Black-tailed prairie dog & Black-footed Ferret Recovery in Canada

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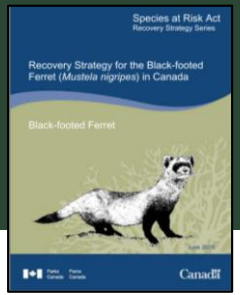
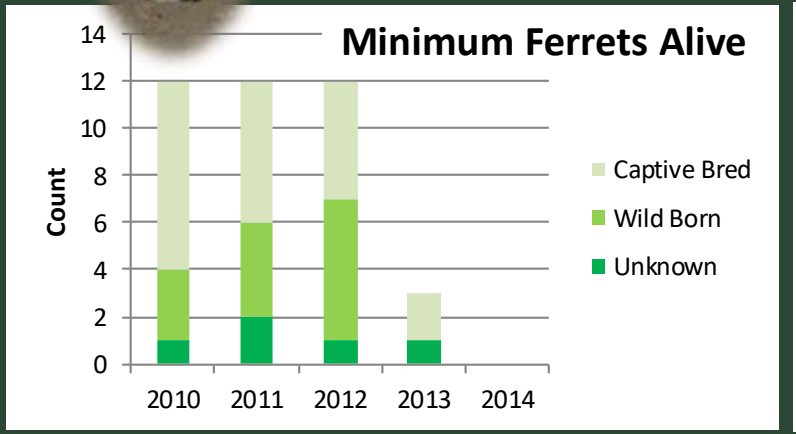
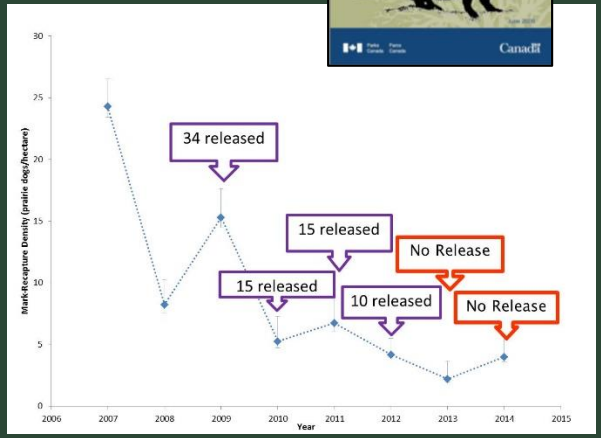
BFF Recovery (2009-2015)

No BFF detected in GNP since 2013



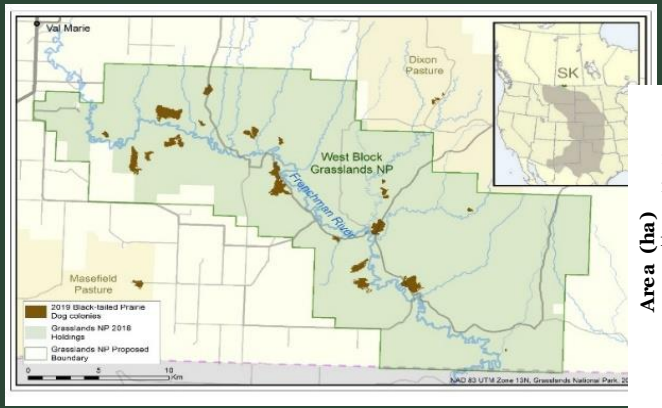


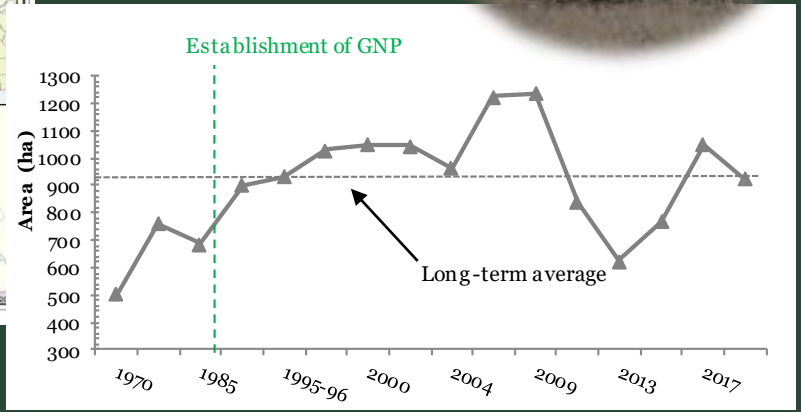


Recovery feasibility has not changed (yet)
Work on BTPD conservation management will help inform BFF recovery

