

FALL 2015 BLACK-FOOTED FERRET SURVEY
LOGAN COUNTY, KANSAS

DAN MULHERN; U.S. FISH AND WILDLIFE SERVICE

INTRODUCTION

As part of ongoing efforts to monitor the status of reintroduced endangered black-footed ferrets at two sites in Kansas, the Kansas Field Office of the U.S. Fish and Wildlife Service coordinated a survey of the Butte Creek Ranch (formerly identified as the Haverfield/Barnhardt/Blank ranch) and TNC's Smoky Valley Ranch in fall 2015, conducted October 13-21. A total of 8 consecutive nights of survey effort were completed, with a partial ninth night that was cut short by rain.

METHODS

Since ferrets were first released on the two ranches in December 2007, they have comprised what was considered a single reintroduction/recovery site. That changed during 2015 when the Haverfield and Barnhardt families entered into a Safe Harbor Agreement (SHA) for their ranch, formally calling it the Butte Creek Ranch. All activities conducted as part of ferret recovery on this property will now fall under the purview of the range-wide SHA. Details of this SHA are not included with this report but are readily available from the Fish and Wildlife Service.

The two ranches have been subdivided into individual pasture units for the purposes of surveying and reporting results (Figures 1 and 2). The standard protocol is to survey each pasture unit a minimum of three nights, with some smaller units grouped together for coverage by a single survey crew during a night's work. A thorough survey requires at least 27 vehicle-nights in order to complete the Butte Creek Ranch, with another 9 vehicle-nights required to complete the Smoky Valley Ranch. Despite rainfall eliminating the last scheduled night and essentially rendering the previous night's data unusable, the fall 2015 survey was still able to incorporate 51 vehicle-nights due to the adequate vehicle availability early in the survey. This included 39 nights on Butte Creek Ranch and 12 on Smoky Valley Ranch. The survey nights were completed under optimal survey conditions, with the exception of high winds on two nights.

A standard survey crew follows a protocol worked out over 20 years at other black-footed ferret reintroduction sites in North America, and consists of a high-clearance vehicle occupied by two or more surveyors, outfitted with spotlights, GPS units, communications radios, and pasture maps and data sheets. By driving randomly-spaced routes around a pasture, surveyors observe eye-shine of ferrets and other species using the spotlights. Fifty-one people participated in one or more nights of this survey, providing approximately 350 vehicle-hours of effort.

One of the purposes of the annual fall survey is to locate and count as many first-year kits as possible, which necessitates capturing animals for individual identification. For each ferret that was observed at or entering a specific burrow, a live trap was then placed on this burrow, and checked frequently during the remainder of the night. A trap is typically left unattended for no more than one hour at a time to prevent over-cooling or other danger to a trapped ferret. A GPS reading is taken at the location, and a reflector stake is left at the burrow, both to aid in relocating the site.

Once a ferret is captured, it is transported immediately to a central processing site nearby. It is anesthetized, given a thorough veterinarian exam, vaccinated against canine distemper, given a passive integrated transponder (PIT) chip, if it does not already have one, and a temporary dye mark on the throat. This latter mark enables surveyors to determine whether an animal has already been trapped without having to get it in hand again.

Post-processing of the data involves comparing PIT numbers read with a list of all previously-marked ferrets, as well as trying to determine whether uncaptured animals were new individuals or repeat observations of a previously-seen ferret. For example, if two ferret observations occur less than a mile or so apart on different nights, there is a possibility they are of the same animal and only counted as a single individual, unless capture clearly identifies them as separate.

RESULTS

Butte Creek Ranch

A total of 11 different black-footed ferrets were observed during the survey on the Butte Creek Ranch. Nine of these ferrets were captured, and the remaining two were uncaptured but determined to be unique individuals. The nine captured ferrets were identified as three adult males, one adult female, two juvenile males, and three juvenile females. The remaining two ferrets were not captured, and were determined to be separate individuals based on the timing and location of their observation. See Table 1 for information on where ferrets were observed on this site.

Smoky Valley Ranch

Two black-footed ferrets were observed during the survey on the Smoky Valley Ranch, and neither was captured. Therefore, we have no idea if there are any first-year kits, which would indicate successful reproduction. See Table 2 for information on where these animals were observed on the ranch.

