



Wolves, bears, and other large carnivores are returning to western Europe. But is there still room for them?

The Carnivore Comeback

ARBAS, FRANCE, AND MARIAZELL, AUSTRIA—

This used to be just another sleepy village in the Pyrenees. But lately, the mayor of Arbas, population 250, has received death threats, the quiet central square has been turned into a battlefield between protestors and police, and bottles of sheep blood have been smashed against the sandstone facade of the town hall.

Arbas has become the epicenter of one of France's most hotly debated ecological issues: the government's plan to save the remaining brown bear population in the Pyrenees by reintroducing animals captured in Slovenia, where they are still abundant. Arbas's mayor, François Arcangeli, enthusiastically endorses the plan, and he chairs Pays de l'Ours-ADET, a nonprofit organization promoting peaceful coexistence between bears and humans. So when the government picked sites near Arbas to release three Slovenian bears earlier this year, it was hoping for little resistance; instead, Arbas has become a magnet for frustrated opponents, primarily sheep farmers who say their livelihoods are threatened.

France's battle of the bears is one of the most vicious examples of a struggle taking place in several European countries. The original populations of bears, wolves, lynx, and wolverines—the four main large predators native to Europe—were exterminated from many of the western countries in the 18th and 19th centuries as habitat disappeared and hunters sought out the last of the hated predators. But in recent decades, carnivores have been making a comeback, increasing in numbers and expanding their territory.

They have often done so with little or no human help. Bears, wolves, and lynx naturally travel hundreds of kilometers in search of food and mates, and the dismantling of

border fences between western and eastern Europe has allowed new immigration from the often-robust populations in former communist countries. In some cases, governments have urged the process along by transplanting animals from eastern Europe.

The comeback has triggered a wave of new research into the behavior and population dynamics of large carnivores. Scientists are studying how many individuals are needed to sustain a viable population, for instance, and what the most effective management strategies are. They are tracking how far the animals wander, who mates with whom, and how barriers such as highways affect both migrations and genetic diversity.

But although a science-based management plan is essential if the animals are going to thrive, that alone is not sufficient, experts agree. The overriding question, they say, is whether citizens of these densely populated and highly developed countries will be willing to coexist with the animals—even if they occasionally devour livestock and scare unsuspecting humans. The key to success, says John Linnell



Wild things. Lynx, wolverines, and wolves are increasing in numbers and in territory across western Europe.

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Wary welcome. Brown bears like this one in the Pyrenees in France have sparked vigorous debate.

of the Norwegian Institute for Nature Research in Trondheim, Norway, “is to get people used to the idea of having something in their backyards that is wild and a little out of control.”

A wild hope

For centuries in Europe, big carnivores were seen as dangerous and shrewd enemies, and killing them was considered a virtue. But in the 1960s and 1970s, as biodiversity rose on the political agenda, conservationists and governments across western Europe began rallying support for new policies to protect the dwindling populations. Supporters concede that in western Europe, big carnivores aren’t needed to sustain a healthy ecosystem; hunters are usually happy to keep populations of prey animals such as deer and wild boar in check. But the photogenic animals can act as “umbrella species”: The decision to protect their large habitats often results in a whole series of measures—such as restricting development and building migration corridors over highways—that will help protect many other, less charismatic species.

Carnivore supporters offer a moral argument as well. True, with the exception of the Iberian lynx (see sidebar, p. 749), none of Europe’s big carnivores is endangered—in fact, they are thriving in large parts of eastern Europe. But eastern countries shouldn’t bear the burden of conservation alone, argues Olivier Hernandez of the French WWF, formerly the World Wildlife Fund. “We also maintain the Louvre, even though there are great museums in eastern Europe,” he says. Nor should rich countries such as France and Austria preach about conservation in the developing world if they can’t sustain their own carnivore populations, says bear expert Beate Striebel of WWF in Austria. “Elephants cause much more damage and are more dangerous than bears,” she says.

