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.
Black-footed Ferret Decline

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

• Conversion of native range to cropland (1880s - 1920s)
• Large-scale prairie dog poisoning (1918 - 1972)
• Sylvatic plague (1940s - present)
• Unregulated recreational shooting (certain circumstances; 1960s – present)
Mellette County, SD 1964-1974

- First BFF population ever studied
- First gained ecological insights
- Presumed extinct in wild by 1974
- Black-tailed prairie dogs
Meeteetse, WY 1981-1987

- Gained first real data on population parameters
- Population peaked at 129 BFFs in 1984
- White-tailed prairie dogs
- Declined due to sylvatic plague
- Last 18 individuals captured for captive breeding
Captive breeding 1987-present

• Founder population of 7 animals
• Took considerable effort to produce enough kits to consider reintroductions back into the wild.
<table>
<thead>
<tr>
<th>STATE</th>
<th>Minimum # Breeding Adults Alive</th>
<th># Adults / # Acres Suggested to Downlist</th>
<th># Adults / # Acres Suggested to Delist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arizona</td>
<td>20</td>
<td>74 adults/17,000 ac</td>
<td>148 adults/34,000 ac</td>
</tr>
<tr>
<td>Colorado</td>
<td>57</td>
<td>149 adults/29,000 ac</td>
<td>288 adults/58,000 ac</td>
</tr>
<tr>
<td>Kansas</td>
<td>18</td>
<td>123 adults/18,500 ac</td>
<td>246 adults/37,000 ac</td>
</tr>
<tr>
<td>Montana</td>
<td>48</td>
<td>147 adults/22,000 ac</td>
<td>294 adults/44,000 ac</td>
</tr>
<tr>
<td>Nebraska</td>
<td>0</td>
<td>134 adults/20,000 ac</td>
<td>268 adults/40,000 ac</td>
</tr>
<tr>
<td>New Mexico</td>
<td>0</td>
<td>220 adults/39,000 ac</td>
<td>440 adults/78,000 ac</td>
</tr>
<tr>
<td>North Dakota</td>
<td>0</td>
<td>38 adults/6,000 ac</td>
<td>76 adults/12,000 ac</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>0</td>
<td>70 adults/10,500 ac</td>
<td>140 adults/21,000 ac</td>
</tr>
<tr>
<td>South Dakota</td>
<td>145</td>
<td>102 adults/15,000 ac</td>
<td>204 adults/30,000 ac</td>
</tr>
<tr>
<td>Texas</td>
<td>0</td>
<td>254 adults/38,000 ac</td>
<td>508 adults/76,000 ac</td>
</tr>
<tr>
<td>Utah</td>
<td>10</td>
<td>25 adults/6,000 ac</td>
<td>50 adults/12,000 ac</td>
</tr>
<tr>
<td>Wyoming</td>
<td>72</td>
<td>171 adults/35,000 ac</td>
<td>342 adults/70,000 ac</td>
</tr>
<tr>
<td>Total</td>
<td>370</td>
<td>1,507 adults/256,000 ac</td>
<td>3,004 adults/512,000 ac</td>
</tr>
</tbody>
</table>
Plague Pathway

*Yersinia pestis* – non-native bacterium that causes plague

Flea bites BFF

Flea bites prairie dog

Prairie dogs infect each other

BFF eats prairie dog
Plague Management Options

- Initiate more reintroduction sites to enhance risk management options - ongoing
- Dusting prairie dog burrows with deltamethrin – ongoing
- Exploring use of different products, Fiprolo nil
- USGS is conducting research & development of vaccines to prevent plague in prairie dogs and ferrets.
  - Vaccinate ferrets directly – Ongoing
  - Vaccinate prairie dogs via oral bait – Field testing studies
BLACK-FOOTED FERRET REINTRODUCTION SITES

INITIAL RELEASE # (YEAR)

2. Badlands NP, SD (1994)
3. UL Bend NWR, MT (1994)
8. Cheyenne River Reservation, SD (2000)
9. Wolf Creek, CO (2001)
10. BLM 40-Complex, MT (2001)
13. Lower Brule Reservation, SD (2006)
14. Wind Cave NP, SD (2007)
16. Logan County, KS (2007)
17. Northern Cheyenne Reservation, MT (2008)
19. Grasslands NP, SK, Canada (2009)
22. Sopastone Complex, CO (2014)
24. Liberty Complex, CO (2014)
27. South Holly Complex, CO (2015)
29. Bad River Ranch, SD (2017)
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 KS, 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)
Ferret Reintroduction Efforts in South Dakota