Black-tailed Prairie Dog Conservation Status

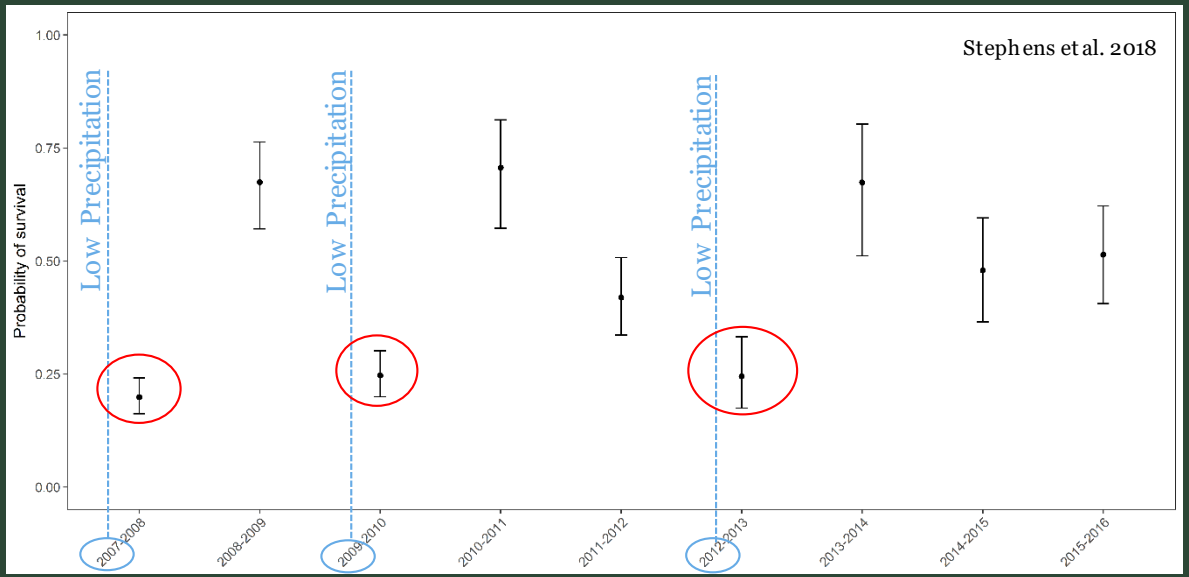
- Species up-listed (Threatened) by SARA in 2018
- 18 of 20 colonies (~95% habitat) are within Grasslands NP
- active colony area =~ 900 ha; average density ~ 15-25 ind./ha
- No active management outside GNP





