

**U.S. FISH AND WILDLIFE SERVICE
SPOTLIGHT SPECIES ACTION PLAN**

Common Name: Black-footed Ferret
Scientific Name: *Mustela nigripes*
Lead Region: Mountain-Prairie Region (Region 6), Denver, Colorado
Lead Field Office: South Dakota Ecological Services Field Office
420 S. Garfield Avenue, Suite 400
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Species Information:

Status: Endangered throughout the range except at specific reintroduction locations in Arizona, Colorado, Montana, South Dakota, Utah and Wyoming where ferrets are designated as nonessential experimental populations under section 10(j) of the Endangered Species Act.

Recovery Priority Number: 2C

Recovery Plan: Black-footed Ferret Recovery Plan approved 1988.
Recovery plan is currently being revised.

5-year Review: Completed December 1, 2008

Other: Black-footed Ferret Species Survival Plan March 19, 2009

Threats: Prairie dogs are the primary prey of and provide the habitat for the black-footed ferret (ferret). The primary threat to ferret has been loss of prairie dog colonies and complexes due to grassland conversion and rodenticide use, diseases, and lack of active management.

Approximately one-third of the ferret's historical range has been converted to land uses that no longer support prairie dogs, e.g. cropland. However, extensive grasslands and rangelands to support ferret recovery goals remain and we do not consider the present or future loss of habitat from cropland conversion to be a threat.

Rodenticide use has been responsible for extensive reduction of prairie dog habitat and was the most important factor in the initial large-scale population reductions of the ferret. Furthermore, throughout much of the twentieth century, rodenticides used to kill prairie dogs also secondarily poisoned ferrets if they consumed poisoned prairie dogs. Certain rodenticides (chlorophacinone and diphacinone) that can cause secondary poisoning to non-target animals including ferrets are still used. However, alternatives such as zinc phosphide have minimal secondary toxicity issues. Widespread use of rodenticides continues, but the large-scale government sponsored eradication programs of the twentieth century appear to have ceased. Most ferret reintroduction sites are able to balance rodenticide use and prairie dog/ferret conservation; the greater challenge is ensuring rodenticide use does not preclude or delay opportunities at certain locations before ferrets are reintroduced. Overall, we consider the threat from prairie dog poisoning to be a medium magnitude, imminent threat.

Canine distemper and sylvatic plague are two diseases that have severely impacted wild and captive-reared populations of ferrets and compromised numerous reintroduction efforts. Plague is an exotic disease foreign to the evolutionary history of North America that was inadvertently introduced into the U.S. in 1900. The disease has spread into all 12 western States within the ferrets' historical range. While plague is still a considerable impediment to ferret recovery, available and emerging management tools such as insecticide applications and vaccines are providing additional management options. Accordingly, with aggressive proactive management, the threat of plague has been reduced from a high to a medium magnitude imminent threat.

Prairie dog shooting and predation impact the species only on a local scale. We do not consider genetic fitness and climate change a threat.

Finally, it is important to note that even with grassland conversion, rodenticide use, and disease, there is sufficient prairie dog acreage remaining to meet recovery goals for the ferret. A reasonable estimate of occupied habitat for the three prairie dog species that comprise the ferrets' range is 5.8 million acres. It is estimated that 500,000 acres or about 8 percent of existing prairie dog acreage proactively managed would accommodate ferret recovery goals. If a commitment to manage a fraction of the remaining prairie dog acreage for ferret recovery was made, threats to the ferret could be ameliorated. We consider the inadequacy of existing regulatory mechanisms and the lack of proactive management a high magnitude, imminent threat.

Target: The 5-year goal for ferret recovery is continued improvement in the species' status and an increase in the number of ferret reintroduction sites.

Measure: The Ferret Recovery Program in the next 5-year period will:

- Continue implementation of the Species Survival Plan to ensure survival and genetic fitness of the species within the confines of the captive breeding program.
- Continue the captive breeding program to produce 200 or more ferrets annually for reintroduction into the wild.
- Continue translocation of wild born ferrets from existing reintroduction sites to sites that need augmentation.
- Expand research in development of management tools to offset effects of plague.
- Increase the number of reintroduction sites and the geographic distribution to include all three countries within the species' range.
- Increase the wild ferret population to more than 500 individuals.

Actions:

Action 1. Maintain a captive ferret population of optimal size and structure to support genetic management and reintroduction efforts. This includes all aspects of the ferret captive breeding program including a secure captive population, genetic maintenance, and production of ferrets for reintroductions. This involves 41 specific tasks from the Ferret Recovery Plan.

