ARCTIC FOXES

The arctic fox (Vulpes lagopus) is a critically endangered species in Fennoscandia. Conservation efforts in Norway include a Captive Breeding and Release Programme, supplemental feeding and a National Monitoring Programme, all led by the Norwegian Institute for Nature Research (NINA). Biomark PIT tag equipment is specifically used to monitor captive-bred and released arctic foxes. The Norwegian programs work closely with fellow conservation groups.

Project Summary

Application description:
Individual identification for captive breeding program and remote monitoring of feeding stations and den sites.

Species:
Arctic fox (Vulpes lagopus).

Location:
The breeding station is situated high on a mountain top outside of Oppdal, Norway.

Products Used:

Project Partners:
Norwegian Institute for Nature Research (NINA).

Funding Organizations:

Every fox kit born at the station is tagged with a GPT12 PLS PIT tag. Ear tags are easily lost and white foxes look alike! These chips ensure that the program knows the identity of each fox. Individual identity is especially important when planning future breeding pairs and release locations to ensure that the populations maintain adequate genetic variation.

At the breeding station the program uses handheld microchip readers to identify individuals during handling. A new system incorporating the IS1001 readers will be installed in the enclosures with access to the BioLogic software and web portal (starting summer 2019). This will facilitate better hands-off surveillance of the foxes in the enclosures.

In the wild, foxes released with PIT tags often encounter the readers (e.g. HPR Plus and FS2001 models) at the supplemental feeding stations. The readers are set in the entrance barrel, and the foxes are detected as they go in to eat.
The breeding and release of arctic foxes has been so successful in parts of Norway that the program has started an experiment where the supplemental feeding has been stopped in parts of the Snøhetta/Dovrefjell mountain area to see if the population can survive on its own. Biomark readers are an important part of monitoring the population during this time. The program uses custom antennas laid outside of den sites to monitor the arctic fox presence and movements.

More about the arctic fox breeding program:
The Norwegian arctic fox breeding program was established in 2004 and is the only one of its kind in the world. The breeding station is situated high on a mountain top outside of Oppdal, Norway. The foxes are kept in outdoor enclosures set on mountain habitat. The combination of these natural conditions and minimal handling/human interaction have made breeding at the station very successful. Since 2006, over 472 pups have been bred at the station, and 414 arctic foxes have been released into the wild.

The breeding program and other conservation efforts have contributed to the increase in the arctic fox population from less than 50 adults in 2000 to over 300 adults in Scandinavia today. However, the species continues to face challenges. Red fox (Vulpes vulpes) are both competitors and predators of their smaller cousin, the arctic fox. Other predators, such as golden eagles (Aquila chrysaetos), are also abundant. Perhaps most importantly, the arctic fox's main food source, the lemming (Lemmus lemmus), has been experiencing erratic cycling and population crashes in the past years. Lack of a reliable source of food could be a limiting factor for the arctic fox population growth in the future.

Additional Information/Links:
To watch the arctic foxes live, follow this link to the program's «Fjellrev TV»! Links to the cameras at the station are at the bottom of the page.
https://www.nina.no/V%C3%A5re-fagomr%C3%A5der/Arter/Fjellrev/Avlsprogrammet-for-fjellrev
To learn more about the program and its partners, follow these links:

- [https://www.nina.no/english/Fields-of-research/The-Arctic-fox](https://www.nina.no/english/Fields-of-research/The-Arctic-fox)
- [https://www.miljodirektoratet.no/globalassets/publikasjoner/M460/M460.pdf](https://www.miljodirektoratet.no/globalassets/publikasjoner/M460/M460.pdf)
- [http://www.fellesfjellrev.se/english/](http://www.fellesfjellrev.se/english/)

To learn more about arctic fox conservation and research in Fennoscandia see these sample articles:

