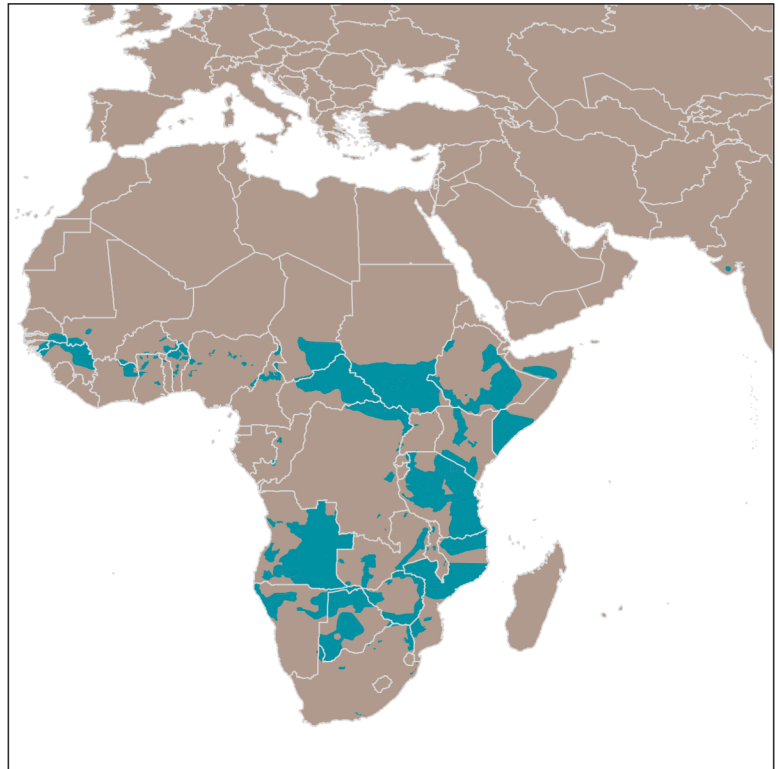


# African Lion *Panthera leo*

CONSERVATION STATUS: Vulnerable



This well-maned male was photographed in Ruaha National Park. This is the largest park in Tanzania, second largest in Africa, and is a stronghold for lion populations.



African lions are the second-largest cat species, with big males nearly as large as tigers and females just a bit smaller. They are also the most social cat species, with prides of multiple females and their young typically attended by one or more males. These ferocious cats lead violent lives, and their group battles with large prey such as buffalo and zebra are the stuff of safari lore and prime-time television.

Lions are one of the few predatory species that can be watched in person through binoculars, at least in some open habitats, and numerous studies have documented their ecology and behavior that way. But lions are not always easy to watch

from a Land Rover. They are mostly active at night, when flashlights or night vision goggles would be needed to see them, and they are not always in open habitats. Camera traps are especially useful in woodlands or bushy areas, where visibility is limited and it is too thick to drive through and too dangerous to walk in.

The male lion's famous mane serves as an advertisement of its vitality, attracting females and warning away males. The variety of color and length of manes, combined with the various scars acquired in the course of their violent lives, means that camera trappers can often identify individuals in photographs.

Lions prefer large prey such as zebra and buffalo. Lions generally avoid the largest species such as elephants, giraffes, rhinos, and hippos, although they will attack a young animal left undefended. They will also chase down smaller antelope or wart hogs if hungry enough. In open habitats, males are less likely to participate in a hunt and more likely to steal their meal after the pride's females have brought something down. However, in more dense habitats where they can't keep track of the females as well, males do more of their own hunting.



A female lion brings her cubs to drink from a water hole on a ranch in Namibia. Males will protect their own offspring but are notoriously brutal to any cubs not related to them. This can lead to infanticide, which is most common when new male lions take over a pride of females after vanquishing the previously dominant males of the area. The reproductive physiology of lions actually encourages this rogue behavior because females quickly become reproductively receptive once their cubs are gone. New males in a pride are impatient to breed, knowing that they too could soon be overthrown.



