS Help Desk
WS-ITSC
970-498-1450

Darlene G Blaney---08/16/2011 02:53:24 PM---Yes, we can help with it. One of the developers will give you a call. Rosa Linda usually handles the MIS questions from the



United States
Department of
Agriculture

December 9, 2003

Marketing and
Regulatory
Programs

Jeffrey K. Towner, Field Supervisor
U.S. Fish and Wildlife Service
3425 Miriam Avenue
Bismarck, ND 58501

Animal and
Plant Health
Inspection
Service

Dear Mr. Towner:

Wildlife
Services

North Dakota/
South Dakota
State Office

I'm writing to reinitiate a consultation pursuant to Section 7 of the Endangered Species Act for those listed species found in North Dakota that could potentially be affected by USDA Wildlife Services' (WS) predator damage management activities. WS previously entered into a Section 7 consultation with your office on March 15, 1996 on this same topic. At that time, your office concurred that WS actions would have no effect on listed species throughout North Dakota.

2110 Miriam Circle,
Suite A
Bismarck, ND
58501-2502
(701) 250-4405

WS has prepared the attached Biological Assessment (BA). The BA addresses the predator damage management program in North Dakota and the anticipated operational effects of the program on Federally listed candidate, threatened, and endangered species. The BA concludes that selected predator damage management practices may rarely result in the take on an individual; however, the level of take will not adversely affect the populations of listed species or their recovery.

As I understand, your office will use the information provided in the BA as the basis for completing a Biological Opinion. Please contact my office if we can provide any additional information to assist with this process. I also request that a draft Biological Opinion be provided for review and comment prior to issuing the final.

Sincerely,


Phil Mastrangelo
State Director

attachment



United States Department of Agriculture
Animal and Plant Health Inspection Service

Safeguarding American Agriculture

Biological Assessment of USDA Wildlife Services' Predator Damage Management Program in North Dakota

Wildlife Services (WS) is reinitiating consultation in response to the following: (1) additions to the federally listed endangered, threatened, and candidate species in North Dakota, (2) the February 26, 2003 take of a bald eagle by an M-44 device placed by WS for the management of coyote predation to livestock, (3) the March 24, 2003 take of a gray wolf by an M-44 device placed by WS for management of coyote predation to livestock, (4) the April 1, 2003 reclassification of the gray wolf from "endangered" to "threatened" in the Eastern Distinct Population Segment which encompasses North Dakota, and (5) increasing populations of the bald eagle, and the resultant increase in the potential for take of eagles.

On May 14, 2003, the U.S. Fish and Wildlife Service (Service) provided WS with a copy of "North Dakota's Federally Listed Endangered, Threatened, and Candidate Species" dated May 2003. WS has evaluated its current program activities in relation to potential impacts it may have on these species and designated critical habitat within the state.

Project Area

The analysis area being considered for this evaluation is all land within North Dakota. WS only conducts its actions at the requests of federal, state, tribal, and private land and resource management agencies; local governments; municipalities; or private citizens. All actions are taken under the authority of work agreements which specify where the WS actions will be taken, the duration of the action, and the methods utilized to resolve specific human/predator conflicts. North Dakota has a land area of 45,225,600 acres. WS interagency work agreements authorize predator damage management on about 5% of the total land area of North Dakota annually. Approximately 95% -98% of WS activities are conducted on privately owned lands each year. WS activities conducted on federal, tribal, or state lands are done so under the authority of work agreements established with the respective agencies which have management authority for those lands.

WS assists with the management of wildlife conflicts that impact livestock producers, farmers, homeowners, airports, and public land managers. WS operates a cooperatively funded program with federally allocated USDA funds supplemented by funding provided by two state agencies, the North Dakota Department of Agriculture and the North Dakota Game and Fish Department, and other sources such as producers groups, municipalities, individuals, etc. who experience wildlife damage.

In many instances, WS enables others to resolve their wildlife conflicts by providing *technical assistance* which may include sharing information or equipment. In 2002, WS conducted 1,300 personal consultations and 55 instructional sessions for 4,300 individuals. WS also distributed 3,200 informational leaflets to the public. These leaflets provided information on the resolution of specific wildlife damage conflicts. Also, 400 pieces of equipment, such as live traps and propane cannons, were loaned free of charge so that individuals could solve their specific problems. WS provided instruction on the safe, effective, and humane use of all equipment

which was loaned.

When resolving wildlife damage conflicts is beyond the means of the individual, WS conducts *direct assistance* regarding wildlife at the damage site. WS conducts its direct assistance programs through annual work plans established with the North Dakota Department of Agriculture, the North Dakota Game and Fish Department, the U.S. Forest Service and the Bureau of Land Management.

