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# MAMMALS

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## BLACK-FOOTED FERRET REINTRODUCTION IN GRASSLANDS NATIONAL PARK, SASKATCHEWAN

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Once found throughout the Great Plains, the black-footed ferret (*Mustela nigripes*) is a species of international concern and is considered one of North America's most endangered mammals. These native ferrets are small, weasel-like mammals with a black mask, black feet, and a slender buff-coloured body measuring 55–60 cm in length, including the black-tipped tail (Fig. 1). Like most mustelids, black-footed ferrets are primarily solitary and nocturnal. These predators are adapted to survive underground in the burrows of their primary prey, prairie dogs (*Cynomys* spp.).<sup>1,2</sup>

Black-footed ferrets suffered a rapid population decline in the early 1900s, caused in part by human activity (cultivation of habitat, prairie dog eradication programs) and by diseases (sylvatic plague, rabies, canine distemper).<sup>2,3</sup> Black-footed ferrets were thought to be globally extinct until 1981,



Figure 1. Black-footed ferret.  
Paul Knaga, Parks Canada

when a small population was discovered near Meeteetse, Wyoming. Between 1985 and 1987, the remaining 18 wild black-footed ferrets were captured in an attempt to develop a conservation breeding program to save the species. All ferrets living in the wild today were raised in this program or are the descendants of re-introduced ferrets.<sup>2,3</sup> The Toronto Zoo has participated in the black-footed ferret conservation breeding program for the last 16 years, adding a Canadian component to international ferret recovery efforts.<sup>4</sup>

Historically present on the plains of southern Alberta and Saskatchewan, black-footed ferrets were last seen in Canada in 1937 and were designated extirpated in 1978.<sup>4</sup> The West Block of Grasslands National Park of Canada (GNPC), together with neighbouring community pastures and private ranches, is the best hope for black-footed ferret reintroduction because it is the only place in Canada where black-tailed prairie dog (*C. ludovicianus*) colonies occur.<sup>5</sup> Active prairie dog colonies provide critical habitat necessary for black-footed ferret survival.<sup>6</sup> Prairie dogs comprise about 90% of a ferret's diet,<sup>7</sup> and their burrows provide ferrets with shelter from predators and severe weather and a place to rear young.<sup>5</sup> Recovering black-footed ferrets in Canada will contribute to the North

American ferret conservation efforts by re-establishing a wild ferret population at the northern extent of their historic range.

Parks Canada, along with a dynamic and diverse team, has been working to return black-footed ferrets since 2004. The Recovery Strategy for the black-footed ferret in Canada<sup>6</sup> and the Management Plan for the black-tailed prairie dog in Canada,<sup>5</sup> approved by the Minister of Environment in June 2009, were developed through the cooperation of federal government departments and agencies, the province of Saskatchewan, as well as representatives of major academic institutions and stakeholder groups such as the Toronto Zoo (captive breeding facility for the black-footed ferret), Calgary Zoo (Centre for Conservation Research) and a private landowner.

These conservation actions have been internationally coordinated through the Black-footed Ferret Recovery Implementation Team (BFFRIT), which is led by the United States Fish and Wildlife Service (USFWS). Since 1987, over 7000 kits have been born under management of the captive populations. Reintroduction of black-footed ferrets began in 1991, and since that time, over 2500 ferrets have been reintroduced at 19 locations in the USA (in eight of the 12 states within the historic range), Mexico and most recently to Canada (P. Marinari, pers. comm.; Fig. 2). Researchers have estimated that ferret numbers in the wild total 1000 during annual fall surveys, with approximately half surviving the winter to breed each spring.<sup>1</sup>

The return of black-footed ferrets to the Canadian prairies was celebrated on

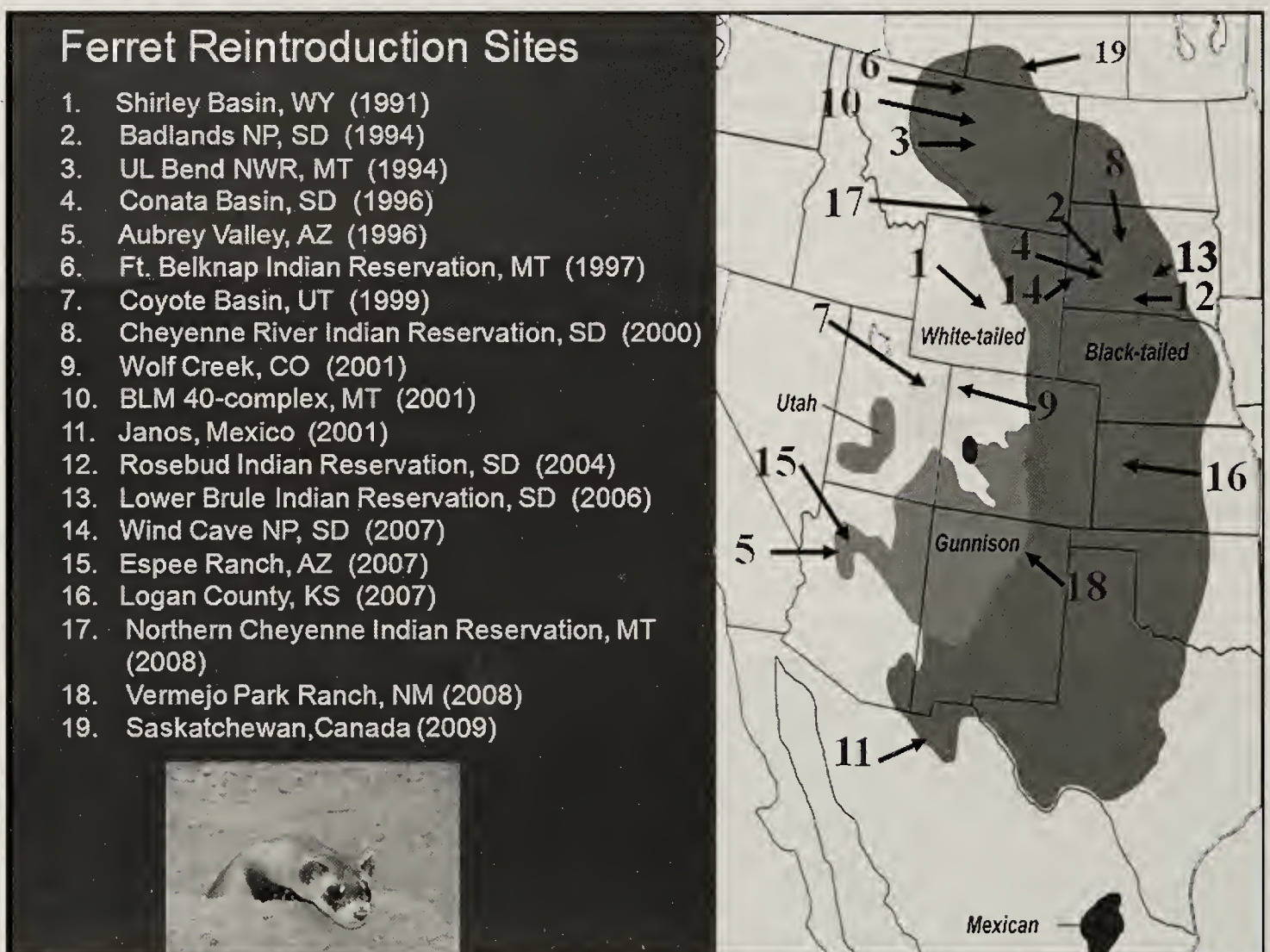


Figure 2. Black-footed ferret reintroduction sites across their historical range, which includes five species of prairie dogs: black-tailed, white-tailed, Utah, Gunnison and Mexican prairie dogs. US Fish and Wildlife Service, 2010



Figure 3. Black-footed ferret released into Grasslands National Park of Canada.  
Johane Janelle, Parks Canada

2 October 2009, with the release of 34 ferrets into eight prairie dog colonies in the West Block of GNPC and on adjacent prairie dog colonies in privately managed lands (Fig. 3 and front cover photo). The journey home for these captive-born ferrets included spending a minimum of 30 days being pre-conditioned at the National Black-footed Ferret Conservation Centre in Ft. Collins, Colorado. Ferrets are typically 90 days old when placed into preconditioning pens with a natural burrow system and exposure to live prairie dogs. By 120–150 days of age, the ferrets are transported to their reintroduction sites.<sup>1</sup>

In 2010, for the first time in Canada, the reintroduced black-footed ferrets enjoyed a prairie springtime in their new grasslands home. Sixteen volunteers assisted Parks Canada staff during an intensive 10-day monitoring session in March 2010, by walking from 12 to 27 km per night while searching for ferrets in the prairie dog towns. Night spotlighting is the standard technique for tracking and monitoring of ferret populations.<sup>8</sup> Throughout the monitoring nights, participants used high-intensity spotlights to scan prairie

dog colonies in search of the distinct reflective emerald eye shine of the ferret. Upon positive observation, a specialized passive integrated transponder (PIT) tag scanner was used to individually identify each animal (Fig. 4).<sup>8</sup> The scanner's ring is placed around the burrow entrance containing the ferret, and the scanner "reads" the PIT tag (microchip) of the ferret when it moves through the sensitive ring, uniquely identifying the animal. Monitoring success depends on detecting ferret eyeshine when ferrets are active above ground during the night; time spent above ground will vary by individual, time since last feeding, and environmental conditions (moonlight, wind conditions). Detection and post-release success may be also influenced by the prevalence of predators like coyotes (*Canis latrans*) or great horned owls (*Bubo virginianus*).

Over 975 volunteer hours spent spotlighting in March 2010 resulted in the ferret trackers positively identifying 35% or 12 of the 34 ferrets originally released on 2 October 2009. The identified ferrets had a sex ratio of 4 males: 7 females, with one additional ferret sighting confirmed

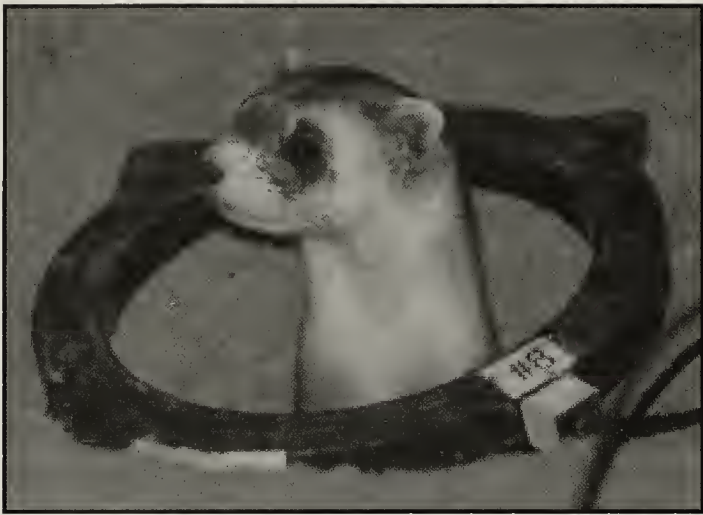


Figure 4. Black-footed ferret successfully PIT-tag scanned.

Paul Knaga, Parks Canada

but not PIT identified. The over-wintering survival of the captive-born ferrets is encouraging, as it is similar to the average annual survival rates of wildborn kits in Montana, which is 41% (R. Matchett, USFWS, unpublished data).

Parks Canada and its black-footed ferret recovery partners will continue to gain information on the reintroduced ferrets. Black-footed ferrets breed in March and April, and after a gestation period of 41 to 43 days, a female will usually have a litter of 3 to 4 kits.<sup>2</sup> Litter production will be assessed at the end of August 2010, and a second release of black-footed ferret kits is planned for late September 2010.

The monitoring and research planned following the initial ferret reintroduction will ensure maximum learning opportunities from this effort in order to advance prairie conservation and to share those lessons with the public. GNPC is looking forward to offering a unique opportunity for the public to volunteer in a 'Ferret Tracker' monitoring program in an effort to evaluate the recovery of this species and to continue to increase awareness of prairie conservation and black-footed ferrets. If you are interested in volunteering, contact GNPC at <grasslands.info@pc.gc.ca> or call 306-298-2257 for more information.

Today, it is estimated that 80% of Canada's mixed grasslands are gone. Returning North America's only native ferrets into this ecosystem is a small step towards ensuring robust diversity in this disappearing landscape. Recovery of an endangered species is a long-term commitment, wherein the longer that effort, the greater the likelihood of success. The future of black-footed ferrets in Canada is still uncertain, but the initial results are positive.

1. Black-Footed Ferret Recovery Implementation Team. <www.blackfootedferret.org>

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5. Tuckwell J, Everest T (2009a) Management Plan for the Black-tailed prairie dog (*Cynomys ludovicianus*). Species at Risk Act Management Plan Series. Parks Canada Agency, Ottawa, ON.

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7. Campbell TM, Clark TW, Richardson L, Forrest SC, Houston BR (1987) Food habits of Wyoming black-footed ferrets. *American Midland Naturalist* 117:208-210.

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