Responsible Party: FWS and cooperating captive breeding facilities (zoos)
Years: 2010-2014

Estimated Cost: FWS - \$750,000 per year, Five cooperating zoos at \$200,000 per zoo = \$1,000,000 per year for partners.

Action 2. Reduce disease related threats in wild populations of ferrets and associated species. Continue and expand research in plague vaccine and methods to reduce flea populations, which are a key vector in plague outbreaks. Primary partners include the Department of Army and the U.S. Geological Survey in the development of plague vaccines for ferrets and prairie dogs. The State of Utah and University of Missouri are primary partners in researching new tools to reduce flea populations through a systemic flea control product. These activities involve 9 specific tasks from the approved Ferret Recovery Plan.

Responsible Party: FWS and partners
Years: 2010-2014
Estimated Cost: Plague Research Total for 2009-2011:

FWS	\$ 45,000
WAFWA	\$270,000
USGS	\$200,000
DOD	\$ 20,000

Systemic Flea Control Total for 2009-2011:

FWS	\$70,000
Utah Funds	\$60,000
Univ. of MO	\$20,000

Action 3. Ensure sufficient habitat to support a wide distribution of self-sustaining ferret populations. Increase the number of ferret reintroduction sites in states and countries within the species' former range. FWS allocates captive and wild-born ferrets for release to appropriate reintroduction sites. Reintroduced ferret populations should be distributed throughout their range to reduce risks of catastrophic losses from plague or other threats and spread reintroduction costs among many federal, state, tribal and private partners. FWS estimates it invests \$150,000 in staff time for each new reintroduction site, with much of this expenditure one or more years before ferrets are ever reintroduced. FWS has considerably lower reintroduction costs if it is not the managing entity. FWS is the managing entity at two of 18 reintroduction sites. Individual sites vary considerably in monitoring and management expenditures. Expenses may average \$50,000 per year, but costs can be reduced a few years after reintroduction efforts begin. The goal is to start several new reintroduction sites over the next five years. This involves 81 specific tasks from the Ferret Recovery Plan.

Responsible Party: FWS and reintroduction partners
Years: 2010-2014
Estimated Cost: FWS - \$150,000 per site X 2 sites per year = \$300,000.
Partner cost - \$150,000 per site per year.

Action 4. Complete administrative tasks. A revised Black-footed Ferret Recovery Plan will be finalized during this five year period. Survey guidelines were developed in the late in 1980's to assist with ESA section 7 requirements and resulted in many ferret surveys. FWS began block

clearing areas where there was little chance of finding extant wild ferrets. FWS continues to evaluate areas to block clear on a case-by-case basis. In order to alleviate this task, FWS will evaluate block clearing the entire range of the species. This involves 11 specific tasks from the Ferret Recovery Plan.

Responsible Party:	FWS and reintroduction partners
Years:	2010-2014
Estimated Cost:	FWS – \$50,000

Role of other agencies: Reintroduction of ferrets into the wild requires extensive interactions with State Game and Fish Departments, Tribal Councils, and other interested parties to develop partnerships, reintroduction sites, and management responsibilities. One of 18 existing ferret reintroduction sites has occurred on FWS lands. Ferret recovery is highly dependent on partnerships on non-FWS lands and related personnel. To date, partners have included federal, state, tribal, foreign governments, universities, and landowners. Increased partner participation is critical to reestablishing ferret populations in the wild. Funding varies, but non-game funding through federal grants such as section 6 funding and tribal grants and incentives has been very important in gaining partner participation. Federal grants and other funding from federal agencies will continue to be important for partner participation in ferret recovery.

Role of other ESA programs: Administrative tools to accommodate ferret reintroduction have involved section 10(j) of ESA and section 10(a)(1)(A) recovery permits. These tools have provided the flexibility to undertake reintroductions without some of the encumbrances normally associated with ESA. Use of Safe Harbors Agreements may also prove valuable for private landowners. Section 6 funding is important to some partners and specific funding for listed species on tribal lands would be beneficial. Section 7 consultation is undertaken at ferret reintroduction sites when an action with a federal nexus may impact a listed species, although procedures vary based on regulatory mechanisms in place and land ownership.

Role of other FWS Programs:

Refuges Division: There are opportunities on National Wildlife Refuge (NWR) lands to further ferret recovery either through ferret reintroduction or participation in plague research. The controlled setting of a NWR with prairie dog populations can provide important field research sites for plague and other research. One ferret reintroduction has occurred at UL Bend/Charles M. Russell NWR in Montana. This ferret reintroduction site was initiated in 1994. This site has been unable to establish a wild population due to disease limitations. However, research has expanded understanding of plague impacts, appropriate management techniques, and ferret demographics. Rocky Mountain Arsenal NWR is the best current opportunity for reintroduction on NWR lands with approximately 3,000 acres of high density, closely spaced black-tailed prairie dog colonies. It represents a reintroduction opportunity in Colorado, which has the most black-tailed prairie dogs of any state within the species' range, yet no ferret recovery efforts within black-tailed prairie dog habitat.