WS relies on integrated damage management (IDM) strategies when undertaking direct assistance programs. IDM encompasses the integration and application of all approved methods of prevention and management to reduce wildlife conflicts. IDM may incorporate the cultural or husbandry practices utilized by landowners, habitat modification, animal behavior management, local population reduction, or a combination of these approaches. The selection of wildlife damage management methods and their application takes into consideration the species causing the damage and the magnitude, geographic extent, duration, frequency, and likelihood of recurring damage. In addition, consideration is given to non-target species, environmental conditions and impacts, social and legal factors, and relative costs of management options. In North Dakota, WS direct assistance program focuses on managing predator (primarily coyote) impacts to livestock (40%), beaver damage management (40%), bird damage to crops (10%), urban wildlife complaints (5%), and human health and safety issues (5%).

Federal Endangered, Threatened, and Candidate Species in North Dakota

The following federally listed and candidate species occur in North Dakota, with the possible exception of the black-footed ferret:

<u>Candidate</u>	<u>Threatened</u>	<u>Endangered</u>
Dakota Skipper Butterfly	Western Prairie Fringed Orchid	Pallid Sturgeon
Black-tailed Prairie Dog	Piping Plover	Interior Least Tern
	Bald Eagle	Whooping Crane
	Gray Wolf	Black-footed Ferret

Dakota Skipper (*Hesperia docotae*): The Service listed the Dakota skipper as a candidate species on June 13, 2002. No legal requirement exists to protect candidate species; however, it is within the spirit of the Endangered Species Act to consider these species during project planning, construction, and operation. The Service works with natural resource agencies, organizations, and individuals to implement conservation actions for candidate species that may eliminate the need to list the species as threatened or endangered.

The Dakota skipper is a small butterfly with a 1-inch wing span. The upper side of the male's wing range from tawny-orange to brown. The lower surface is dusty yellow-orange. The upper side of the female's wing is darker brown, with tawny orange spots and a few white spots on the margin of the forewing; the lower side is gray-brown.

Dakota skippers are found in high quality native prairie containing a high diversity of wildflowers and grasses. Their habitat includes two prairie types: 1) low (wet) prairie dominated by bluestem grasses, wood lily, harebell, and smooth camas; and 2) upland (dry) prairie dominated by bluestem grasses, needlegrass, pale purple and upright coneflowers and blanketflowers.

Dakota skipper populations were historically recorded from southern Saskatchewan, across the Dakotas and Minnesota to Iowa and Illinois. Today the most significant remaining populations of Dakota skippers occur in western Minnesota, northeastern South Dakota, and north-central and southeastern North Dakota. In North Dakota, the current range of the Dakota skipper includes Burke, Eddy, McHenry, McKenzie, Ransom, Richland, Rolette, Sargent, Stutsman, and Wells counties. Threats to the species includes conversion of native prairie to cropland, over grazing, inappropriate fire management and herbicide use, and invasive plant species.

Pallid Sturgeon (*Scaphirhynchus albus*) The Service listed the pallid sturgeon as an endangered species on September 6, 1990. This fish has a prehistoric appearance, with five lengthwise rows of bony plates armoring its side instead of scales. Mature pallid sturgeon can weigh up to 80 pounds and reach lengths of 6 feet, whereas the closely related shovelnose sturgeon rarely exceeds 8 pounds. Pallid sturgeon are found in large rivers with high turbidity and natural flow regimes. They prefer areas with a diversity of depth and velocities including areas with braided channels, sandbars, island, sand flats, and gravel bars.

In North Dakota, pallid sturgeon were originally found throughout the Missouri and Yellowstone Rivers. Today, pallid sturgeon are scarce. Populations are restricted to the free flowing reaches of the Missouri and Yellowstone River above the headwaters of Lake Sakakawea and Garrison reach of the Missouri River, located between Garrison Dam and the headwaters of Lake Oahe.

Habitat loss and modification from the construction of dams and channelization are the principal reason for the decline of pallid sturgeon populations. Commercial fishing, environmental contaminants, and hybridization with shovelnose sturgeon may have also played a role in the decline of this species.

Whooping Crane: (*Grus americana*) The Service listed the whooping crane as an endangered species on June 2, 1970. Historically, whooping cranes nested in North Dakota. The last documented nest was discovered in McHenry County in 1915. Today, whooping cranes are sighted in North Dakota during spring and fall migration. These birds are part of the flock that migrates from Aransas National Wildlife Refuge on the Gulf Coast of Texas to their breeding grounds in Wood Buffalo National Park in the Northwest Territories. Whooping cranes have been confirmed in most counties of North Dakota, with the majority of the observations occurring in the western two-thirds of the state. The principal reasons for the decline of this species includes habitat loss and historic shooting.