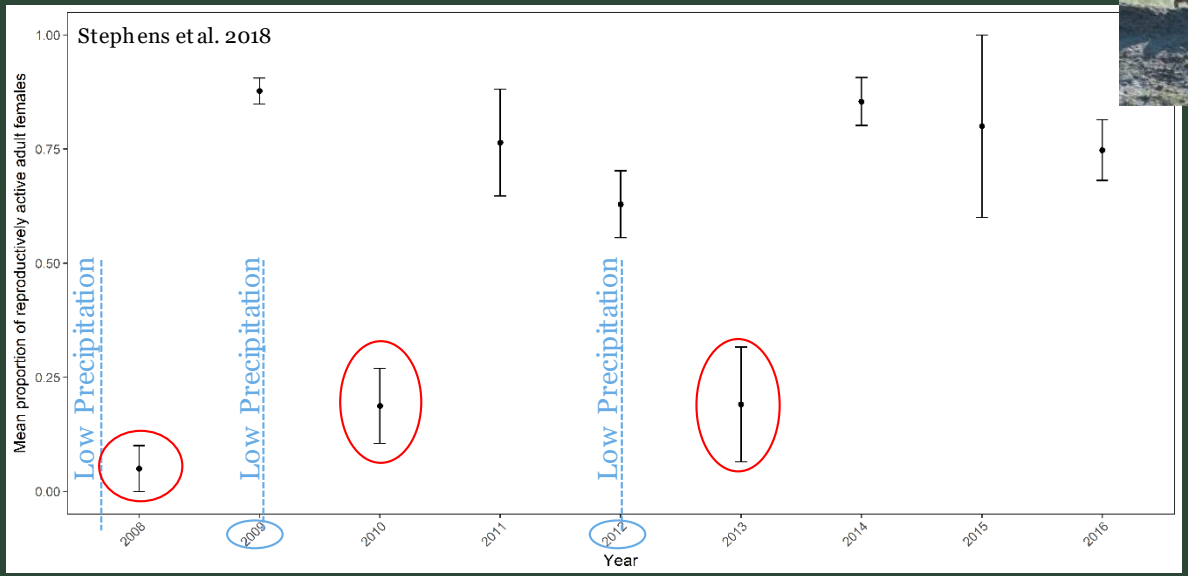
Drivers of BTPD population dynamics

- **Survival** likely limited by:
- Low precipitation → limited resource availability
- Winter severity ?



Drivers of BTPD population dynamics

- **Reproduction** likely limited by:
- Low precipitation → limited resource availability
- Winter severity ?



Sylvatic Plague

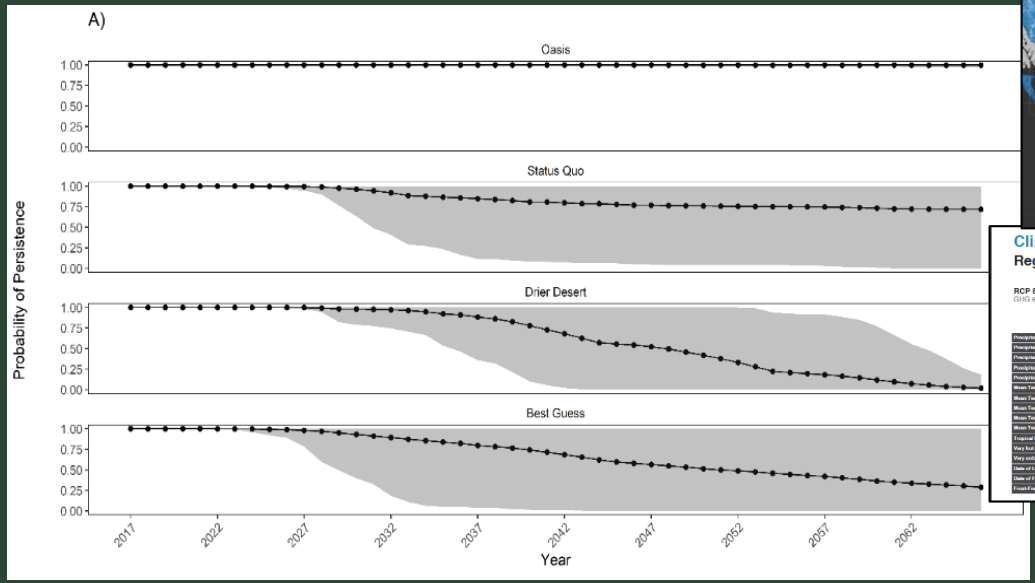
- Recent evidence suggests sylvatic plague is enzootic in Grasslands NP (Liccioli et al 2020)
- Relatively narrow window of flea and plague activity - no confirmed outbreak
- Warming change can shift vector distribution/activity and disease dynamics
- Recent plague outbreaks in UL Bend suggest things may change quickly

