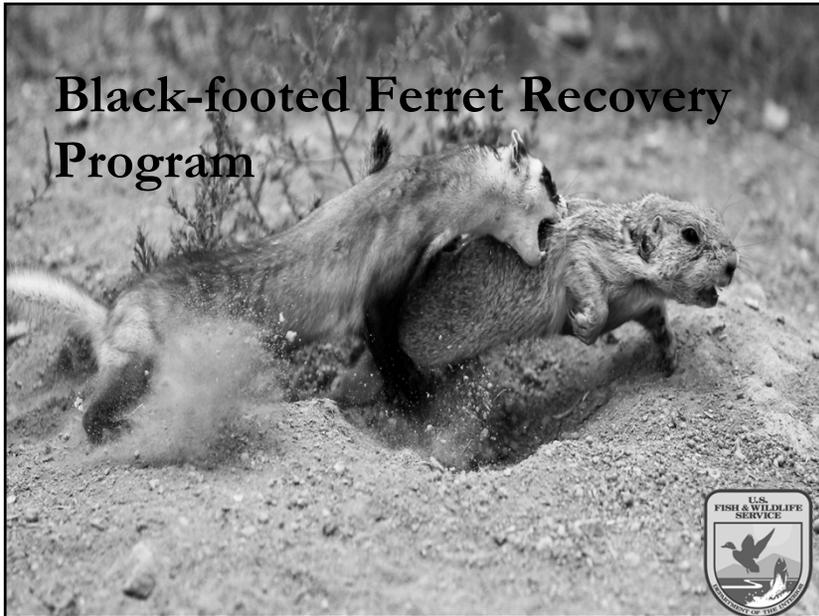


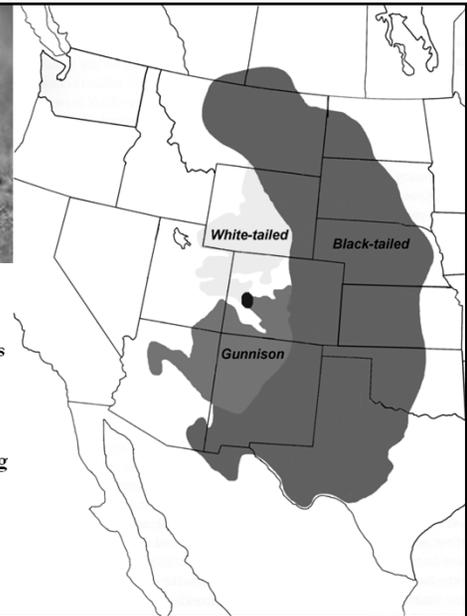
## Black-footed Ferret Recovery Program



## Partners & Participants



- **Federal Agencies** (FWS, USGS, USFS, BLM, NPS, NRCS, APHIS, US Army, BIA)
- **States** (AZ, CO, KS, MT, NM, SD, UT, WY)
- **Local Governments** (Fort Collins, Boulder County)
- **Foreign Governments** (Canada, Mexico)
- **Tribes** (Cheyenne River Sioux, Crow, Ft. Belknap, Lower Brule, Northern Cheyenne, Rosebud, Navajo)
- **NGOs** (Audubon, Colorado Cattlemen's Association, Defenders of Wildlife, NWF, Prairie Wildlife Research, Turner ESF, TNC, WWF)
- **Zoos** (FWS NBFFCC, Smithsonian, Louisville, Cheyenne Mountain, Phoenix, Toronto)
- **Private landowners** (AZ, CO, KS, NM, SD, WY)