DISCUSSION

Three years of drought were broken by good rainfall in spring and early summer across the area including these two reintroduction ranches. However, as indicated by Matt Bain, Ranch Manager at Smoky Valley Ranch, the timing was such to encourage growth of purple three-awn, a grass inedible to most grazing species, including cattle and prairie dogs. So while vegetation coverage appeared improved over 2014, much of it was unsuitable habitat. Habitat on the Butte Creek Ranch was further reduced by a large growth of forbs such as sunflower and snow-on-the-mountain. In areas where these tall forbs were numerous we observed very little prairie dog activity. The spread of yucca appears to continue to be an issue on both ranches. In areas of good coverage of buffalograss or blue grama, prairie dogs appeared numerous and active. During the little time crew members spent on site during daylight hours, prairie dogs appeared numerous and in good body condition in these micro-areas.

As part of the Butte Creek Ranch SHA, additional prairie dog control was conducted within the boundary of the property in fall 2014-2015. The purpose of this increased control was to reduce the pressure from prairie dogs emigrating off this property onto neighboring lands where they are not well tolerated. The Service's goal was to ensure that intentional prairie dog poisoning would never bring the prairie dog area on the ranch below 6,400 acres, the baseline at which this project began. Beginning with approximately 7,800 acres in 2014, the Service and USDA targeted nearly 1,000 acres for treatment in addition to the 90-foot buffer which is always managed for zero prairie dog occupancy. While this targeted treatment was intended to reduce overall prairie dog occupancy to 6,800 acres, habitat surveys in July 2015 indicated the total is now between 6,300 and 6,400 acres. The extra reduction in about 450 acres of prairie dogs is attributed to the increase in undesirable vegetation ranch-wide. Because of the levels currently existing, there will be no additional interior prairie dog reduction actions taken on the Butte Creek Ranch this treatment season.

For the third consecutive year, numbers of other mesocarnivores appear to still be very high on both ranches, although animal numbers other than ferrets are anecdotal reports. Coyotes, badgers, skunks and swift fox in particular were common and in some locations numerous. Swift fox, surprisingly, are still abundant on both ranches despite the spike in coyote numbers. Conversely, numbers of both rabbit species, cottontail and jackrabbit, appeared reduced. What this may say about the prey base on these sites, or how, if at all, it may affect ferret population growth, cannot be determined at this time.

Finding only 13 ferrets across the two sites in Logan County was a sign that things have not yet recovered from the population crash that started in 2011. This is especially true when considering that 19 new ferrets were released on the Butte Creek Ranch following the 2014 survey, which should have increased that site's total to 27. The large growth of vegetation made

visual observations much more difficult, and the fact that much of this increased growth is unsuitable habitat for prairie dogs compounds the problem. The ability of either ranch to address this issue and bring about an increase in more favorable grass species will be crucial in determining future ferret population growth.

See Table 3 for the cumulative numbers since project initiation.

Table 1. Butte Creek Ranch, KS Black-Footed Ferret Fall 2015 Survey Results; October 13-21, 2015. Numbers indicate unique individual observed ferrets.

PASTURE	Adult Male	Adult Female	Juv Male	Juv Female	Unknown	TOTAL
Cake Bin	0	0	0	0	1	1
East	1	0	0	0	0	1
W Drive + NW	0	0	0	0	0	0
House N	0	0	0	0	0	0
Blank + SW	2	1	2	3	1	9
Barnhardt	0	0	0	0	0	0
S Road	0	0	0	0	0	0
TOTAL	3	1	2	3	2	11

Table 2. Smoky Valley Ranch, KS Black-Footed Ferret Fall 2015 Survey Results; October 13-21, 2015. Numbers indicate unique individual observed ferrets.

PASTURE	Adult Male	Adult Female	Juv Male	Juv Female	Unknown	TOTAL
East + Long	0	0	0	0	0	0
River + Horse	0	0	0	0	1	1
West + Far West	0	0	0	0	1	1
TOTAL	0	0	0	0	2	2

Table 3. Logan County, Kansas Black-footed Ferret Numbers since Reintroduction Began

