

Reintroducing top predators to the wild is risky but necessary—here's how we can ensure they survive

February 20 2023, by Seth Thomas



Collared leopard being released into North Ossetia, Russia in 2022. Credit: Pavel Padalko, [CC BY-NC-ND](#)

Large carnivores are critical to the balance of an ecosystem. In

Yellowstone National Park in the western US, [gray wolves](#) keep elk populations at a [healthy level](#). This prevents vegetation from being overgrazed and leads to taller woody plants which allow other species, such as beavers, to flourish.

But habitat loss and persecution have [eliminated](#) many [large carnivores](#) from their historical environment. The Eurasian lynx could be found in the UK over a thousand years ago and wolves roamed the country until the mid-18th century.

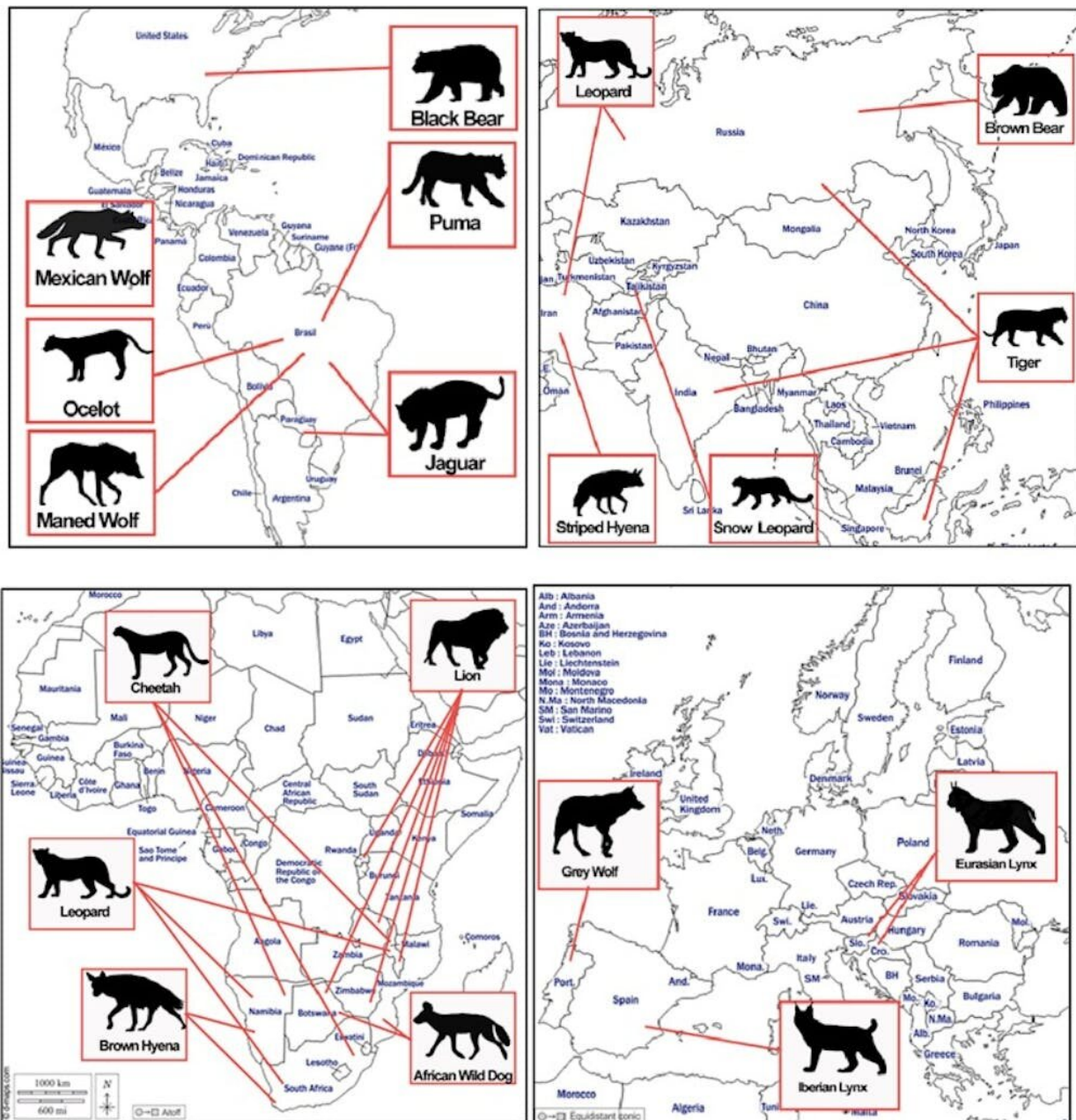
However, our attitudes towards these animals are gradually changing and large [carnivores](#) are now viewed by many as the [victims of human expansion](#). Many areas are seeing these animals return as a result. Yellowstone's gray wolves were reintroduced in 1995 after 70 years, and in 2020, voters approved [the species' reintroduction](#) to the state of Colorado.