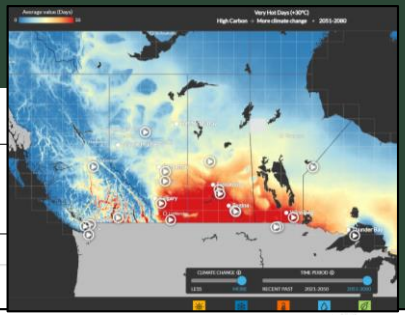
In a nutshell

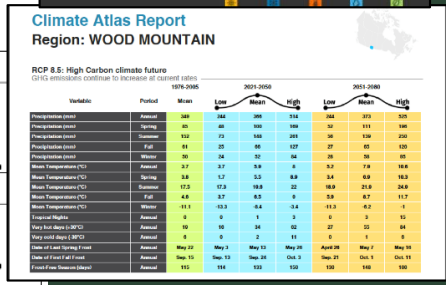
- Canada is amongst the smallest, most isolated and fragmented BTPD population
- Current area of occupancy is in line with 20+ year average
- Densities are in line with 20+ year average, and lower than elsewhere in BTPD range
- Drought is a key limiting factor to population dynamics
- Current threats (drought & plague) are projected to increase with climate change
- No support from ranchers to conservation management of the species

Climate and Probability of Persistence

- Keep rates of plague outbreak low, see what are the impacts of climate

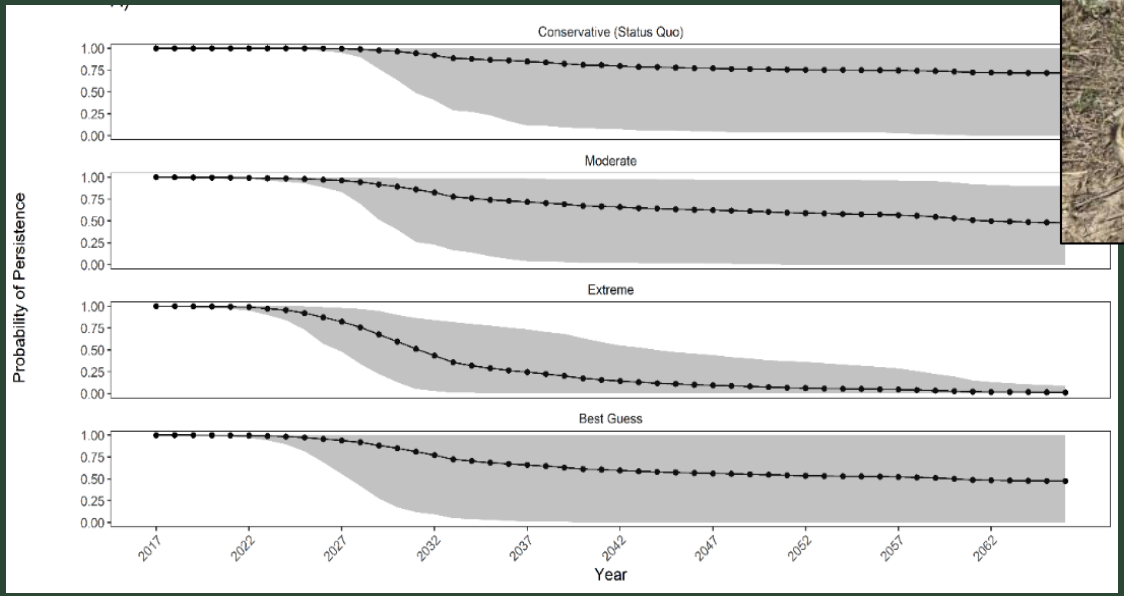




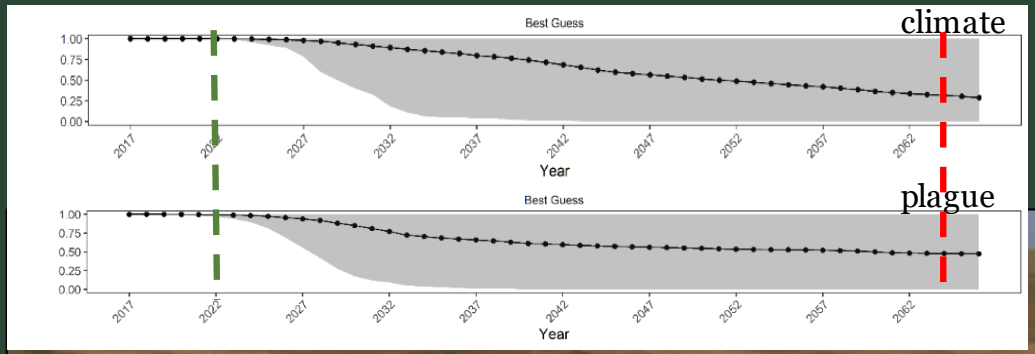


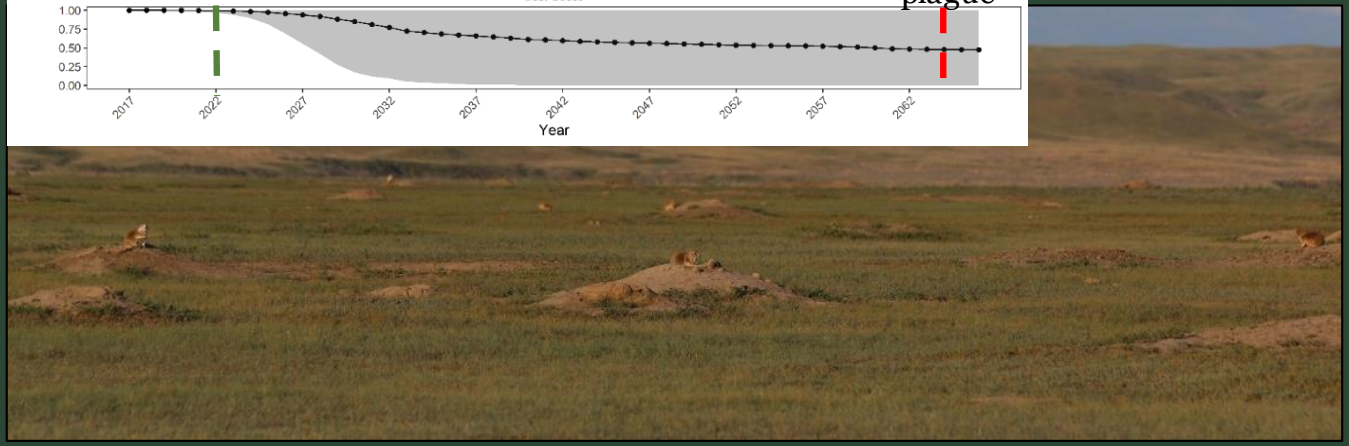
Plague and Probability of Persistence

- "Best guess" climate scenario, see what different rates of plague outbreaks do



- Little concern for the extirpation of the species in the immediate future (i.e. ~ 10 years).