A camera trap from Tanzania shows the same trail being used by people during the day and lions at night. This documents just how close people and lions live in much of Africa, as well as how the natural separation of diurnal and nocturnal activity might help the two species coexist.

### LIONS IN CONFLICT WITH PEOPLE AND CATTLE

The coexistence of lions and people in the same space is a difficult balance between two species used to living at the top of the food chain. Depredation of livestock by lions is the most widespread problem, which can lead to retribution killing of the lion through poisoning or direct hunting. Lions also still occasionally attack people,

especially those out alone at night. Conservationists are working with local communities to try to discover how to reduce the costs of these big carnivores to local communities, especially through simple livestock management innovations that could reduce attacks. This approach can also be balanced by helping locals receive some financial benefit to living with lions, such as through tourism revenue.

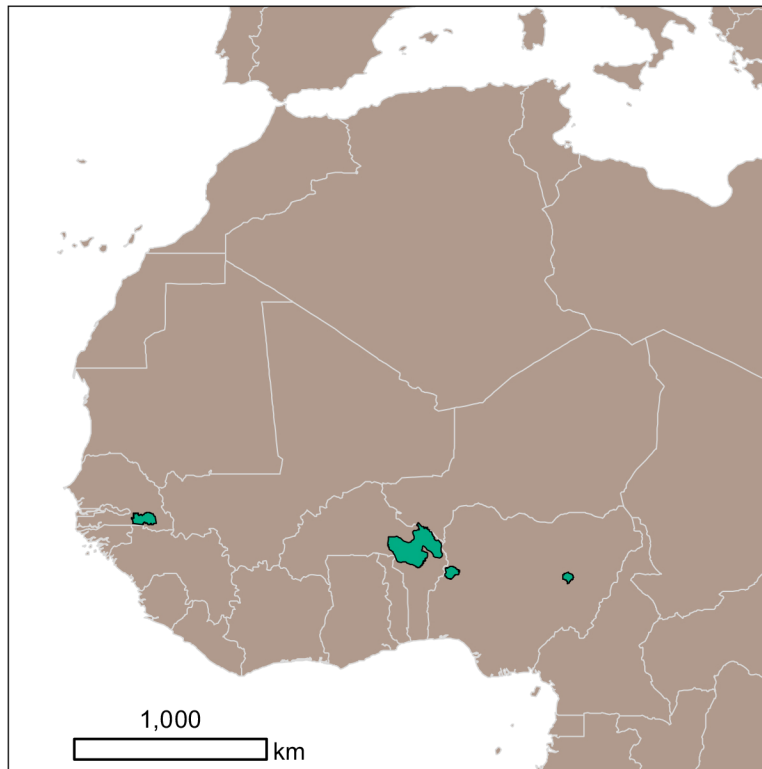
Unfortunately, much of the damage to lion populations has already been done. Lions have been eradicated from 80% of their historic range, with fewer than 35,000 animals left, scattered across 27 African countries. Some East African parks remain strongholds, with many thousands of lions each, but the situation in West Africa is far more tenuous. Camera trap surveys have been key in documenting



One of the less than a dozen lions thought to survive in Niokolo Koba National Park, Senegal.

where lions survive in West Africa and which parks have lost lions.

Documenting the absence of a species in an area is difficult—how can you be sure you didn't just miss them? Camera traps are ideal for this goal because you can easily quantify the survey effort (the number of nights the cameras were deployed in the field) and because the photographs can be verified by other experts. This was recently important in Ghana's Mole National Park, where an animal seen in a video was initially identified as a lion but was later judged to be a wart hog, leaving no evidence that lions survive there. Another survey in Waza National Park, Cameroon, estimated that the park holds 14 to 21 lions but that the number had declined over the five years of the study. Furthermore, the same camera traps detected humans or cattle inside the park at 30% of the survey locations, highlighting the continued potential for conflict between lions and people. Lion expert Philipp Henschel synthesized survey data from around the region and concluded that, in total, only about 250 lions survive in West Africa, having disappeared from the other 99% of their range in this region. These animals are scattered across four protected areas, and only one of these populations has more than 50 lions.



