

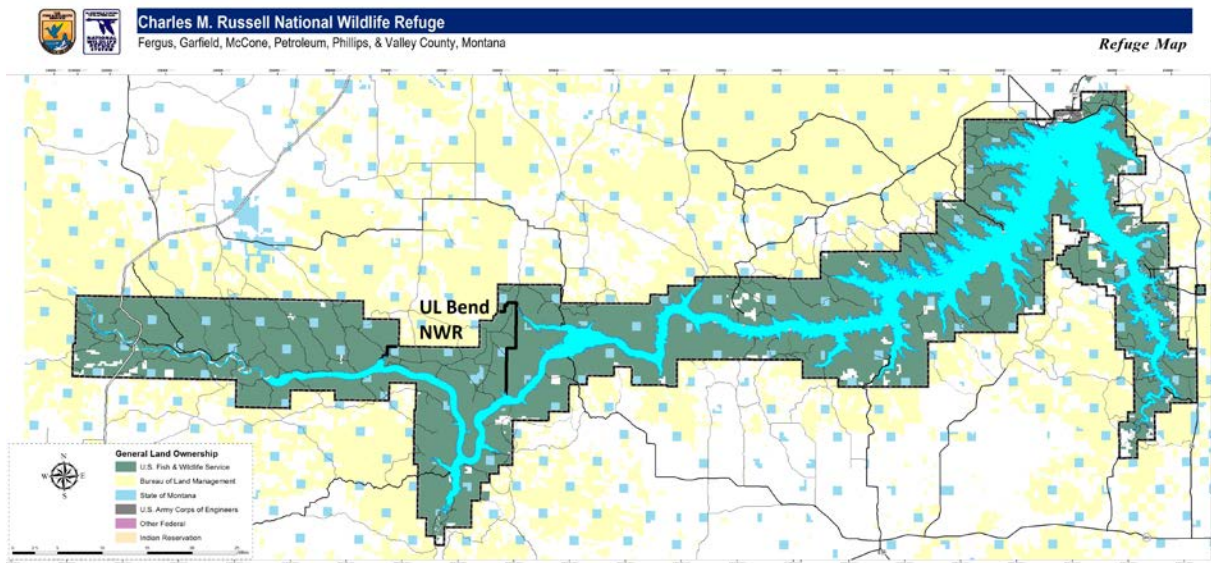
# ENVIRONMENTAL ASSESSMENT

March 31, 2016

Prairie Dog Sylvatic Plague Vaccination  
UL Bend National Wildlife Refuge  
Charles M. Russell National Wildlife Refuge

## 1.0 PURPOSE FOR THE ACTION

Black-footed ferrets (*Mustela nigripes*, hereafter ferrets) have been listed as an endangered species since 1967 and are considered one of North America's rarest mammals. Recovery of endangered species is among the highest priorities of the U.S. Fish and Wildlife Service (FWS), especially on National Wildlife Refuges. Captive-reared ferrets have been reintroduced on the UL Bend National Wildlife Refuge (managed as part of the Charles M. Russell National Wildlife Refuge (CMR)) since 1994 in attempts to establish a viable population and contribute to ferret population recovery. Sylvatic plague is a significant impediment to ferret recovery because of its lethality to ferrets, and because it can eliminate prairie dogs (*Cynomys* spp.) on which ferrets are dependent for both habitat and as prey. An oral sylvatic plague vaccine (SPV) for prairie dogs has been shown to protect prairie dogs from plague and is proposed here for application to black-tailed prairie dog colonies (*C. ludovicianus*) in support of ferret recovery on CMR and UL Bend National Wildlife Refuges.