- Relatively high chance of species extirpation in the next 50 years without any additional mitigation measures.

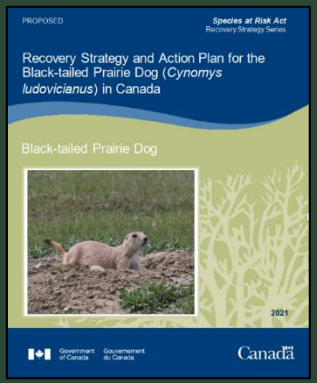


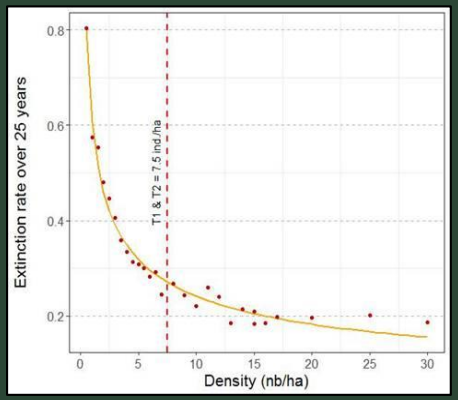


Population & Distribution Objectives

To ensure, by 2040, at least 80% probability of persistence of the Canadian Black-tailed Prairie Dog population over 50 years (i.e., 2040-2090) within its known range in Canada, and maintain:

i. a minimum area of occupancy of 1,400 ha
ii. a minimum average population density of 7.5 individuals/ha





To meet the PDO, one or more of the following broad recovery actions will be implemented:

- Minimize the risk of a plague outbreak by implementing different strategies for plague management
- Restore and/or establish up to 600 ha (total 2,000 ha) of BTPD colonies in Grasslands National Park
- Conduct population management (e.g., captive breeding, conservation translocation, supplemental feeding), should these measures be necessary and effective for species survival and recovery.