Interior Least Tern (*Sterna antillarum*) The interior least tern was listed as endangered on May 28, 1985. The least tern is the smallest member of the gull family, measuring approximately 9 inches in length. Historically the least tern was found on the Atlantic, Gulf of Mexico, and

California coasts and along the Mississippi, Missouri, and Rio Grande River systems. This species was found throughout the length of the Missouri River.

In North Dakota, least terns nest on barren to sparsely vegetated sandbars and islands along the free flowing reaches of the Missouri and Yellowstone Rivers. To a lesser degree, least terns will also nest on islands and along the shoreline of Lake Oahe and Lake Sakakawea, during periods of drought when the reservoirs are drawn down.

The interior population of least terns has declined due to the loss of habitat from dam construction, reservoir operations, and channelization on major rivers throughout the Mississippi, Missouri, and Rio Grande River systems. Human disturbance at nest locations and nest predation have also been documented as factors influencing least tern populations.

Piping Plover (*Charadrius melodus*) The Service listed the piping plover as a threatened species throughout most of its range on December 11, 1985. The Great lakes population was listed as endangered. The Service designated critical habitat for piping plovers on September 11, 2002. The piping plover is a small, stocky shorebird that is distinctly pale, matching the beaches it inhabits. Prominent markings include a black band across the upper forehead and another across the upper breast.

In North Dakota, piping plovers nest along barren to sparsely vegetated islands and shorelines of the Missouri River system and saline lakes in the central and northwest portion of the state. During drought years when the water levels in Lake Sakakawea are lowered, a significant number of piping plovers nest on islands and along the shoreline of the reservoir. While piping plover nests have been documented on beaches throughout the reservoir, the majority of nests are found in McLean and Mountrail Counties. Piping plover feed on invertebrates found along the waterline of islands and beaches.

Habitat destruction and poor breeding success are the primary reasons for the decline of this species. In North Dakota, plovers using prairie alkali lakes suffer substantial losses due to avian and mammalian predation.

Black-footed Ferret (*Mustela nigripes*) The Service listed the black-footed ferret as endangered on June 2, 1970. Black-footed ferret are 20 to 24 inches in length, including a 6 inch tail, and weigh up to 2.5 pounds. They have a yellowish brown body with a distinctive black mask across the face, black feet, and a black tipped tail. Black-footed ferrets inhabit short-grass prairie, always within close proximity to prairie dog towns. Prairie dogs comprise approximately 90 percent of the diet of black-footed ferrets.

Occasional reports of black-footed ferret sighting were provided to the Service and North Dakota Game and Fish Department in the 1960's and 1970's. These reports coincided with an extensive effort by state and federal natural resource agencies to locate a population of black-footed ferrets in the wild. The last report confirmed report was a skull that was found in southern Billings County in 1980. The skull was found on a prairie dog mound. It is not known how long the skull had been at the site before it was discovered.

In 1981, a population of black-footed ferrets was discovered near Meeteetse, Wyoming. This population was subsequently captured and brought to a captive rearing facility. Since 1991, captive ferrets have been reintroduced into the wild at variety of locations that support an adequate prey base, including sites in Wyoming, Montana, South Dakota, Colorado, and Arizona. Several sites in North Dakota have been evaluated for possible black-footed ferret reintroduction. At this time, these sites do not support a sufficient acreage of black-tailed prairie dogs to support a sustainable population of ferrets.

The rapid decline of black-footed ferrets has been linked to the eradication of prairie dogs. Prairie dogs are believe to occupy 1-2 percent of their historic range in the United States. Other threats to ferrets include canine distemper, predation from golden eagles, great-horned owls, and coyotes, poisoning , and trapping.

Black-tailed Prairie Dog (*Cynomys ludovicianus*) In 1998, the Service received a petition from the National Wildlife Federation to list the black-tailed prairie dog as threatened throughout its range. After reviewing all scientific and commercial data, the Service determined that listing this species as threatened is warranted but precluded by other higher priority actions to amend the Lists of Endangered and Threatened Wildlife and Plants. With the publishing of the 12-month finding on February 2, 2000, the black-tailed prairie dog was designated as a candidate species.

Black-tailed prairie dogs are social animals that live in colonies or towns that range in size from a fraction of an acre to thousands of acres. This stout, burrowing mammal is approximately 14-17 inches in length and weighs 1-3 pounds. Historically, black-tailed prairie dog colonies were estimated to have occupied over 100 million acres of mixed-grass and short-grass prairies, extending from southern Saskatchewan and Alberta to northeastern Mexico. The range of this species included portions of eleven states in the Great Plains.

In North Dakota, black-tailed prairie dogs are estimated to have occupied as much as two million acres south and west of the Missouri River. The North Dakota Game and Fish Department recently contracted with Dr. Craig Knowles, Fauna West Wildlife Consultants, to conduct aerial and ground inventories of black-tailed prairie dogs throughout their historic range in southwestern North Dakota. The prairie dog acreage for North Dakota was estimated to be at least 20,074 acres. (Knowles 2003)

Prairie dog populations have declined for a variety of reasons including cropland conversion, urbanization, extensive poisoning campaigns, and sylvatic plague. Sylvatic plague affects approximately 66 percent of the species' range. To date, sylvatic plague has not been documented in North Dakota colonies.