Date	Event	Adult Male	Adult Female	Juv Male	Juv Female	Unknown	CUMULATIVE MINIMUM TOTAL
Dec 2007	Release	0	5	10	9	0	24
Mar 2008	Spotlight	3	5	0	0	0	8
Aug 2008	Spotlight	2	4	1	0	9	16
Oct 2008	Release	0	0	18	19	0	53
Nov 2008	Release	0	1	6	6	0	66
Mar 2009	Spotlight	6	7	0	0	6	19
Aug 2009	Spotlight	2	8	1	1	14	26
Dec 2009	Snowtrack	?	?	0	0	20	20
Mar 2010	Spotlight	13	19	0	0	4	36
Sep 2010	Release	3	4	4	3	0	14
Sep 2010	Spotlight	7	9	15	17	16	78
Nov 2010	Release	0	3	11	11	0	103
Jan 2011	Spotlight	0	0	0	0	3	106
Mar 2011	Spotlight	17	15	0	0	11	43
Aug-Sep 2011	Spotlight	9	7	2	3	17	38
Mar 2012	Spotlight	5	3	0	0	14	22
Jul-Aug 2012	Spotlight	?	4	?	?	18 (13 juv)	22
Sep-Oct 2012	Spotlight	7	9	6	8	9	39
Oct 2012	Release	0	2	6	4	0	51
Mar-Apr 2013	Spotlight	3	3	0	0	5	11
Aug 2013	Spotlight	0	0	0	0	5	5
Oct 2013	Spotlight	4	0	2	4	12	22
Mar 2014	Spotlight	2	3	0	0	1	6
Oct 2014	Spotlight	2	2	2	2	3	11
Oct 2014	Release	6	4	6	3	0	30
Oct 2015	Spotlight	3	1	2	3	4	13

*Minimum total of 269 BFF released & born between Dec '07 and Oct. 2015 - 13 **SURVIVING** *

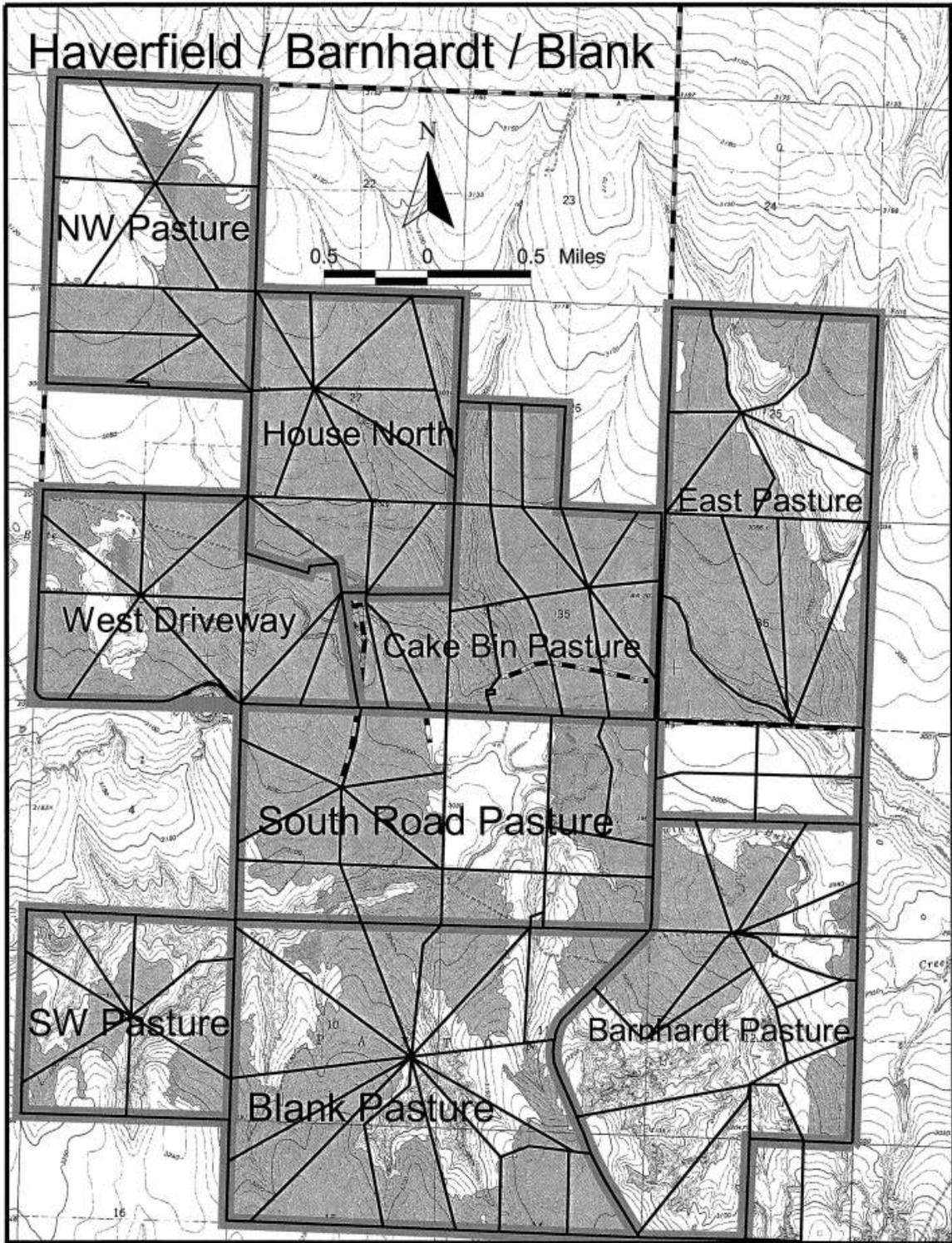


Figure 1. Pasture map of the Butte Creek Ranch.
All units are managed for prairie dogs and ferrets and are available during surveys.