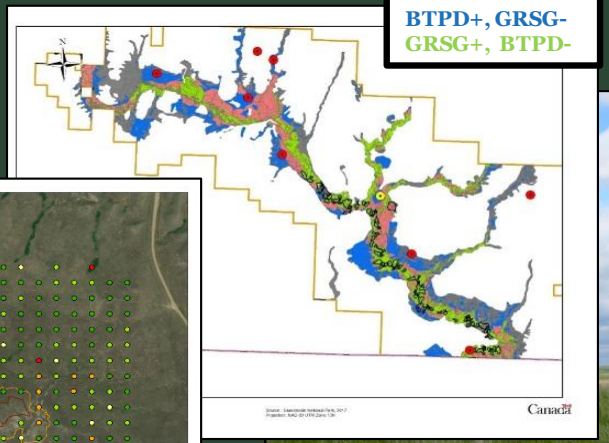
Intended approach

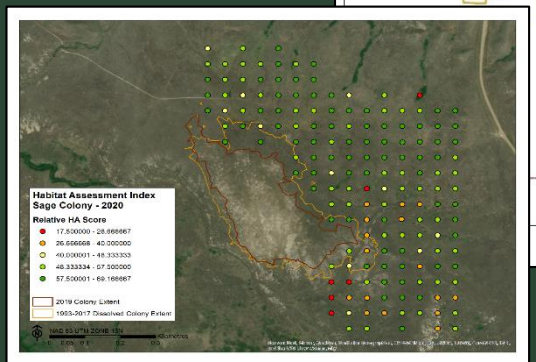
- Proposed PDO is meant to deal with uncertainty, while providing "good" Probability of Persistence (e.g., >80%) over 50 years, to be achieved through different management options
- The combination and relative contribution of different management options (e.g., plague mitigation, habitat management/restoration, supplemental feeding) will be assessed through the PVA framework and upon evaluation of their feasibility
- Established target (1,400 – 2,000 ha) will help re-assess long-term feasibility of BFF recovery

BTPD Habitat Suitability & Colony expansion

- Previous work identified areas suitable for BTPD habitat enhancement/creation based on abiotic factors
- Development of BTPD Habitat Suitability Index to include biotic factors
- Help select translocation and colony creation sites
- Consider multi-SAR objectives
- Increase population resilience

Thorpe & Stephens 2018





BTPD Recovery & Population management

- Developing a conflict mitigation plan outside GNP/Critical Habitat with ranchers and Province of SK
- Build on 2020 conflict mitigation translocations
  - *26 individuals translocated August 2020*
  - *16 (61.5%) on site October 1st 2020*
  - *7 (26.9%) on site/alive March 1st 2021*
- Stepping stone toward BFF recovery?
- Despite these efforts, stakeholders opposition continues

Questions *for* you

Can we still provide support to BFF recovery?

- *Lower BTPD densities but relatively "low" plague activity (for now)*
- *Experimental site for applied management questions?*
- *Value of a (very) small BFF population (e.g., < 30) ?*

Can the BFF recovery framework in US provide "support" to BTPD/BFF recovery in Canada?

Supplemental Information

Paul Boyce

BTPD Conflict Management

- Available knowledge and expertise
  - GNP Mitigation translocations
    - 26 individuals translocated August 2020
    - 16 (61.5%) on site October 1st 2020, 7 (26.9%) on site/alive March 1st 2021
    - Can help achieve PDO
  - U.S. partners (USFWS, USDA, WWF)
    - Physical/visual barriers
    - Vegetation Management
- Need for coordinated approach (PCA, SK and ECCC)
  - Specific case within the larger SOD/CH protection framework

Parks Canada & Calgary Zoo

Courtesy: USDA

Examples of BTPD Conflict Management to help achieve PDOs

1. Relocate colonizing BTPD to selected sites in GNP
2. "Zoning" for BTPD conflict management on CH outside GNP; e.g:
   A. Critical Habitat (e.g., habitat protection, natural expansion of BTPD can occur)
   B. Containment: individuals could be trapped and relocated (e.g., to GNP)
   C. No tolerance: lethal removal
3. Test barriers (including vegetation management) in sites of reoccurring colonization
4. Permit lethal removal if not effective/timely/feasible