Bald Eagle (*Haliaeetus leucocephalus*) The bald eagle was originally listed as endangered on February 14, 1978 and downlisted to threatened in 1995. The Service is currently in the process of gathering information to evaluate whether removing the bald eagle from the threatened and endangered species list is warranted.

Bald eagles prefer forested habitats near bodies of water. The majority of nest sites are located within one-half mile of water. Nests are typically located high in the canopy of large trees and are frequently used year after year.

Bald eagles are believed to have historically nested in all of the lower 48 states, with an estimated breeding population of 50,000 nesting pairs in pre-colonial times. Due to human activities, including the use of pesticides (especially DDT), habitat loss, shooting, and electrocution, the population of bald eagles in the lower 48 states dropped to 400 breeding pairs in the early 1960s. Bald eagle populations have significantly expanded since the Environmental Protection Agency banned the use of DDT in 1972. By 1998, the breeding population of bald eagles in the lower 48 states had reached 5,700 pairs.

In North Dakota, the number of nesting bald eagles has followed the national trend. In 1988, the active first bald eagle since 1975 was documented along the Garrison reach of the Missouri River. The Service conducted an aerial survey of the Missouri River from the headwaters of Lake Oahe to Garrison Dam in 1997. Eight active bald eagle nests were documented. During the past three years bald eagle nests have also been report near Devils Lake, along the Red River, and in the southeastern portion of the state.

Gray Wolf (*Canus lupus*): The Service listed the gray wolf as endangered in the lower 48 states, except Minnesota, on March 9, 1978. In April of 2003, the gray wolf was downlisted to threatened for the Eastern Distinct Population Segment, which includes North Dakota. Gray wolves can range in color from black to white, although gray is the most common color. Mature wolves generally weigh 70-115 pounds. Wolf populations were extirpated from much of their historic range in the lower 48 states as a result of shooting, poisoning, and trapping. Since the gray wolf was listed as endangered, populations have expanded throughout much of its range due to the legal protection afforded by the Endangered Species Act and conservation practices.

In North Dakota, dispersing wolves from Minnesota and Manitoba are occasionally reported. Most of the documented wolf sightings in the state are two year old males. During the past two years, four wolves have been killed in North Dakota, including one that was taken with an M-44 set by WS.

Proposed Action

WS proposed action is to continue to utilize a variety of authorized damage abatement methods to mitigate predator damage to livestock (cattle, sheep, horses, poultry, and livestock feed), wildlife, personal property, to protect human health and safety, and to minimize disease transmission from wildlife to humans and livestock. Livestock are an important component of local economies in North Dakota, accounting for 17% of the total cash receipts for all agricultural products statewide (NDASS 2002). During FY02, WS documented a total of \$133,000 in livestock (calves, adult sheep, lambs) losses to predators. WS actions were taken in response to those losses and also to prevent additional incidents of predation on livestock. During FY02, WS estimates it prevented \$1.9 million in livestock losses as a result of its predator damage management program.

Since the 1996 consultation, the North Dakota WS program has also conducted predator damage management for the protection of waterfowl, interior least terns, and piping plovers. WS also responds to requests for assistance with predator impacts to property, such as raccoon and skunks denning in or beneath buildings; badgers digging in pastures, lawns, and cemeteries; and raccoons and skunks foraging on livestock feed. WS actions also help reduce the threat of disease transmission from wildlife to humans and domestic animals.

WS utilizes a variety of methods for resolving human/predator conflicts. These methods include frightening devices such as propane cannons, sirens, and strobe lights (0.2%), gas cartridges for fumigating coyote and fox dens (0.3%), cage traps (0.5%), shooting (2%), body-gripping traps (3%), foothold traps (11%), neck snares (21%), the M-44 device (27%), and aerial hunting (35%). All methods are used in accordance with WS policy and all applicable federal and state laws and regulations. A further description of these methods is provided in Appendix A. No WS activities result in habitat modification other than driving on established roads, trails, and in pastures and occasional small, shallow excavations to bury foothold traps.

Anticipated Effects to Listed Species

The only potential for effects to listed species would be associated with accidental injury or death of a listed species during WS efforts to mitigate predation to livestock, and/or wildlife; damage to property, or threats to human health. Annually, WS responds to requests for assistance with conflicts caused by badger, coyote, mink, raccoon, red fox, and striped skunk.

Dakota Skipper Butterfly: WS predator damage management activities have no direct interaction with the Dakota skipper butterfly. Therefore, WS concludes that its actions will have no effect to populations of the Dakota skipper butterfly.

