

Can we save the arctic fox?

Strategies for conservation

Introduction:

Amidst the expansive and rugged landscapes of Norway and mainland Fennoscandia, the arctic fox wanders, deeply connected to the delicate balance of its environment. With over 157 100 species on the IUCN Red List, and more than 44 000 species facing extinction, the preservation of biodiversity has never been more critical (IUCN, 2023). Among these threatened species is the arctic fox, whose population in Norway and mainland Fennoscandia remains small and highly fragmented (NINA, n.d.). Since its protection in 1930 due to extensive hunting, the arctic fox has struggled to recover to viable levels, leading to its classification as endangered on the national red list (Eldegard et al., 2021). Now, facing a time of rapid climate change, will they have suitable land areas to return to for their livelihood?

Our choice to explore this topic is motivated by the need to unravel the complex factors driving its endangerment. Despite targeted conservation measures leading to improvements in some areas, the threat of climate change casts a shadow over the sustainability of current population management efforts (Eide, 2021). As we navigate these issues, a central question emerges: Will our efforts be enough to ensure the survival of the arctic fox in the face of mounting challenges, or are we fighting a losing battle?

Main causes and consequences:

The main causes affecting the arctic fox are varied and complex. Climate change stands as a driving force, not only disrupting prey availability but also directly impacting biodiversity. The lemming population for instance has been decreasing since the 1980s due to the mild climate, which is melting the snow and diminishing winter habitats that are crucial for lemming populations. This is leading to a decline in the arctic fox natural diet (Miljødirektoratet, 2024). As a result, there is an increasing competition between the different species for limited resources, which is further affecting the Arctic fox's survival chances.

Beyond climate related challenges, human activities such as hunting, trapping and road collisions pose significant threats to the arctic fox populations. Historically, high hunting pressure and trapping during the 19th and early 20th centuries caused the arctic fox numbers to decrease rapidly (Eldegard et al., 2021). Although protective measures have been applied, changes in rodent dynamics and increasing numbers of red foxes have hindered population recovery efforts. (NINA, n.d.). Addressing these

challenges requires habitat conservation, mitigating climate change, and sustainable management practices.

Conservation efforts focusing on breeding programs:

The challenges facing arctic fox populations illustrate the complex interplay between nature and human activities. This underscores the pressing need to safeguard them through proactive conservation measures. Preserving the Norwegian arctic fox holds significant relevance for numerous of UN's Sustainable Development Goal 15 targets. The targets concerning conservation and restoration, sustainable ecosystem use, alpine ecosystems, threatened species, and biodiversity, are key for ensuring the sustainable management of arctic fox populations and their habitats (The Global Goals, n.d.).

Being listed on the red list highlights the urgency of protecting this species. In addition to legal protection, breeding programs have been established to strengthen decreasing populations. These programs aim to restore and reinforce arctic fox sub stocks through controlled breeding and release into suitable habitats. Moreover, the implementation of a national population monitoring program in 2003 has been vital in tracking population trends and identifying areas for targeted conservation action. By continuing to monitor populations, implementing breeding programs, and enforcing protective measures against hunting, there remains hope for long term conservation of the arctic fox in Norway (Landa, 2005). The Norwegian arctic fox populations are on a rising trend, and with the help of conservation efforts, 2018 was recorded as the year with most litters since the monitoring started in 2003, and in 2022 there were even more litters recorded (Fremstad, 2019).

Initiated in 2005 by the Norwegian Environment Agency, the arctic fox breeding program is aimed to conserve the critically endangered arctic fox population in Norway. Operating from the Sæterfjellet breeding station in Oppdal, the program utilizes eight large, fenced areas within the natural habitat of the arctic fox. (Ulvund, 2021). Since its inception, the breeding program has successfully released 434 arctic fox puppies into nine different mountain regions across Norway. Notably, the program has contributed to the restoration and reinforcement of various arctic fox sub stocks. In 2020 alone, 43 arctic fox litters were recorded, with half of them occurring in areas where species has faced local extinction (Ulvund, 2021).

To enhance establishment and reproduction success, the breeding program annually microchips puppies across nine selected mountain areas. However, this process involves interfering with the population, and there has therefore been a shift towards DNA- based mapping methods. These methods use fecal samples collected from the area where the populations live. With the use of wild cameras, they can also be able to map out the litter sizes in a selected area where they usually let them

out (Ulvund, 2021). By 2023, the population had reached approximately 330 individuals, with 39 arctic fox litters recorded. This increase is primarily to the success of breeding programs, alongside supplementary measures such as the provision of food stations and the removal of red foxes from targeted areas. These efforts highlight the measurable effect of breeding programs in strengthening the arctic fox population and fostering conservation efforts (Miljødirektoratet, 2024).

Our perspective:

Looking at all the efforts poured into boosting the arctic fox population, we wonder: will it be enough to ensure a strong and self-sustainable population in Fennoscandia? Or are we simply too late to make a difference? The reality of climate change adds urgency to our concerns. We can't predict the outcomes from the climate changes in 50 years, but we know it will affect Norwegian wildlife and the habitats of arctic foxes. However, there's hope in our ongoing efforts to raise awareness and protect endangered species. If we continuously reach towards FN's climate goals, and maintain them, we might be able to stabilize the environment, securing habitats for these foxes.

The breeding program has been vital in contributing to build up a livable stock. In our perspective, these programs are promising approaches in bolstering the arctic fox population and should be continued as a part of broader conservation efforts. However, it is important to note that the future of these programs depends on how climate change alters ecosystems. If we can't maintain a balance and the ecosystems change so drastically that there's no habitat suitable for the arctic fox, the purpose of the breeding program will no longer be sustainable. Despite the challenges, the arctic fox population is on the rise. A reason behind this can be the generational shift toward heightened environmental awareness and action. This shift underscores our collective dedication to preserve the natural world for our generation and those to come.

Conclusion:

We believe there is hope that our conservation efforts could be enough to ensure the survival of this species. But without conservation efforts and trying to reach the climate goals, the survival of the arctic fox might come to an end. The arctic fox faces many challenges, and there are numerous factors that need to align for the arctic fox to thrive in Fennoscandia in the future. However, amidst these challenges, the resilience of the arctic fox and the dedication of conservations offer a beacon of hope. With continued collaboration and unwavering commitment, we can work towards securing a brighter future for these remarkable creatures and the ecosystems they inhabit.

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