An Environmental Assessment<sup>1</sup> (EA) was prepared, and a Finding of No Significant Impact<sup>2</sup> was approved, for the use of SPV for field trials to determine the vaccine's effectiveness by the U.S. Geological Survey (USGS). These trials included vaccination treatments of prairie dog

<sup>1</sup> U.S. Geological Survey. 2012. *Environmental Assessment of 'FIELD STUDIES TO ASSESS THE SAFETY OF SYLVATIC PLAGUE VACCINE IN PRAIRIE DOGS AND NON-TARGET ANIMALS'*, National Wildlife Health Center, Madison, Wisconsin. April, 2012. [http://www.nwhc.usgs.gov/disease\\_information/sylvatic\\_plague/publications/SPV%20Phase%20I%20EA%20with%20appendices.pdf](http://www.nwhc.usgs.gov/disease_information/sylvatic_plague/publications/SPV%20Phase%20I%20EA%20with%20appendices.pdf)

<sup>2</sup> U.S. Geological Survey. 2013. *Finding of No Significant Impact for the Environmental Assessment of 'FIELD STUDIES TO ASSESS THE SAFETY OF SYLVATIC PLAGUE VACCINE IN PRAIRIE DOGS AND NON-TARGET ANIMALS'*. May 9, 2013. [http://www.nwhc.usgs.gov/disease\\_information/sylvatic\\_plague/publications/SPV%20Phase%20II%20Signed%20FONSI%2005-2013.pdf](http://www.nwhc.usgs.gov/disease_information/sylvatic_plague/publications/SPV%20Phase%20II%20Signed%20FONSI%2005-2013.pdf)

colonies in 7 states and included 4 species of prairie dogs. One of the study sites included in that EA was in the UL Bend area. The proposed actions in this EA are the same as already approved in the USGS EA, varying only in scope from treatments of relatively small experimental test sites as described in the USGS National Environmental Policy Act (NEPA) documents, to operational use of SPV at management scales intended to support prairie dog conservation and ferret recovery.

An additional purpose of the proposed action is to continue observations and data collection on the effectiveness of SPV to mitigate the effects of plague. Plague will continue to be a major factor in the recovery of black-footed ferrets and information resulting from this action will help guide future international prairie dog and black-footed ferret management activities.

SPV is an attenuated raccoon pox-vectored recombinant plague vaccine, RCN-IRES-tPA-YpF1/V307, (“RCN-F1”). This vaccine uses an attenuated raccoon pox-virus to deliver the F1 and truncated V307 protein antigens of *Y. pestis* to the immune system of prairie dogs. The combination of the F1 and V antigens expressed in the vaccine stimulate specific antibodies in the immune system to ward off sylvatic plague. RCN-F1 consumed by prairie dogs via voluntary bait uptake has been shown to significantly increase survival during experimental challenges to plague.

## 2.0 NEED FOR THE ACTION

Plague is a primary obstacle to black-footed ferret recovery. After more than 20 years of intensive reintroduction efforts across 27 reintroduction sites ranging from Mexico to Canada, approximately 300 ferrets were known to exist in the wild at the end of 2015. Ferrets are constantly threatened by plague outbreaks that affect both ferrets, and their primary prey and habitat provider, prairie dogs. The primary tool to manage plague has been treatment of prairie dog burrows with pulicides to eliminate fleas, the primary vector of the bacterium *Yersinia pestis* that causes plague. Development of flea resistance to chemical control has recently been suspected and is a growing concern for usefulness of this plague mitigation tool. SPV is a complimentary strategy to mitigate plague and is proposed here to be applied operationally to maintain and promote prairie dog colonies.

## 3.0 Public Participation

### 3.1 Summary of public involvement

This EA was made available for public comment during a 30 day period, from April 13 until May 13, 2016. During this time, press releases notifying the public of the comment period were posted in the local newspapers in Lewiston, Malta, Glasgow, and Jordan Montana. The EA was made available at the CMR website at: [http://www.fws.gov/refuge/charles\\_m\\_russell/](http://www.fws.gov/refuge/charles_m_russell/) or by contacting CMR to receive a copy by mail. All comments received during this period will be reviewed by refuge staff.