Western Prairie Fringed Orchid: The western prairie fringed orchid has limited distribution in North Dakota, with known locations limited to sites near and within the Sheyenne National Grasslands in Ransom and Richland counties. WS activities are extremely limited within the known habitats of the western prairie fringed orchid, with only two predator damage management projects conducted in the last three years on the Sheyenne National Grasslands. WS will coordinate with the Service to obtain orchid locations prior to conducting predator damage management activities in Ransom and Richland Counties. Locations supporting orchid populations will be avoided during WS field operations. Therefore, WS concludes that its actions will have no effect to populations of the western prairie fringed orchid.

Pallid Sturgeon: WS activities are confined to terrestrial habitats; therefore predator damage abatement methods utilized by WS will have no effect to the pallid sturgeon.

Whooping Crane: There are no known incidents of predator damage abatement techniques adversely effecting whooping crane populations. Therefore, WS concludes that its actions will have no effect to the whooping crane.

Interior Least Tern: Coyote predation on interior least terns has been identified as a contributor to adult mortality (U.S. Fish and Wildlife Service 1990:34). WS predator damage management activities in the vicinity of breeding colonies will result in a beneficial effect on interior least tern populations. Therefore, WS concludes that its actions may affect, but are not likely to adversely affect the interior least tern.

Piping Plover: On September 11, 2002, the U.S. Fish and Wildlife Service (Service) designated critical habitat for the piping plover. WS' predator damage management activities do not modify habitat, other than driving through pastures and occasional small, shallow excavations to bury foothold traps. Therefore, WS concludes that its actions are not likely to adversely modify designated critical habitat for piping plovers.

Mammalian predators, including coyote, raccoon, red fox, and striped skunk have been implicated in the predation of piping plover eggs and chicks (Smith et al. 1993, Larson et al. 2002). WS predator damage management activities in the vicinity of piping plover breeding colonies are expected to reduce mortality. WS concludes that its predator damage management actions may affect, but are not likely to adversely affect the piping plovers.

Black-footed Ferret: WS has conducted select population reductions of coyotes and badgers in Wyoming, Montana, and South Dakota to reduce predation on black-footed ferrets. WS predator damage abatement programs in North Dakota may affect, but are not likely to adversely affect the black-footed ferret. If black-footed ferrets are sighted during work activities, WS personnel will cease all predator control activities within two miles of the site and notify the Service within 48 hours to determine the appropriate course of action.

Black-tailed Prairie Dog: The North Dakota WS program does not conduct direct assistance for landowners who have damage conflicts caused by black-tailed prairie dogs. WS does provide technical assistance (assessments of extent of damage, suggestions on damage abatement methods, and, when appropriate, training on proper use of rodenticides registered for control of prairie dogs) to landowners. In 2002, WS completed 19 technical assistance projects which included 10 instructional sessions.

WS predator damage activities management (particularly on badger, fox, and coyote) in the vicinity of black-tailed prairie dog colonies will reduce predator-induced mortality. Therefore, WS concludes its actions may affect, but are not likely to adversely affect black-tailed prairie dogs.

Bald Eagle: Most control methods used by WS pose no threat of injury or death to bald eagles. Frightening devices are only used in the immediate area where predation has occurred. Shooting and aerial hunting require positive animal identification prior to the take of the target animal. Cage traps and body gripping traps are used to capture small and medium sized predators (mink, raccoon, and striped skunk) and the size and placement of these traps prevent the capture of eagles. Gas cartridges are a general use pesticide registered by the Environmental Protection Agency (EPA) as a fumigant for the dens of coyote, red fox, and striped skunk. Positive identification of the animal using dens prevents impacts to non-target animals. All of the above

mentioned control methods are used in a specific manner, specific situations, and specific locations which prevent the accidental take of bald eagles. Therefore, WS concludes that the use of these control methods will have no effect to bald eagles.

WS policy requires that foothold traps and neck snares be used in a manner which minimizes the capture of non-target animals. Foothold traps and neck snares are not set within 30 feet of an exposed animal carcass. Foothold traps are also equipped with tension devices which prevent or minimize the capture of non-target species. Climatic conditions in North Dakota restrict the use of foothold traps during months when the ground is not frozen, typically April to early November. Therefore, foothold traps are not utilized during the peak wintering concentrations of bald eagles. WS will not set foothold traps or neck snares within 1 mile of known active bald eagle nests. WS will continue to abide by agency policies and state laws and regulations which govern the use of foothold traps and neck snares. Bald eagles have not been captured in foothold traps or snares set by North Dakota WS personnel. However, even when complying with the above mentioned measures, WS concludes that the use of foothold traps and neck snares may affect, but are not likely to adversely affect bald eagles.