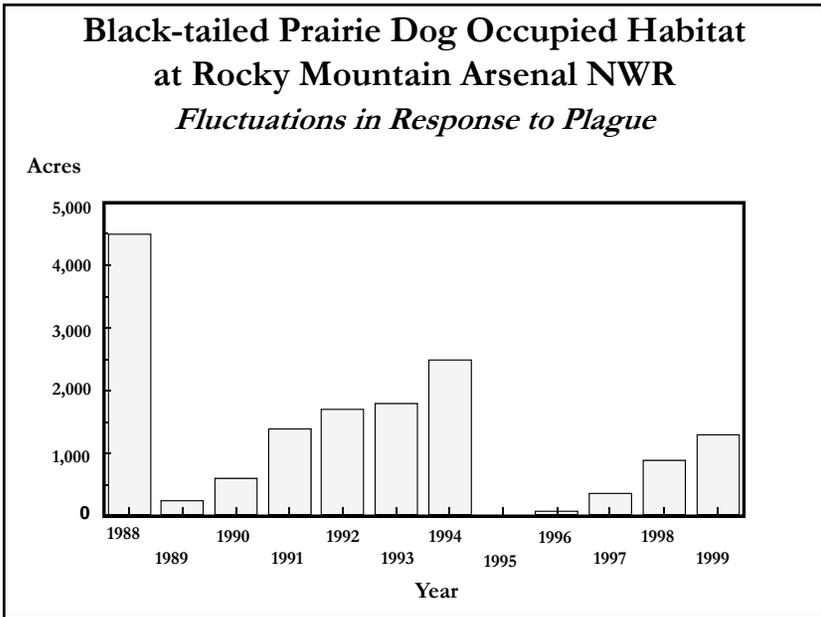
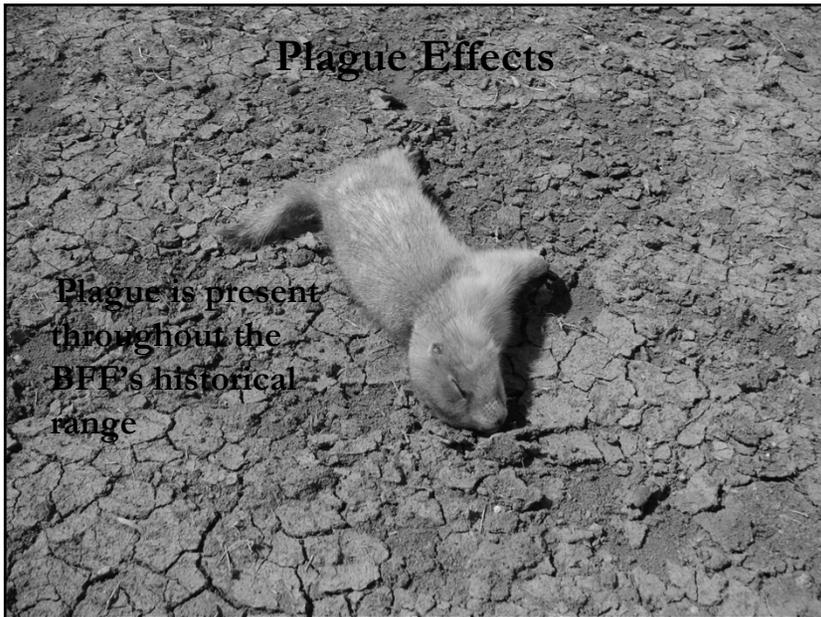
The historical range of the black-footed ferret coincided with ranges of the black-tailed, white-tailed, and Gunnison's prairie dogs. Approximately 85% of all ferrets occurred in black-tailed prairie dog habitat, 8% in Gunnison's, and 7% in white-tailed.

Historically, the black-footed ferret occupied an estimated 100 million acres of intermountain and prairie grasslands in the western U.S., Canada, and Mexico, within ~ 562 million acres of potential habitat. By 1987, there were no remaining wild ferrets.

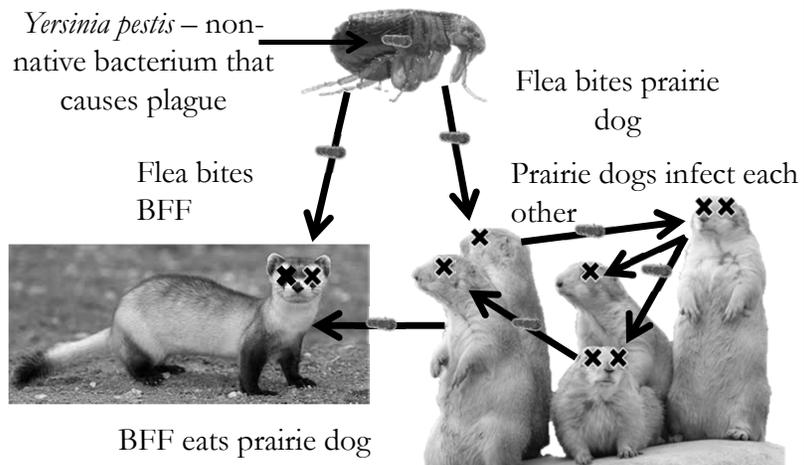


The decline of the black-footed ferret is tied to its close association with prairie dogs, which were dramatically reduced beginning in the late 1800s due to:

- Conversion of native rangeland to cropland (1880s – 1920s)
- Large-scale prairie dog poisoning campaigns (1918 – 1972)
- Unregulated recreational shooting (some instances; 1940s - present)
- Sylvatic plague (1930s – present)



## Plague Pathway



## Plague Considerations

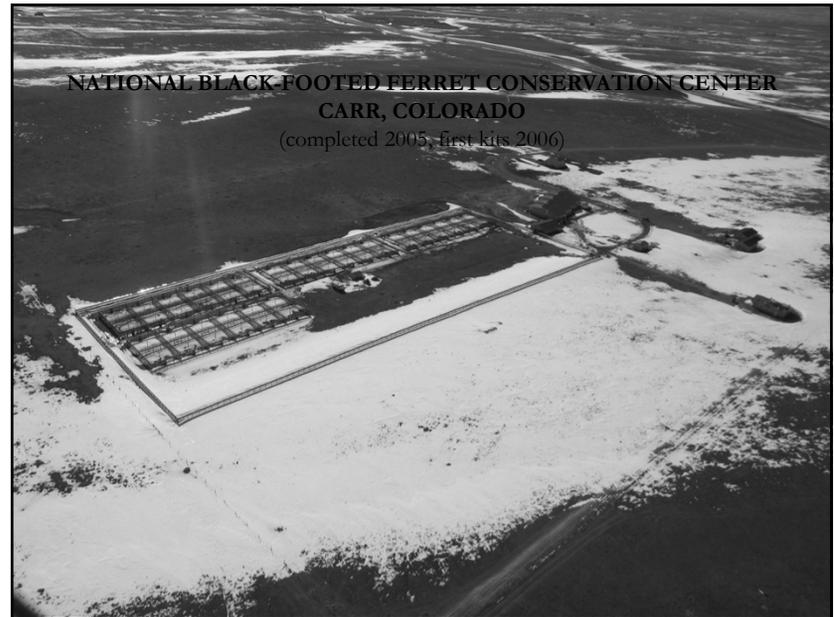
- Plague **directly** impacts ferrets via infection and subsequent mortality.
- Plague **indirectly** impacts ferrets via its effects on prairie dogs and subsequent dramatic declines in the ferret's primary prey base.
- Plague can be **managed** through ferret vaccination and vector control, but these approaches have limitations; an IPM strategy is needed.
- Oral sylvatic plague vaccine research trials and systemic flea control trials show promise; projects are currently being ramped up to the landscape scale.