## 4.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION

### 4.1 Alternative A - Treat Prairie Dog Colonies with Sylvatic Plague Vaccine - PROPOSED

Up to 10,000 acres of prairie dog colonies on CMR would be treated with SPV, at least annually, starting in 2016. The expectation is prairie dog colonies would persist, and hopefully expand within biological limits and contribute habitat available for recovery of black-footed ferrets. SPV application would involve distributing single, vaccine-laden, peanut-butter flavored baits uniformly across prairie dog colonies at a rate of 50 baits per acre. This application could be achieved on foot or by all-terrain vehicle (ATV) and currently a separate EA is being considered to use Unmanned Aircraft Systems (UAS) for SPV application.

#### 4.2 Alternative B - No Action

Prairie dog colonies on CMR would not be treated with SPV. Prairie dog colonies would remain vulnerable to the effects of plague as they have for the last 30+ years and habitat for recovery of black-footed ferrets would be less secure than under the proposed alternative.

### 5.0 AFFECTED ENVIRONMENT

#### **Physical Environment**

The areas to be treated are located in South Phillips County, Montana. The Missouri River/Fort Peck Reservoir form the south boundary of the treatment area. The topography consists of flat to rolling hills to the north and steep river breaks adjacent to the Missouri River/Fort Peck Reservoir to the south. Air quality is excellent. The climate is continental with warm, dry summers and cold winters. The frost-free season is about 120 days. Average annual precipitation is 12 inches.

#### **Biological Resources**

##### Vegetation

Vegetation is primarily sagebrush-grassland. Riparian vegetation consists primarily of the plains cottonwood/willow community type. Upland grasses are western wheatgrass, bluebunch wheatgrass, and blue gramma. Major upland shrubs are big sagebrush and greasewood.

##### Wildlife

A diversity of prairie wildlife occurs. Big game species include mule and white-tailed deer, elk, pronghorn antelope and bighorn sheep. Bird life includes sage and sharp-tailed grouse, prairie passerines and numerous raptors. Burrowing owls, mountain plovers, ferruginous hawks and golden eagles nest in the area.

##### Federal Threatened and Endangered Species

Listed threatened or endangered species occurring within the project area include the black-footed ferret and pallid sturgeon. A resident population of at least 9 black-footed ferrets was present during fall 2015.

#### **Socioeconomic Environment**

##### Cultural Resources

Some historic, paleontological and some important Native American sites occur in the vicinity.

### Special Designations

Portions of UL Bend NWR are designated Wilderness Areas. The refuge also has several Proposed Wilderness Areas that are adjacent to, or bordered by, unimproved 2 track roads that are open to public travel.

### Public Uses

Recreation in the project area consists mainly of upland game bird and big game hunting, although some wildlife viewing occurs. Fishing on Fort Peck Reservoir is popular.

### Local Economy

The economy of the land adjacent to the refuge is predominately agricultural, livestock grazing and small grain farming along with recreation and tourism.

## 6.0 ENVIRONMENTAL CONSEQUENCES

### 6.1 Alternative A - Treating Prairie Dog Colonies with SPV - PROPOSED

#### **Potential Impacts to Physical Environment**

No physical impacts to the site will occur due to SPV; however, applying the vaccine via ATV could cause minimal soil disturbance.

#### **Potential Impacts to Biological Resources**

##### Vegetation

Based on field safety trails and field efficacy trials, no impacts to vegetation would occur due to the vaccine. Applying SPV via ATV could cause minimal disturbance to vegetation.

##### Wildlife

###### Bacterium

SPV would provide prairie dogs resistance to the exotic bacterium *Yersinia pestis*. This could potentially reduce bacterium populations by reducing availability of suitable hosts.

###### Black-tailed Prairie Dogs

Vaccinating is expected to reduce the effects of plague on prairie dog populations. With reduced prairie dog mortality from plague, populations would be expected to be maintained, and have the opportunity to expand within biological potentials, a desired outcome to provide habitat for ferrets and associated species.

###### Birds

There are no known risks to birds. Based on field safety trails and field efficacy trials, no impacts to birds would occur. Similar to ferrets, protection of black-tailed prairie dogs from plague from vaccinations would enhance habitats for birds for those species that benefits from the presence of prairie dogs.

###### Insects

There are no known risks to insects. Based on field safety trails and field efficacy trials, no impacts to insects would occur.