Like these wolves, many other species require [human intervention](#) to reach their former habitats. But this is costly, [controversial](#) and often ends in failure. The relocation of a single animal can [cost thousands](#) and once released, these animals can [prey on local livestock](#).

But since 2007, we've seen [technological advances](#) in wildlife monitoring, [improved guidelines](#) for carrying out reintroductions and the global [rewilding movement](#) gathering pace.

These factors make now the perfect moment to determine whether carnivore reintroductions are becoming more effective. In a [new study](#), my colleagues and I studied the success of almost 300 carnivore reintroductions worldwide involving 18 different species between 2007 and 2021.

Indicators of success



Global distribution of the large carnivore reintroductions studied. Credit: [Thomas et al \(2023\)](#), CC BY-NC-ND

Between 2007 and 2021, 66% of all the reintroduced carnivores studied

were still alive six months later. Survival at the six month mark was our measure of success.

Success rates for wild-born carnivores increased from 53% to 70%, while twice the number of captive-born animals (64%) now survive reintroduction than did so in 2007.

The most successful species in our study were [maned wolves](#), [pumas](#) and [ocelots](#). In contrast, [lions](#), [brown hyenas](#), [cheetahs](#), [Iberian lynx](#) and gray wolves were least able to survive their new environment.

We tested various factors, all of which were under the project manager's control, that influence the success of animal reintroductions—practical changes that could improve the outcome of future rewilding efforts.

So-called "soft releases", where animals are allowed an acclimation period at the release site anywhere between [10 days and 5 months](#) long, had a clear influence on survival. These releases had an 82% [success rate](#) compared to just 60% for releases with no period of adjustment.

Younger animals and those born in the wild were also more likely to survive reintroduction. Wild-born animals had a 72% survival rate compared to 64% for animals born in captivity. This is good news for rehabilitated and orphaned carnivores which are taken from the wild for their survival. These animals represent a sizeable proportion of all reintroduced carnivores and made up 22% of the animals in our study.

We found higher success rates when carnivores were released into unfenced areas. This is surprising as [research](#) finds that fenced [nature reserves](#) tend to support higher densities of carnivores and reduce conflict with humans.



A puma in a pre-release enclosure before being released into Serra do Japi, São Paulo, Brazil. Credit: Associação Mata Ciliar, [CC BY-NC-ND](#)

But greater competition for resources and direct conflict with other carnivores in these reserves may have a negative impact on the survival of reintroduced animals. [Research](#) on the range and movement patterns of [African wild dogs](#) in South Africa's fenced Pilanesberg National Park found that the dogs actively avoid interaction with lions.

Rewilding on the horizon—but there's a catch

Large carnivore reintroductions are becoming more effective, prompting

countries to consider reintroducing large predators. In the UK, debates are ongoing surrounding the possible [reintroduction of the Eurasian lynx](#). Our findings could help inform their release.

But our research also highlights the alarming fact that one-third of all large carnivore reintroductions fail. And even when successful, the establishment of a population has proved a challenge. Just 37% of the animals that survived reintroduction successfully reproduced and the number of animals who will have raised young to adulthood is likely even lower. It seems that many rewilded animals take far longer than six months to establish themselves in an ecosystem and find a potential mate.

Preventing species loss in their current ranges should thus always take priority. This will involve measures to tackle urbanization and [climate change](#), which are at present two leading causes of global [habitat loss](#).

Despite their increasing success, the reintroduction of large carnivores still leads to the death of many of the [animals](#) involved and often fails to establish a population. The risky nature of these interventions makes it even more important that they have local support or they are likely doomed to fail from the start.

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