Although it is still early days, conservationists say, there is reason for optimism. Wolves have returned to Sweden, where they now number about 100, and to Germany, where more than a dozen have taken up residence in a military training ground on the Polish border. Small populations of reintroduced lynx have gained footholds in Switzerland, eastern France, and southwestern Germany, and natural immigrants are thriving in southern Sweden. In northern Scandinavia, populations of wolverines



Save our sheep. Shepherds in southern France protest the release of Slovenian bears to boost the dwindling local population. The banner reads, “Freedom for bears, danger for people.”

are small but stable or even increasing. Bear populations are also small but stable in Austria and Italy, and the one in the Pyrenees, although still hanging in the balance, may just make it. “If you look at Europe as a continent, we shouldn’t complain,” says ecologist Luigi Boitani of the University of Rome “La Sapienza.”

Room to roam

As they search for the best ways to support these often-fragmented populations, scientists are gathering more precise data on them. So far, even basic population estimates have largely been based on extrapola-

tions and guesswork. Now, genetic tools are providing a far more accurate tally and also providing new insights into how the animals use their space.

In Austria and France, genotyping of hair and scat has enabled officials to trace damage reports to specific animals so they can better determine whether a single “problem bear” needs to be targeted for tracking or possible interventions. In Austria, DNA evidence suggests that the bear population numbers just 20—and not the 25 to 30 previously estimated—despite the births of 27 cubs between 1991 and 2005. Such studies have also yielded worrying signs of inbreeding. In one region, a single male fathered all 12 cubs born between 1994 and 2003, including litters with two of his daughters.

Using Global Positioning System-enabled radio collars, scientists are learning more about migration patterns. Radio collars can also help scientists determine where to put “green bridges” to allow animals to cross large highways safely. One radio-tagged wolf migrated more than 300 kilometers from Parma, Italy, to Nice, France, for instance, whereas a bear was spotted leaving the Pyrenees and approaching the Toulouse suburbs, 50 kilometers to the northeast. (It was eventually captured and returned to the mountains.)

The animals’ surprising mobility highlights one acute problem in protecting them. In most of Europe, wildlife management is the responsibility of a patchwork of organizations: In different areas, the agriculture ministry, the environment ministry, or even hunting organizations have formal responsibility for local management of large carnivores. Now, several ecologists are working



Too close for comfort. Bruno, a brown bear that found its way to Germany in May, had developed a troubling taste for lambs and other livestock.

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with the European Union to develop a population-based plan that recognizes that borders mean little to such animals. The new plan would take into account the genetic diversity of the populations and possible corridors among them and will attempt to draw up rules that, if not the same from region to region, at least don't actively conflict with one another.

Good neighbors?

That still leaves one major obstacle, however: overcoming public opposition. "I hate to admit it as an ecologist, but the most pressing issues are related to social science,"

Linnell says. "Understanding the sociology of coexistence is really the key."

The problem was painfully illustrated by the fate of Bruno, as the media called him—a bear born in Italy that crossed Austria and finally ended up in southern Germany last summer. The first wild bear to set foot in the country in nearly 100 years, Bruno was warmly welcomed; Bavarian state environment minister Werner Schnappauf even held a press conference to celebrate his arrival. But those feelings cooled when Bruno's taste for sheep, chickens, and caged rabbits—and his apparent fearlessness of humans—became evident. After weeks of

fruitless attempts to capture him, he was summarily shot by hunters commissioned by the Bavarian government.

Worries about carnivores ravaging livestock and putting humans in danger have triggered opposition to their recent expansions throughout Europe, and especially where they have been reintroduced. Sheep farmers in the Pyrenees say that the five bears released so far this year threaten their livelihoods and create a mortal danger for shepherds, hikers, and hunters. Mountain guide and former shepherd Louis Dollo, a vocal spokesperson for the antibear movement, says the program was forced on the



fiercely independent region by conservationists and bureaucrats in Paris. "These people don't have a clue about life in the mountains," he says.

Tensions in the region have escalated so badly recently that when Palouma, a female brown bear released in April, plunged from a cliff late August and died, some suspected foul play. (An official investigation into her death is ongoing.) Ecologist Pierre-Yves Quenette, head of the government team that releases bears and studies them afterward, says the recriminations and threats have become so intense that he had to take time off earlier this year to preserve his sanity.

Geographer Farid Benhammou, a reintroduction supporter who is working on a Ph.D. thesis about the battle, says the fierce resistance stems in part from broader discontent among farmers about the troubled economy and the influx of urban people into rural areas. "The bears have become a scapegoat for everything that's wrong," he says.

