Lynxes and vultures offer insights for European wildlife conservation

October 5 2023, by Vedrana Simičević

An endangered species, lynx populations are still shrinking in some European countries and regions. Credit: CC0 via Unsplash

EU research is providing the most far-reaching analysis of efforts to boost wild-cat populations and aiding scavengers that help balance the ecosystem.

Anybody wondering about the hands-on challenges of wildlife

conservation in Europe should consider a recent tale. It involves a wild cat, tracking signals and an eye-opening journey.

In spring 2023, environmentalists captured an adult male lynx in Romania's Carpathian Mountains and released it in a Croatian national park called Plitvice Lakes. The move was part of an effort to increase the genetic diversity an endangered lynx population in Croatia and Slovenia.

New homes

The lynx, which had a telemetry tracking collar, spent several weeks trying to establish his new territory. He first ventured eastward to the border with Bosnia and Herzegovina, then traveled more than 100 kilometers to the opposite side of Croatia near the border with Slovenia and finally—and hesitantly—returned to Plitvice to settle there.

Dr. Miha Krofel, a wildlife-management expert from Slovenia, is seeking to build on such nail-biting successes as head of a research project that received EU funding to improve knowledge about lynxes' behavior after their release. Called LYNXONTHEMOVE, the project runs for two years through September 2024.

"We are trying to understand the most important factors that influence the decision whether the animal would stay in a location of release or move to another area," said Krofel, who is an assistant professor at the Biotechnical Faculty of the University of Ljubljana.

While conservation efforts of this kind have shown growing success over the past two decades, the six-month survival rate of relocated carnivores is still only 66%, according to recent research. And just 37% of animals actually show reproductive behavior.

In some cases, relocated animals simply move far from the designated area.

Troubling trends

Lynxes are among the most endangered species amid widespread warnings that the world is undergoing a sixth mass extinction 65 million years after the fifth one killed off dinosaurs. Unlike the five previous die-offs, the current mass extinction is driven primarily by human activity.

Lynxes have excellent eyesight and hearing, making them skilled hunters.

Yet, as a result of extensive hunting, inbreeding, habitat loss and lack of prey, lynx populations in some parts of Europe vanished at the start of the 20th century. In Croatia and Slovenia, for example, until recently only between 100 and 150 animals remained.

Although conservation efforts since the 1970s have helped reverse the overall trend, lynx populations in some countries and regions in Europe are still shrinking.

"Generally, numbers are slowly increasing," said Krofel. "But in some places populations are still declining—for example in Austria, North Macedonia or in mountain areas in France."

He has teamed up with a Spanish ecologist named Dr. Mariano Rodríguez Recio from Rey Juan Carlos University in Spain.

They're focusing on data from existing reintroduction programs for the Iberian lynx in Spain and Eurasian lynx in Croatia and Slovenia. Using that information, the two researchers will analyze a variety of factors related to released animals' behavior.

Release methods

These medium-sized wild cats, notoriously difficult to spot in nature because of their speed, camouflage and tendency to be active mainly at night, are easier to reintroduce than some other carnivores like wolves or bears.

Still, success depends on tricky questions such as the method of release. An animal can be let go directly from the transport box or first placed in an "introductory" enclosure.

Environmental factors like forest cover, elevation and topography can also influence the animal's movements and determine the success of the whole operation.

In addition, the LYNXONTHEMOVE team will assess the impact of human infrastructure. Highways, for example, are major barriers for animals, whereas gravel roads are frequented by lynxes to scout out information and communicate with one another.

"They use gravel roads as a sort of information channel, almost like their Facebook," said Krofel.

Turf battles

Intraspecies interactions may play a further crucial role, according to scientists.

A male lynx, for example, could abandon an area where another male has already established territory and a female lynx might do the same if she senses an earlier female arrival.

The researchers will focus on the presence of other animals in a targeted area, adding to information that has been relatively scarce to date.

The team's main data sources are cameras with infrared sensors and telemetry collars attached to every released animal and to a number of other lynxes.

With the help of Recio's expertise, the project is using cutting-edge analysis and simulations of the movements of animals to predict their behavior in a particular area depending on environmental factors.

The researchers expect the result to be the most comprehensive analysis ever conducted of lynx relocation efforts.

"Our results should give a better idea to conservation project managers to make a crucial decision: which are the best locations to release the animals and how to do it?" said Krofel.

Endangered birds

Vultures are another species having a rough time as biodiversity declines.

Dr. Sara Asu Schroer, a postdoctoral research fellow at the University of Oslo in Norway, leads an EU-funded research project studying these scavengers from a social-sciences perspective.

Schroer is tackling the issue from the viewpoint of environmental anthropology, investigating how wildlife management occurs within historical and cultural contexts.

Called Living with Vultures in the Sixth Extinction, or LiVE, the four-year initiative began in August 2020.

Schroer has been visiting different areas in Spain, which, along with France, is home to more than 90% of Europe's vultures. These include griffon vultures, bearded vultures, cinerous vultures and Egyptian vultures.

Balancing forces

These birds, which have up to three-meter-long wingspans, play a crucial role in ecosystems as scavengers that break down carcasses. In doing so, vultures contribute to the recycling of nutrients and may even contain the spread of diseases.

But by the end of the 19th century, human influences including poisoning of carcasses by farmers or hunters in Europe had brought most vulture species to the verge of extinction. The decline continued through the 20th century with limited success in conservation efforts.

Schroer is interviewing a range of people who are involved in vulture conservation—from biologists and ecologists to breeders and farmers. She wants to uncover the motivations behind these efforts.

"What interests me particularly is how vultures' way of life relates to humans and agricultural practices," said Schroer.

In India, for example, vulture populations plummeted in the late 1990s and early 2000s as a result of extensive use of a veterinary drug called diclofenac. While serving as an anti-inflammatory medicine in cattle, it proved to be deadly for vultures that fed on the bovine carcasses.

In Europe, vultures were often killed by humans who regarded the birds as competitors in hunting or simply as vermin.

New threats

Although conservation efforts have helped vulture populations in Europe, they're now facing new threats including veterinary drugs in carcasses, power lines and wind farms.

Coexistence among humans, livestock and vultures can easily be disturbed by growing industrialization and even government policies.

For example in the 1990s, when Britain faced a major outbreak of "mad cow" disease and was in the EU, a law forbade the practice of leaving livestock carcasses out in nature. Griffon vultures, heavily dependent on the carcasses for food, suddenly began to starve.

"It's an interesting case where you can really see how public health policies can affect conservation," said Schroer.

A goal of her project is to understand how different regulations and management practices can have adverse effects on animals.

"What social and cultural analysis brings to the table, which natural-science analysis is lacking, is to look at the broader social and cultural context—including historical practices and lessons—and observe vulture conservation in light of all these developments," said Schroer.

More information:

- LYNXONTHEMOVE
- LiVE

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