The M-44 device is a restricted use pesticide registered by the EPA for the control of coyotes, red fox, and feral dogs. Until the February 26, 2003 incident in North Dakota, no bald eagle had been taken by an M-44 device during the 35 years that this control method has been used in the United States to deter coyote predation.

The EPA restricts the placement of M-44s to 30 feet or more from animal carcasses used as "draw stations." The M-44 device which killed the bald eagle was placed 69 feet from a draw station, more than twice the minimal distance required by the EPA. The EPA also limits the placement of no more than 10 M-44 devices in any 100 acre pasture. At the time of the February 26, 2003 incident, WS had placed just 2 M-44 devices on the private property where management of coyote predation was ongoing.

The North Dakota WS program has developed additional restrictions on the use of M-44, beyond those established by the EPA: (1) WS does not use M-44s during the upland bird hunting season (which typically runs from mid-September through the first week of January) except in response to active coyote predation on livestock. This limited use of M-44s helps reduce potential encounters with bald eagles; (2) M-44s are not placed within wooded riparian corridors along free flowing streams or rivers; and (3) M-44s are not set within 1 mile of known active bald eagle nests.

WS uses M-44s primarily during winter months (January through April) when climatic conditions preclude the use of many other damage abatement methods. These months coincide with high wintering populations of bald eagles; however, WS takes additional precautions (beyond EPA requirements) when using M-44s to minimize impacts to bald eagles: (1) M-44s are not baited with attractants that contain hair or wool; (2) M-44s are placed in wind-swept areas (free of snow) away from shelterbelts which may be used as perch/hunting sites by bald eagles; (3) M-44s are not placed within the immediate vicinity of power line transmission towers where bald eagles may perch/hunt; and (4) target species (coyote and/or red fox) killed by M-44s

are moved well beyond the required 30 foot minimum distance between active M-44s and animal carcasses. These carcasses are often fed upon by bald eagles so in addition to providing a supplemental winter food source, the carcasses actually help “lure” bald eagles away from active M-44s.

WS concludes that M-44s may affect, likely to adversely affect bald eagles. WS will continue its measures to prevent the accidental take of bald eagles by M-44s and all other predator damage abatement methods. However, bald eagle populations are increasing in North Dakota and nationwide. Therefore, WS anticipates that up to 2 bald eagles could be accidentally killed each year.

Gray Wolf: Most control methods used by WS pose little or no threat of injury or death to gray wolves. Frightening devices are only used in the immediate area where predation has occurred. Shooting and aerial hunting require positive animal identification prior to the take of the target animal. In 1990, a gray wolf was mistakenly killed during a WS aerial hunting operation which had been undertaken to resolve coyote depredations. However, no non-target animals have been taken through aerial hunting in subsequent years. WS concludes that shooting and aerial hunting may affect, likely to adversely affect gray wolves.

Cage traps and body gripping traps are used to capture small and medium sized predators (mink, raccoon, and striped skunk) and the size and placement of these traps prevent the capture of gray wolves. Gas cartridges are a general use pesticide registered by the Environmental Protection Agency (EPA) as a fumigant for the dens of coyote, red fox, and striped skunk. Gas cartridges will not be used at gray wolf den sites. All of the above mentioned control methods are used in a specific manner, specific situations, and specific locations which prevent the accidental take of gray wolves. Therefore, WS concludes that the use of these control methods will have no effect to gray wolves.

WS policy requires that neck snares be used in a manner which minimizes the capture of non-target animals (Appendix A). However, despite these efforts, the accidental capture of gray wolves in neck snares may occur. Therefore, WS concludes that neck snares may affect, likely to adversely affect gray wolves.

WS will abide by agency policies and state laws and regulations which govern the use of foothold traps. WS policy requires that foothold traps be used in a manner which minimizes the capture of non-target animals. Foothold traps are equipped with tension devices which prevent or minimize the capture of non-target species. Smaller sized foothold traps used to capture mink, badger, raccoon, red fox, and striped skunk are incapable of restraining gray wolves. Climatic conditions in North Dakota restrict the use of foothold traps during months when the ground is not frozen, typically April to early November. Limiting the use of foothold traps helps to minimize potential capture of gray wolves.

If gray wolf activity is detected in the vicinity of areas where coyote predation has occurred, WS will rely on shooting or aerial hunting to remove the coyotes. In these same situations, WS may utilize specific types of foothold traps (capable of restraining coyotes but not gray wolves) to

capture the coyotes. Gray wolves accidentally captured in foothold traps set for coyotes will be released. Even by abiding by with these measures, WS concludes that the use of foothold traps may affect, likely to adversely affect gray wolves.