That doesn't mean that bears are problem-free, however. Although bear supporters maintain that the risk to humans is greatly exaggerated—no human being is known to have been killed by bears in the Pyrenees for at least 150 years—they concede that the damage to livestock is real. Bears kill some 200 sheep annually in the Pyrenees alone. Wolves and lynx cause damage throughout Europe, especially in areas where they are newcomers and farmers haven't adapted to their presence.

The French government is trying to find a solution by compensating farmers for lost sheep, giving them the benefit of the doubt when a bear attack is suspected but not proven. It also sponsors the construction of mountain huts for shepherds (until recently, most sheep wandered around unguarded) and offers farmers subsidies to get a trained dog to help ward off attacks. But farmers say the compensation isn't enough, and most wouldn't shed a tear if the entire bear population dwindled to zero, Dollo concedes.

Proponents of the reintroductions, meanwhile, are trying to play into the popularity of bears in the general population. They launched a special cheese, for instance, imprinted with a bear paw, that only farmers committed to protecting bears can produce. And Alain Reynes, director of Pays de l'Ours-ADET, argues that bears will lure, not deter, tourists, noting that the Italian region of Abruzzo has seen tourism increase after it started billing itself as bear and wolf country. (That the average hiker or mountain biker is extremely unlikely to see a bear



On the Brink

Three of the most genetically valuable kittens on earth were born in southern Spain last year. The first captive-born members of the world's most endangered feline species, the Iberian lynx, the cubs represent a ray of hope in an otherwise grim story. Although the lynx was once prevalent from the Pyrenees south to the Mediterranean, now only 200 individuals are left, surviving in two fragile pockets in Andalusia.

The Iberian lynx is about twice the size of a housecat and half the size of the more common Eurasian lynx, which is making a comeback elsewhere in western Europe (see main story). The Iberian population was small but sustainable in the early 1980s with about 1100 animals. But it was devastated by an outbreak of two exotic diseases that killed up to 90% of the region's wild rabbits—the lynx's primary prey. At the same time, Spain and Portugal, as new members of the European Union, received an influx of funding for new roads, high-speed trains, and tourism infrastructure, squeezing the lynx's habitat.

"It was a huge emergency situation," says Astrid Vargas, who now heads the Program for Ex-situ Conservation of the Iberian Lynx, based in the Doñana National Park. Last-ditch efforts to protect habitat and rebuild the rabbit population seem to have helped: One of the populations is stable, and the other has grown slightly since 2002. But the animals are still on the brink, and a fire or epidemic could quickly wipe out the remaining survivors, Vargas says.

The captive breeding program Vargas heads is designed to release animals into currently lynx-free areas by 2010. Now in its second year, the program has produced nine cubs, five of which have survived. Along the way, Vargas and her colleagues are collecting a wealth of data about the animals' behavior and reproduction. One of the most important lessons was that young cubs go through an extremely aggressive phase a few months after birth, fighting so brutally with their littermates that they often kill each other. After losing one of the first three cubs in such a fight, the scientists now separate the young animals for a few critical weeks.

But most crucial, say Vargas and others, is the search for an appropriate spot to release the animals. Scientists are seeking 10,000 hectares of habitat with healthy rabbit populations and minimal roads—seven lynx have been killed in road accidents in the last 18 months. That's not easy to find, Vargas says, but is the only way the animal will survive. "Captive breeding ... is not a salvation for the lynx. If we're breeding but there is no habitat, we're not saving the species."

—G.V.

appears to be irrelevant.) Ecologists and advocates across Europe are also working to woo the support of hunting groups, which wield significant power.

Carnivore advocates say that western Europe as a whole could take some lessons from Austria and Italy. After considerable ups and downs, both countries have learned anew to live with bears. After a particularly bad run of bear damage in 1994, Austria hired four "bear advocates," biologists who are responsible for assessing damage and working with local residents, helping them

to bear-proof farms and hunting stations, and explaining how to handle encounters with bears.

That experience will need to be replicated if the species are to remain in their reconquered territory, says Linnell. "It's not about having these animals in a national park," he says. No park in Europe can sustain even a remnant population. "We want to get people to accept that wolves and bears are part of the modern 21st century landscape."

—MARTIN ENSERINK AND
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