COLORADO PARKS & WILDLIFE

BLACK-FOOTED FERRET REINTRODUCTION SUMMARY
FOR COLORADO LEGISLATORS AS PER HB00-1314
PREPARED BY THE COLORADO PARKS AND WILDLIFE; 12/9/2011

Background

The black-footed ferret (ferret) is considered the rarest mammal in North America and one of the rarest in the world. It was thought to be extinct in the late 1970's and early 80's making it the first species to be listed as endangered under the Endangered Species Act (ESA) of 1973. In 1985, a remnant population of ferrets was discovered near Meeteetse, Wyoming. This population was barely holding on due to infection by canine distemper and sylvatic plague. In 1986 and 1987, the U.S. Fish and Wildlife Service (USFWS) captured the remaining 18 wild individuals for a captive breeding and species preservation program. These ferrets became the seed population for all subsequent captive breeding and recovery efforts.

The Colorado State Legislature approved the reintroduction of ferrets into northwest Colorado on 18 April 2000 (HB1314). Colorado is one of eight states involved with the recovery of the species through reintroduction. The reintroduction of ferrets into its former range in northwest Colorado and eastern Utah has been a cooperative effort between the Bureau of Land Management (BLM), the Colorado Parks and Wildlife (CPW), USFWS, and Utah Division of Wildlife Resources (UDWR). Annual fall releases of ferrets into the Wolf Creek Management Areas (WCMA; north of Rangely) began in 2001. Two hundred and fifty-two animals have since been released into the WCMA. An additional eight ferrets were released in 2001 on the Colorado side of Utah's Coyote Basin Management Area (CBMA). Since the majority of this management area is located within Utah, ferrets in that area have been monitored and managed by UDWR.

The ferret reintroduction has not affected beneficial use of water or the impairment of private land uses (see HB1314). The majority of the WCMA and CBMA is on public lands. Efforts such as monitoring and reintroductions on private lands within WCMA have had the support and permission of landowners because the USFWS designated the area as "experimental, non-essential". This "10j" designation under ESA gives the agencies considerable flexibility in managing the reintroduced ferrets and alleviates private landowners' concerns about possible land use restrictions that would otherwise apply under the ESA.

The primary means of monitoring ferrets is through coordinated spotlight surveys conducted twice a year, once in the spring and again in the fall. This type of monitoring is particularly difficult in the WCMA due to rolling terrain dominated by shrubs that is intersected with deeply entrenched arroyos. In addition, the WCMA is large, encompassing approximately 52,000 acres within which 20,000 acres of white-tailed prairie dog (WTPD) habitat is scattered. Management of the area by the BLM restricts vehicular travel to designated roads and thus surveys are done mainly by foot. The size, type of terrain, and limited access hampers the ability to thoroughly monitor ferret populations.

Goal

To release a sufficient number of ferrets into the WCMA to establish a pre-breeding population of at least 20 adults by the fifth breeding season following the 2001 release.

We have not met this goal.

Current Status

Coordinated spotlight surveys were not conducted in 2011 because the population of ferrets was so found to be so low in 2009 and 2010, and because the WTPD population with the WCMA has been decimated by plague. Spotlight surveys conducted in 2009 and 2010 showed a minimum year end population of 1 individual animal; a 2007 captive released male. Spotlight surveys have shown a dramatic decline in ferret numbers since the 2008 year-end minimum population of 13 individuals (2 males, 9 females, 2 unknown). This decline is attributed to a plague epizootic in the WTPD population.

Reintroduction

Reintroduction of ferrets into Colorado began in 2001 with a total of 252 ferrets being released into the WCMA and 8 into the CBMA. In the WCMA, reintroductions have occurred each fall from 2001 - 2008. In the fall of 2008, 7 kits and 6 adults were released in the WCMA. A plague epizootic within the prairie dog population in the WCMA was discovered that same year. This epizootic coincides with the reduction in detected ferrets during surveys. The epizootic continued through 2009, 2010 and populations of WTPDs were still very low in 2011. The CPW has taken measures to reduce the impact to prairie dogs and ferrets by dusting burrows with an insecticide and monitoring areas for further outbreaks. As a result of this disease and its impacts, CPW declined to accept any additional captive-bred ferrets for release within the WCMA in 2009, 2010 and 2011. Future requests for captive-bred ferrets to release in Colorado will depend on future disease surveillance, and ferret and prairie dog population monitoring.

2011 Monitoring Activities

No spotlight surveys were conducted in 2011.

Number of positively identified black-footed ferrets during the post breeding surveys in the Wolf Creek Management Area.