Conata Basin Badlands 1994-96
Cheyenne River Sioux Tribe 2000
Wind Cave 2007
Bad River Ranch 2017
Rosebud Sioux Tribe 2004
Lower Brule Sioux Tribe 2006
The state’s role....
Responsibility and Authority

• Endangered And Threatened Species (SDCL 34A-8A)
  • State Endangered
    • “The Department of Game, Fish and Parks and the Department of Agriculture shall perform those acts necessary for the conservation, management, protection, restoration, and propagation of endangered, threatened, and nongame species of wildlife.”
  • Status review of endangered and threatened species
    • Cooperate with USFWS in meeting down-listing and delisting goals as identified in the federal recovery plan (2013)
    • If federally down-listed or delisted, we will reevaluate state listing status
Responsibility and Authority

• Section 6 of the Endangered Species Act
  • Agreement to cooperate in the conservation and recovery of listed species (1977 to present)
    • Work with the USFWS in meeting down listing and delisting goals
    • Share information
  • Funding
    • Disease research to assess risk pre and post-Conata Basin reintroduction; 6 years of research in 1990’s
    • Monitor SD’s first reintroduced population via radio-telemetry
Conservation Actions

- Relationships
- Partnerships
- Reintroductions
Conservation Actions - Relationships

- Extensive public involvement
  - “I have nothing against ferrets...”
  - Ferrets need prairie dogs
  - Finding places that had enough prairie dogs
- Neighboring Landowners
  - Unwanted ferrets
  - Unwanted prairie dogs
  - Public to private land encroachment-SDGFP
  - Private to private land encroachment-SD Dept. of Ag.
Conservation Actions - Partnerships

- Black-footed Ferret Recovery Implementation Team
  - National
  - State
- Conata coordination meetings (>25 years)
  - FS, NPS, SDGFP, Prairie Wildlife Research, USGS, additional NGOs
- Prairie Dog Conservation Team
  - Multi-state conservation planning
  - WAFWA
### Conservation Actions - Reintroductions

<table>
<thead>
<tr>
<th>Reintroduction Site</th>
<th>Year</th>
<th>Current Ferret Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Badlands NP</td>
<td>1994</td>
<td>➢ 50</td>
</tr>
<tr>
<td>Buffalo Gap NG</td>
<td>1996</td>
<td>➢ 64</td>
</tr>
<tr>
<td>Cheyenne River</td>
<td>2000</td>
<td>➢ 3</td>
</tr>
<tr>
<td>Rosebud</td>
<td>2003</td>
<td>➢ 5</td>
</tr>
<tr>
<td>Lower Brule</td>
<td>2006</td>
<td>➢ 5</td>
</tr>
<tr>
<td>Wind Cave NP</td>
<td>2007</td>
<td>➢ 30</td>
</tr>
<tr>
<td><strong>Bad River Ranch</strong></td>
<td>2017</td>
<td>➢ ----</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>157</strong></td>
</tr>
</tbody>
</table>
Conservation Actions-Bad River Ranches

- First reintroduction on private land in SD
- Safe Harbor Agreement
  - encourage non-federal landowners to voluntarily engage in conservation activities to benefit and advance recovery of TE species
  - withdraw at any time without penalty
  - provide regulatory assurances and flexibility
  - neighbors are protected
- Bad River Ranches
Black-footed Ferret Reintroduction Project at Bad River Ranches, SD 1999-2018
• 141,000 acre property
• Largest private landholding in Stanley and Jones counties and within South Dakota
• Largest bison operation in North America
- 8,400 acres of farmland returned to grassland; 260 acres of wildlife food plots maintained
- All 38 river miles of Bad River are fenced off; uplands and tributaries managed to limit sedimentation in Lake Sharpe
Bad River Ranches Prairie Dog Colonies

1999
670 acres

2011
3,253 acres
Ash Creek Recovery Area

1999
125 acres

2011
1,600 acres
2009-2011

- “Wild pre-conditioning” releases
- Would not contribute to Federal recovery objectives for species
- 37 ferrets released / 17 recaptured
Dusted prairie burrows with Deltamethrin which kills fleas and disrupts the plague cycle
2017 Ferret release with intention to contribute to Federal recovery objectives for species
2017

Applied Sylvatic Plague Vaccine (SPV) to prairie dog colonies
• By early summer 2018 it became apparent plague once again had moved into the ferret release colonies.
• It is unclear why the SPV did not prevent or even limit the epizootic.
• All areas treated with the SPV plagued out while those areas we dusted with Deltamethrin persist.