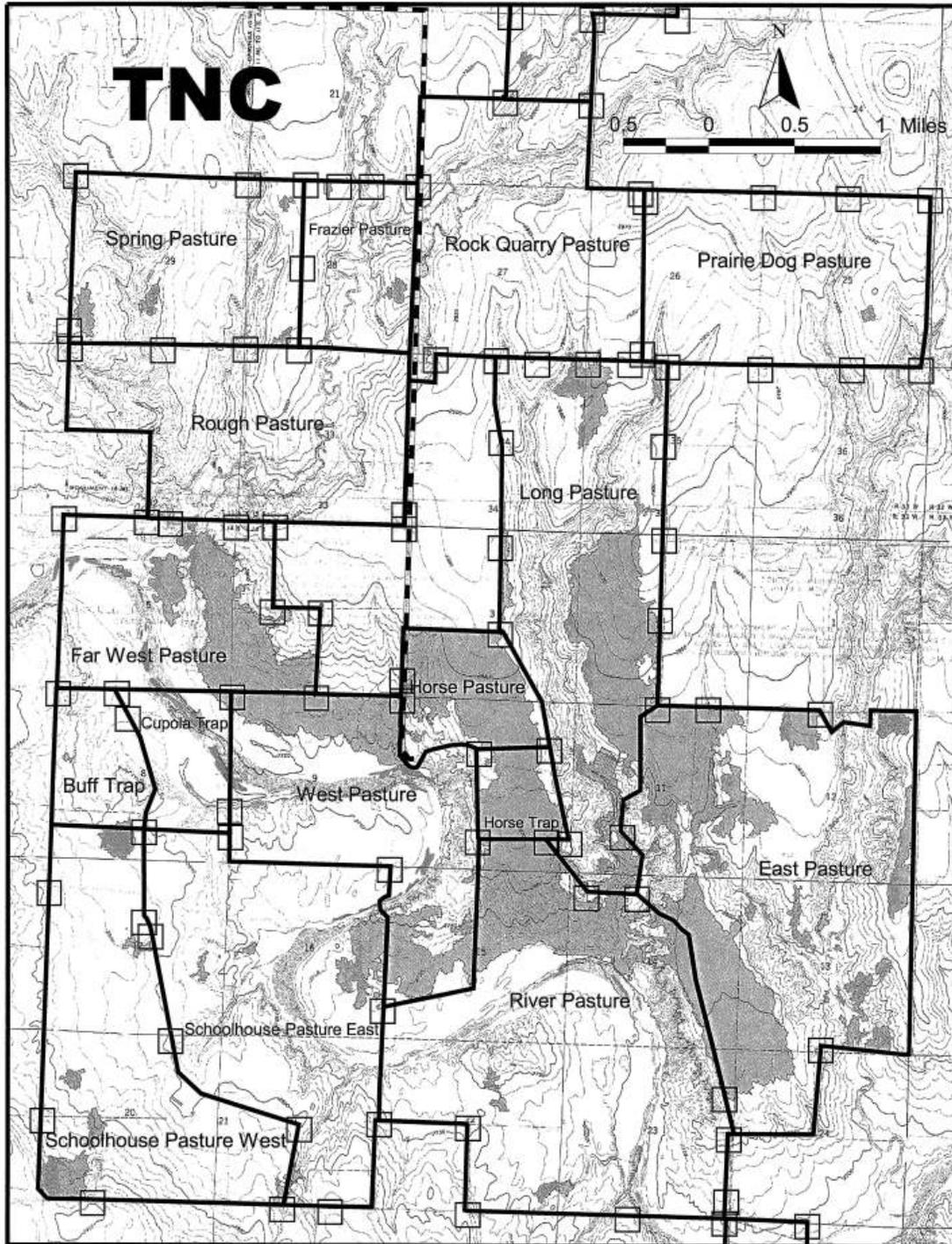


Figure 2. Pasture map of TNC's Smoky Valley Ranch. Only the central pastures (named in Table 1) are managed for prairie dogs and ferrets and are included in surveys.