#### Fish

The vaccine will be applied in a xeric environment and will not enter an aquatic environment, therefore no impact fish would occur. There would be no impact to the endangered pallid sturgeon.

#### Reptiles and Amphibians

There are no known risks to reptiles and amphibians. Based on field safety trails and field efficacy trials, no impacts to reptiles and amphibians would occur. Some amphibian species (tiger salamander) may benefit from increase habitat resulting from increasing prairie dog colonies.

#### Federal Threatened and Endangered Species

Federal Threatened and Endangered Species present on CMR and UL Bend are:

Pallid Sturgeon- SPV would be applied only in xeric, upland habitats and would not be used in sturgeon habitat. There would be no impact to the endangered pallid sturgeon.

Black-footed Ferrets- The risk of exposure to plague for resident ferrets could be decreased. Protection of prairie dogs from plague could enhance habitat and prey available for ferrets.

### **Potential Impacts to Socioeconomic Environment**

#### Cultural Resources

There are no known risks to cultural resources in the proposed area. SPV application would be accomplished by foot, ATV, or aurally to minimize soil disturbance and impact to any archaeological or paleontological resources.

#### Special Designations

SPV will be applied to prairie dog colonies outside of wilderness areas. Application will include the possibility of ATV or UAS operation near wilderness, which could create noise disturbance within the wilderness. The wilderness areas that are adjacent to prairie dog towns that will be treated with SPV are bordered by roads open to vehicle traffic, currently. Prairie dog populations in wilderness areas could potentially benefit from UAS applications adjacent to the wilderness.

#### Public Uses

There are no expected impacts to public uses.

#### Economy

There is no expected impact to local economy.

6.2 Alternative B - No Action

**Potential Impacts to Physical Environment**

No physical impacts to the site will occur.

**Potential Impacts to Biological Resources**

Vegetation

No impacts to the vegetation will occur

Wildlife

Bacterium Mortality

No impacts to bacteria populations would occur.

Black-tailed Prairie Dogs

The risk of plague affecting black-tailed prairie dogs would likely be greater than under Alternative A.

Birds

No impact to birds would occur.

Insects

No impact to other insects would occur.

Fish

No impacts to fish would occur.

Reptiles and Amphibians

No impacts to reptiles or amphibians would occur.

Federal Threatened and Endangered Species

Pallid Sturgeon- No impacts to Pallid Sturgeon would occur.

Black-footed Ferrets- The risk of plague affecting black-footed ferrets would likely be greater than under Alternative A.

**Potential Impacts to Socioeconomic Environment**

Cultural Resources

No impacts to cultural resources would occur.

Special Designations

No impacts to Wilderness Area would occur.

Public Uses  
 No impacts to public uses would occur.

Economy  
 No impacts to local economy would occur.

**SUMMARY TABLE OF ENVIRONMENTAL CONSEQUENCES**

ACTION	PLAGUE BACTERIA	PRAIRIE DOGS	FERRETS	BIRDS	OTHER LISTED	OTHER NON-LISTED	PHYSICAL
A - SPV	---	+++	+++	0	0	0	0
B - NONE	+++	---	---	0	0	0	0

This table summarizes the anticipated impacts of each potential action. ‘+’ represents beneficial effects, ‘--’ represents negative effects, and ‘0’ represents no effect.

7.0 LIST OF PREPARERS

Matthew McCollister - Wildlife Biologist, Charles M. Russell National Wildlife Refuge, Lewistown, MT

Randy Matchett – Wildlife Biologist, Charles M. Russell National Wildlife Refuge, Lewistown, MT

8.0 List of Agencies, Organizations, and Persons Contacted

USGS Fort Collins Science Center, Dr. Dean Biggins  
 USGS National Wildlife Health Center, Dr. Tonie Rocke  
 Montana Department of Fish Wildlife and Parks, Lauri Hanuska-Brown  
 Colorado Parks and Wildlife, Cr. Mike Miller and Dan Tripp  
 World Wildlife Fund, Kristy Bly