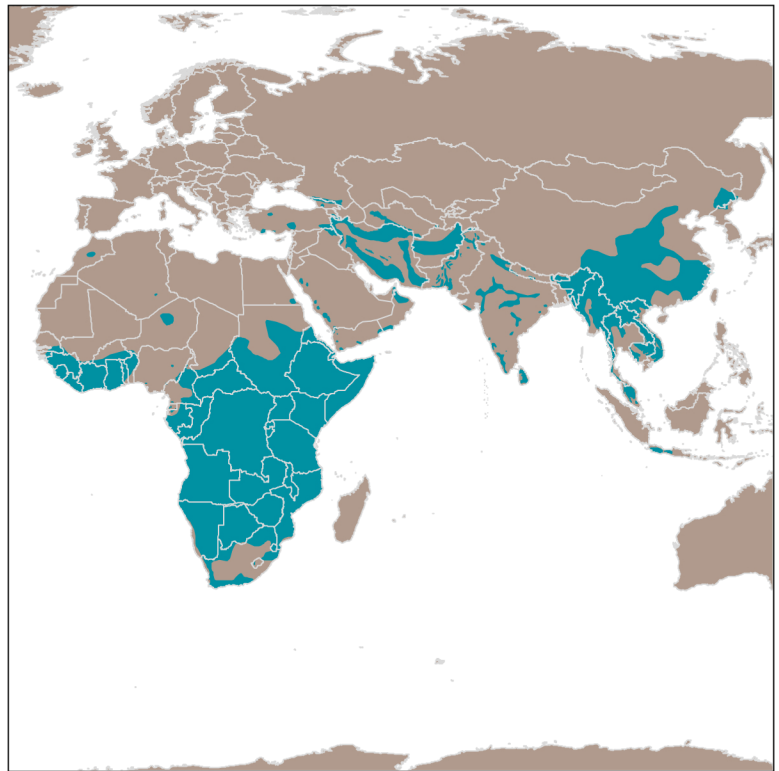
Lions survive in 1% of their range in West Africa, with just 250 animals counted across four parks (green areas on map).

# Leopard *Panthera pardus*

CONSERVATION STATUS: Near Threatened



An Indian leopard.



The leopard is one of the world's most adaptable carnivores, ranging from South Africa to Russia and using habitats from desert to tropical rainforest. Each population adapts to local conditions, and the nine subspecies can look slightly different from each other. Local conservation issues vary as well, with the Amur and Persian subspecies being particularly endangered, while most of the African populations are apparently secure.

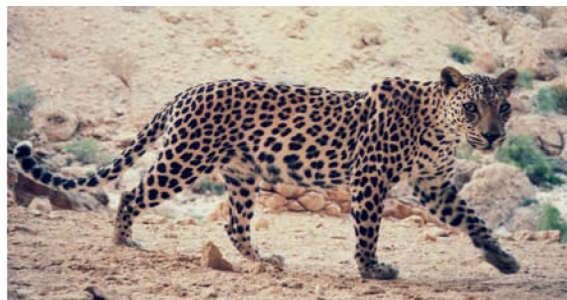
Leopards coexist with lions and tigers in some parts of their range and must avoid them or face a fight they cannot win. Camera traps have revealed the leopard's strategies for coexistence, shifting their activity to be more nocturnal and yielding the best hunting grounds to the larger species, making do with suboptimal habitat.



This young forest leopard from Gabon will grow up to hunt a diversity of prey types available in African rainforests, especially monkeys and chimpanzees.



This Amur leopard is one of a few dozen that survive in northern China and eastern Russia; it sports a thicker coat of fur than other subspecies.



This Arabian leopard from the Dhofar Mountains of Oman survives by hunting small and medium-sized mammals, as well as avoiding people, in the deserts of the Arabian Peninsula.