Ecological Services Division: Four states within the range of the ferret do not have a reintroduction site. Ecological Services Offices in those states can play key roles in identification of possible reintroduction sites and provide assistance with completion of rules and regulations prior to a reintroduction.

Federal Aid Division: Federal Aid facilitates FWS funding provided to reintroduction sites through section 6 funds and tribal grants. This is an important role that could expand if funding for T&E programs increases.

Law Enforcement Division has investigated illegal toxicant use at some ferret reintroduction sites and will continue to provide a presence if issues arise.

Additional funding analysis: Additional funding could be directed towards new site development, increasing captive ferret production, plague research, plague management, ferret translocations, or site management and monitoring.

Site development typically involves 2-3 years of preparation. This involves development of partnerships to initiate reintroduction actions and complete regulatory documentation. Regulatory requirements can be expedited, but it is still normal for a site to be in planning and preparation stages for a year or more. Costs vary, but FWS expenditure of \$150,000 in personnel and travel costs per site is a reasonable estimate. Most of those expenses occur during development of the partnerships.

Captive ferret production involves breeding, raising, and preconditioning ferrets in captivity. Captive ferrets make up 80–90 percent of ferrets available for reintroductions. Currently, the captive breeding program produces 150-250 ferrets for reintroduction annually, while requests from partners are in the 300-400 range. Expansion of the current captive breeding facility operated by FWS could increase ferret production and thereby fulfill more annual requests. Doubling the number of outdoor pens and associated structures at the main captive breeding center could double the number of ferrets available for reintroduction. This would cost approximately \$1 million and increase the number of personnel needed to operate the facility. An additional \$100,000 would improve space limitations at the facility and could increase captive ferret survival without the need for more personnel.

Plague research has provided management options for ferret reintroductions in plague-prone areas. To date, research has led to development of a vaccine for ferrets and of techniques for Deltamethrine applications (dusting) to reduce flea populations. Ongoing research is also addressing development of an oral vaccine for prairie dogs and methods to facilitate oral uptake. An oral prairie dog vaccine is likely to involve a protracted regulatory hurdle once methods for delivery of the vaccine are finalized. FWS has committed \$30,000 towards this endeavor and partners have contributed another \$300,000. We anticipate the need for an additional \$100,000 in 2011 or 2012. FWS is also funding a systemic flea control study that is evaluating the effectiveness of an oral insecticide for prairie dogs. FWS has provided \$30,000 for this research and anticipates a need for \$20,000 in 2010 to complete the research.

Specific *plague management* is needed at many of the reintroduction sites. The insecticide Deltamethrine is used to dust prairie dog burrows and reduce flea populations. Specific needs include an insecticide applicator (Techniduster ~\$2,300 per machine), insecticide (\$9.00 per pound – covers 2-3 acres), labor (\$15/hour, 2-3 acres/hour), ATV's, trucks, trailers, and fuel for the dusting crew. Dusting 2,000 acres costs approximately \$50,000. In 2009, Deltamethrine cost approximately \$17,000 per ton, which is enough to dust approximately 4,000 acres of high

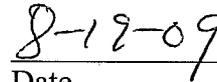
density prairie dog colonies. A \$70,000 purchase of Deltamethrine would likely provide enough insecticide for all sites that might be dusted in a given year.

Translocation of wildborn ferrets to new sites is a proven technique that eliminates the expense associated with releasing captive-reared animals. Expenses are still incurred for capturing and quarantining specific animals to be moved, but are much less than for captive breeding. Currently, there are only a few reintroduction sites with excess ferrets available for translocation. Costs to move 30 animals in past years have been approximately \$10,000.

Site management and monitoring varies greatly between sites and depends upon management (dusting, prairie dog control, monitoring effort) at the site. Some sites have shifted towards a reduced level of monitoring and have decreased costs to \$50,000 or less. Larger sites may spend more for monitoring, but basic equipment such as spotlights, traps, transponder readers/chips, and vehicles is needed at all sites. Some items could be purchased for the ferret recovery program in discreet amounts per year. For example, a \$7,000 supplement would allow purchase of enough transponder chips to mark all ferrets produced in a year in the wild and in the captive breeding program. Vaccine doses for distemper and other diseases may run \$15,000 per year for all reintroduction sites and the captive breeding program.



Project Leader



Date