The M-44 device is a restricted use pesticide registered by the EPA for the control of coyotes, red fox, and feral dogs. Until the March 24, 2003 incident, no gray wolf had been taken by an M-44 device in North Dakota. The M-44 that killed the gray wolf had been set to mitigate coyote predation. Gray wolves were not known to be in the area where the M-44 had been set, the landowner had not seen gray wolves on his property, and the WS field specialist who conducted the damage assessment did not find any evidence of gray wolf presence.

To minimize the effects M-44s on the gray wolf WS will: (1) not set M-44's to mitigate coyote depredation on properties where gray wolf sign has been detected; (2) remove M-44s from properties if gray wolf presence has been detected after M-44s have been placed; and (3) discuss alternative damage abatement options with the Service. Even with these measures, WS concludes the use of M-44 devices may affect, likely to adversely affected gray wolves. However, there may also be increased incidents such as that which occurred on March 24, 2003. Even with the above mentioned measures, WS anticipates that as many as 4 gray wolves may still be accidentally taken annually (by either shooting, aerial hunting, neck snares, foothold traps, and/or M-44s) during routine coyote damage management programs.

On April 1, 2003 the Service published their final rule for the reclassification of the gray wolf in the conterminous U.S. The gray wolf is now classified as "threatened" in two distinct population segments (DPS); the Western DPS and the Eastern DPS, with North Dakota included in the Eastern DPS. The reclassification allows for the implementation of Section 4(d) of the Endangered Species Act which provides for greater management flexibility for addressing confirmed gray wolf predation on livestock. The rule recognizes the expanding gray wolf population in Minnesota will probably lead to increased incidents of wolf predation on livestock in North Dakota. WS, the Service, and North Dakota Game and Fish Department have jointly established procedures in accordance with the 4(d) rule to address verified wolf depredation incidents. Responses to confirmed gray wolf/livestock depredation will be addressed as damage abatement measures and not as "incidental take."

Appendix A

Description of Control Methods Utilized for Predator Damage

Management by the North Dakota Wildlife Services Program

Frightening Devices: A variety of devices (propane cannons, sirens, strobe lights) can be used to frighten predators away from livestock. These devices are generally used after livestock have been confined to small pastures, corrals, or barns during the calving or lambing season. The effectiveness of frightening devices often demises over time as predators habituate to the audio or visual stimulus.

Gas Cartridge: Gas cartridges are a general use pesticide registered by the Environmental Protection Agency (EPA) as a fumigant for the dens of coyote, red fox, and striped skunk. Gas cartridges are ignited and then placed in the den. The burning cartridge depletes oxygen and creates carbon monoxide gas which leads to the death of the animals within the den. Positive identification of the animals using dens prevents impacts to non-target animals.

Cage Traps: Cage traps are typically constructed of wire or heavy plastic and are designed as a live capture device. WS uses cage traps to capture raccoons and skunks which consume livestock feed or pose a threat of disease transmission to livestock. Bait is used to lure the animals into the trap and target animal are euthanized and non-target animal are released. Therefore, cage traps eliminate impacts to non-target animals (Table 1).

Shooting: Shooting is a selective method for removing predators responsible for livestock depredation, possible disease transmission to livestock, or the consumption of livestock feed. Shooting may be employed opportunistically, i.e. removal of target animals near sites where a particular conflict with livestock has occurred. WS utilizes shooting for the removal of skunks in pastures or near buildings and food storage areas (Table 1).

Shooting, in concert with “calling” is a more typical application of this method. Luring predators within shooting range via calling (mimicking the sound of a specific predator or its prey) is a highly selective method for removing target animals from areas in close proximity to depredation sites. Calling/shooting is used primarily for managing coyote depredations (Table 1).

Body-gripping Traps: Body-gripping traps (typically referred to as Conibear traps) are a rotating, square-jawed trap which clamp around the body of the animal that triggered the trap. WS utilizes these traps to capture raccoons and skunks which consume livestock feed or pose a threat of disease transmission to livestock. These traps are also used to capture mink which have preyed on poultry. Body-gripping traps are set in the travel paths of target animals or bait is used to lure the animal into the trap. Placement of the traps, the type of bait which is used, and the

size of the traps (4.5" x 4.5" for mink and 7" x 7" for skunk and raccoon) help prevent the capture of larger, non-target animals (Table 1).

Foothold Traps: Foothold traps are primarily used to capture coyotes, and to a lesser extent, badger, red fox, raccoon, and striped skunk. Foothold traps are set in areas where target predators are known to be traveling or in areas where they feed or den. Foothold traps are set with the intent of capturing target animals while minimizing the likelihood of capturing non-target species (Table 1). WS utilizes several methods for minimizing non-target catch. These include using lures or baits which are more attractive to select predators; complying with WS policy which limits trap placement to 30 or more feet from an animal carcass; and adjusting the tension of the trap pan (the trap's "trigger" mechanism) so that only larger weight animals like coyotes can cause the trap to close (Phillips and Gruver, 1996, Turkowski et al. 1984).