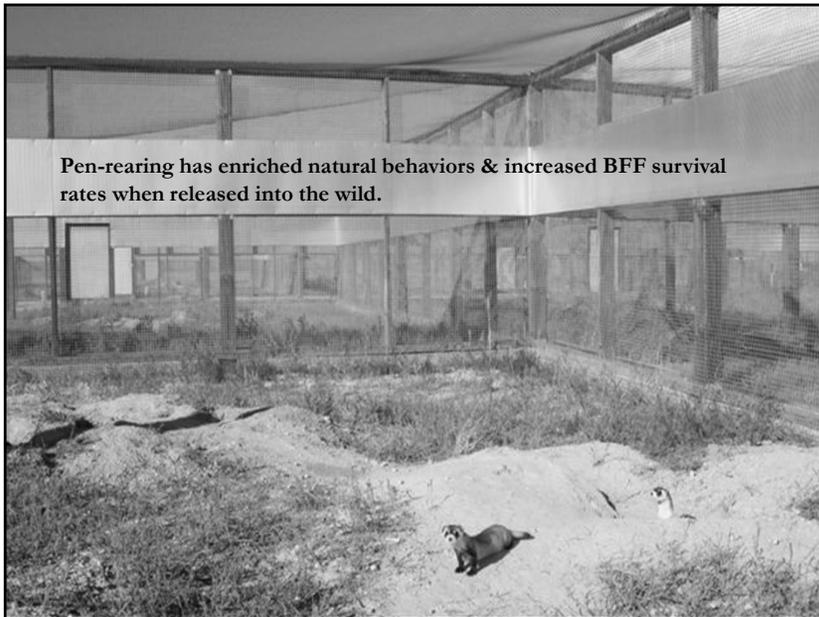
USGS  
science for a changing world

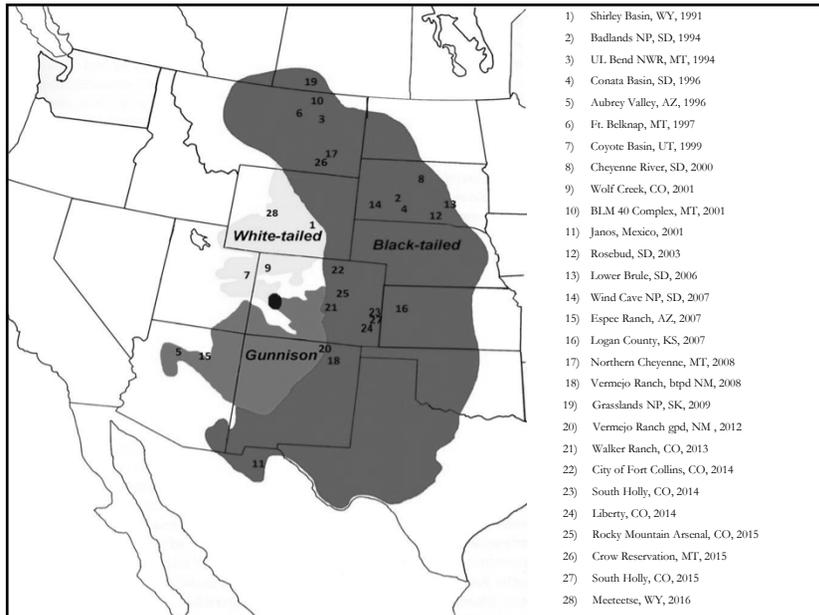
Captive breeding has been successful



NATIONAL BLACK-FOOTED FERRET CONSERVATION CENTER  
CARR, COLORADO  
(completed 2005; first kits 2006)

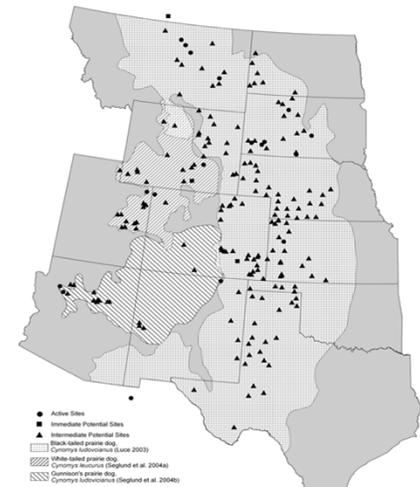






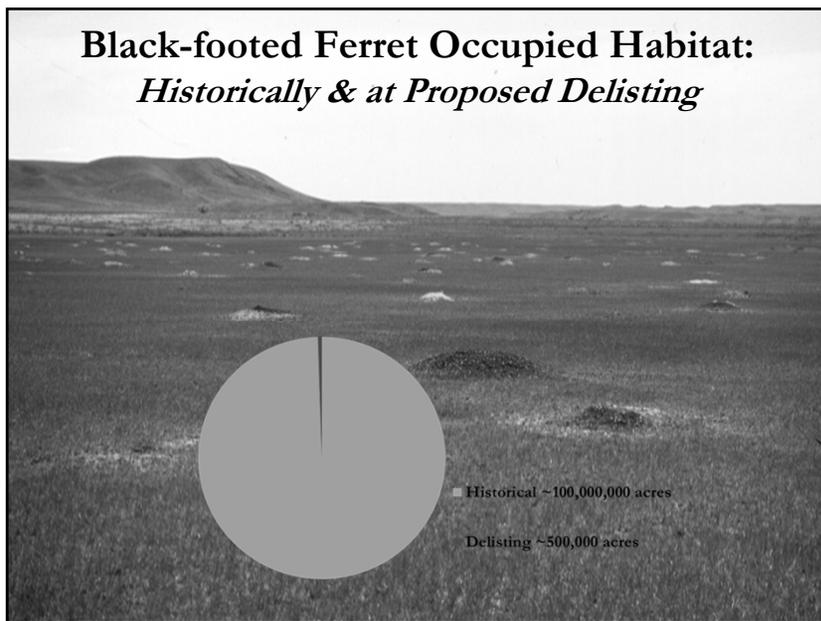
## Additional Release Sites are Needed:

Past planning efforts need to be revisited and expanded; need \$\$ for plague management



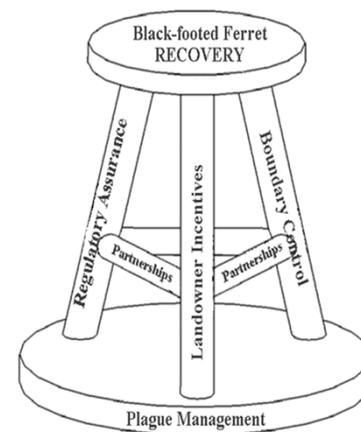
Locations of active, immediate potential, and intermediate potential black-footed ferret reintroduction sites (Luce 2008)

## Black-footed Ferret Occupied Habitat: *Historically & at Proposed Delisting*



## Management Challenges

- Regulatory assurances (Safe Harbor, 10j, and Section 7 approaches)
- Landowner incentives to increase tolerance of prairie dogs
- Boundary prairie dog control (where needed)
- Refinement and expansion of plague management efforts



- 
- The BFF Programmatic Safe Harbor Agreement (BFF PSHA) is a site-specific complement to experimental, non-essential population designations.
  - Provides regulatory assurances to non-federal landowners wishing to **voluntarily** conserve BFF.
  - Assumes a zero baseline for all enrolled properties and covers **all** agricultural activities except for cultivation of rangeland.
  - Site-specific reintroduction plans are developed with partner input; include designation of conservation and management zones and coordination with neighboring landowners, state agency personnel, and local government officials.
  - Landowners may withdraw at any time without penalty.
  - Automatic incidental take coverage for neighbors.

## BFF PSHA Implementation Status

- A total of 17 landowners have enrolled in the BFF PSHA since 2013, resulting in 9 new reintroduction sites (2 in AZ, 5 in CO, 1 in KS, 1 in MT).
- **In 2014, NRCS offered BFF incentives through its EQIP program for the first time:**
  - Required enrollment in the BFF PSHA
  - 52 applicants total (CO and MT)
  - 10 contracts approved in CO at \$24.93/ac. for 3 yrs.
  - **Key** to securing new BFF reintroduction sites
- Future incentive programs should be longer in term and available throughout the BFF range; plague management efforts need to keep up.

## Future Recovery Efforts

- Plague management is critical.
- Partners will need to be strategic in applying conservation efforts.
- Political hurdles preventing reintroduction efforts at some sites must be overcome.
- Incentives for private landowners and funding for boundary prairie dog control must be expanded.
- Complex size matters; smaller sites will likely require periodic augmentation.
- The ability to trap and translocate wild-born kits will be key to future reintroduction efforts.

1986, *Nature* (Robert May): "If such a mess can be made of efforts to save a creature as attractive as the black-footed ferret in a country as well organized and prosperous as the United States, prospects for conservation in other parts of the world are indeed bleak."



2008, IUCN Press Release: "The most comprehensive assessment of the world's mammals has confirmed an extinction crisis, with almost one in four at risk of disappearing forever .... but it is not all bad news. The assessment of the world's mammals shows that species can recover with concerted conservation efforts. The black-footed ferret moved from extinct in the wild to endangered after successful reintroductions into eight western states and Mexico from 1991-2008."