Year	# of Individuals	Acres Surveyed	Total Hours Surveyed
2003	1	-------	598
2004	2	-------	616
2005	5	7,067	700
2006	9	7,166	630
2007	16	7,660	660
2008	12	6,425	655
2009	0	6,425	482
2010	0	3,940	270
2011	-	None	0

2011 Habitat Evaluation/Monitoring

No surveys were conducted to evaluate WTPD populations due to the plague epizootic infecting the area.

Results of WTPD population surveys from 2003-2011 used to evaluate habitat suitability for black-footed ferrets in the Wolf Creek management Area.

Year of Transect Effort	2003	2004	2005	2006	2007	2008	2009***	2010	2011
Total area mapped (ha)	5878	7765	7765	7765	7765	7765		7881	–
Percent of area sampled	1.01	0.98	0.97	0.91	0.94	0.91		0.70	–
Area of good ferret habitat (>25 active burrows/ha)	2432	2232	3899	5454	5343	2725		341	–
Active burrow density/ha	93	49	45	62	69	46		4.64	–
Prairie dog density/ha in good habitat	7.6	7.3	7.1	9.1	8.6	7.6		7.70	–
Prairie dog total on good habitat (ha)	16564	15581	27794	49519	47082	20646		2617	–
Black-footed ferret family rating	13.2	20.42	36.4	64.1	59.0	25.9		3.43	–

*** Transecting was not completed in 2009 due to a hiring freeze.

2011 Disease Monitoring, Management, and Research

- As part of the Colorado/Utah ferret reintroduction protocol, disease surveillance is conducted annually in the Wolf Creek (WCMA), Coyote Basin (CBMA) and Snake John Reef management areas. Disease monitoring in 2011 consisted of sampling fleas from prairie dog burrows in July. In 2011 flea sampling also occurred on the Crooked Wash complex which was decimated by epizootic plague in late 2010 and early 2011. Animal carcasses were opportunistically collected in and around the WCMA from April to September 2009. Preliminary findings are described in the following paragraphs; additional results are pending further laboratory analysis.

- During the monitoring session at the WCMA in 2011, approximately 175 fleas were collected from over 300 burrows and combined into 46 pools for laboratory testing. The presence of *Y. pestis* (plague) DNA was not detected in any of these flea pools. Sampling at the CBMA yielded approximately 115 fleas from 90 burrows which were combined into 30 pools for laboratory testing. The presence of *Y. pestis* DNA was detected in 5 of these flea pools. At Snake John Reef approximately 90 fleas were collected from 60 burrows and combined into 26 pools for laboratory testing. The presence of *Y. pestis* DNA was detected in 1 of these flea pools. Sampling at the Crooked Wash complex yielded approximately 860 fleas from 230 burrows which were combined into 162 pools for laboratory testing. The presence of *Y. pestis* DNA was detected in 21 of these flea pools. In 2011, no WTPD carcasses were collected or tested from the above areas.

- The discovery of plague positive fleas and carcasses within the WCMA in 2008 marked the beginning of a CPW and BLM disease management project to limit the impact of the plague epizootic on the ferret population. A powdered insecticide was applied to prairie dog burrows in an attempt to control the infected flea population and slow or stop the transmission of the disease. In the fall of 2008, prairie dog burrows on 369 hectares of habitat were treated and an additional 471 hectares were treated in the spring of 2009. To evaluate the effectiveness of the flea control, 348 WTPDs were captured in 2009 and all fleas were collected for laboratory testing. Plague positive fleas were collected from 16 of these live-trapped prairie dogs, all of which were captured on non-treated areas. As part of continuing research efforts, 108 hectares were treated with insecticide and 49 WTPDs were captured in 2010, with all 27 fleas testing negative for plague. All prairie dogs were released at the site of their capture after sampling. No insecticide was applied within the WCMA in 2011.

- The flea control appears to have been effective for 4-8 months as the prairie dog population in the treated area appeared to remain at high to moderate density while populations on adjacent non-treated habitat declined dramatically. The occurrence of plague positive fleas 1-2 years after treatment suggests that the insecticide provided only temporary protection against disease transmission and was unsuccessful at stopping the epizootic.

In 2010, two CPW research projects investigating plague control and management strategies were continued in the WCMA. First, an evaluation of the effectiveness of flea control to manage plague outbreaks and second, a research collaboration with the USGS, National Wildlife Heath Center to evaluate biomarker use to measure the consumption of a experimental bait for future delivery of an oral sylvatic plague vaccine. Both of these research projects continued in 2011 at study sites throughout Colorado. Additional CPW research evaluating oral sylvatic plague vaccine efficacy and duration of immunity in wild-caught WTPDs began in 2011 at the Foothills Wildlife Research Facility in Fort Collins. Additional research efforts will continue in 2012 with sylvatic plague vaccine field safety and efficacy trials scheduled to begin in Colorado in June and July.