Neck Snares: Neck snares are constructed of 5/64 inch aluminum cable and fashioned into a loop that is held in place by a "snare lock" that allows the loop to close but not open readily. When an animal passes through the snare, the lock allows the snare to close around the animal. Neck snares are usually set beneath fences where target animals (coyotes, red fox, raccoon, and striped skunk) have dug to enter pastures. Snares may also be set in trails where target animals travel.

WS complies with North Dakota Game and Fish Department regulations which govern the use of neck snares. These regulations require the use of "break-away" snare locks that disassemble or break at an average pull weight of 350 pounds or less. These locks allow larger, stronger animals, such as deer or livestock, to avoid capture by breaking the snare's lock mechanism (Phillips 1996). Recent studies have also shown that gray wolves are capable of escaping unharmed from break-away snares that have been set to capture coyotes (Presentation by John Hart, USDA/Wildlife Services, at 2003 Midwest Furbearer Symposium).

Other state regulations governing the use of snares help to minimize the capture of non-target animals. These include the use of a "stop" which prevents the snare loop from opening to a diameter of greater than 12 inches, and a requirement that the bottom of the snare loop rest no higher than 12 inches off of the ground. WS policy also helps reduce non-target capture by limiting the setting of snares to no closer than 30 feet of an exposed animal carcass. Uses of neck snares by WS personnel in North Dakota have been selective in their capture of target animals (Table 1).

M-44 Device: The M-44 device is a restricted use pesticide registered by the EPA for the control of coyotes, red fox, and feral dogs. The M-44 has four components; a 5-7 inch hollow tube which is driven into the ground, a spring-activated ejector which sits within the tube, a capsule holder which screws onto the top of the ejector, and a plastic capsule which sits within the holder. The plastic capsule holds 0.9 grams of active ingredient, sodium cyanide, plus inert ingredients. The capsule holder is wrapped with cloth or similar material that holds scented bait which attracts target animals. The M-44 is activated by an animal pulling on the capsule holder

which releases a spring within the ejector. The sodium cyanide is released into the mouth of the animal when the ejector spring releases. Sodium cyanide is a fast-acting toxicant which upon contact with moisture hydrolyzes into hydrocyanic gas and sodium hydroxide. Sodium cyanide poses no secondary toxicity risks to animals which feed on the carcasses of animals killed by the device (USDA 1997).

The M-44 is highly selective for target animals because of the use of fetid baits which are attractive to canids. Also, WS personnel place the M-44 in areas frequented by target animals which minimizes impacts to non-target animals. An evaluation of M-44 use by WS personnel during FY02 provides insight into the selectivity of this tool (Table 1).

Aerial Hunting: Shooting from a fixed-winged aircraft is used by WS solely for managing coyote depredations. Aerial hunting is typically employed within a 2 mile radius of ranches where coyote predation, or a history of predation, has occurred. WS complies with federal and state regulations, plus agency policies when aerial hunting.

Aerial hunting is very selective for the removal of target animals (Table 1). In 1990, a gray wolf was mistakenly killed during a WS aerial hunting operation which had been undertaken to resolve coyote depredations. However, no non-target animals have been taken through aerial hunting in subsequent years.

Table 1. Selectivity of foot-hold traps, neck snares, and M-44 used by the North Dakota WS program in FY02.

Target Animals	Foot-hold Traps	Neck Snares	M-44	Aerial Hunting	Gas Cartridge	Body-Gripping Trap	Calling / Shooting	Cage Trap
Badger	20	0	n/a ¹	0	0	0	0	0
Coyote	198	405	640	869	3	0	211	0
Mink	0	0	n/a ¹	0	0	3	0	0
Raccoon	44	67	n/a ¹	0	0	63		14
Red Fox	7	27	36	0	3	0	1	0
Striped Skunk	12	17	n/a ¹	0	0	9	15	23
Subtotal	281	516	676	869	6	75	227	37
Non-Target Animals								
Badger	2	0	0	0	0	0	0	0
Jackrabbit	0	4	0	0	0	0	0	0
Raccoon	0	5	1	0	0	0	0	0
Red Fox	1	3	3	0	0	0	0	0
Striped Skunk	1	0	2	0	0	0	0	0
White-tailed Deer	0	2	0	0	0	0	0	0
Wild Turkey	0	1	0	0	0	0	0	0
Subtotal	4	15	6	0	0	0	0	0
Total	285	531	682	869	6	75	227	37
Selectivity²	98.6%	97.2%	99.1%	100%	100%	100%	100%	100%

¹ Badger, mink, raccoon, and striped skunk are not target species for the M-44 device

² Selectivity (%) is the sum of the total of target animals taken by particular control methods divided by the total of target and non-target animals taken by those methods

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