



The Wildlife Watch Binocular

PO Box 562, New Paltz, NY 12561

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CONSERVING THE SWAMP DEER

by Bindu Gopal Rao



Photo © Bindu Gopal Rao

One of the most successful conservation stories in Indian jungles is that of the Hard Ground Barasingha, or Swamp Deer, in Madhya Pradesh's Kanha National Park.

Entering Kanha National Park in the morning is magical not just because of the lush sal trees but because of its mascot (yes, called Bhoorsingh the Barasingha), the swamp deer. The morning light gives a magical golden hue to the swamp deer, making for a sighting that is completely mesmerizing.

The Species

The hard ground barasingha (*Rucervus duvaucelii branderi*) is one of three subspecies of swamp deer surviving in India and Nepal, and it occupies a

(Continued on Page 4.)

EBOLA VIRUS IN GORILLA COUNTRY

How the DRC's Ebola Outbreak Could Devastate Gorilla Populations

by Samuel Peters

A new Ebola outbreak is spreading through the Democratic Republic of Congo. Scientists and conservationists are watching closely, because the last time Ebola arrived, it nearly wiped out its gorilla country.

On May 15, 2026, the Congolese Health Ministry confirmed a new outbreak of Ebola in the eastern Democratic Republic of Congo (DRC). The strain involved is Bundibugyo virus, one of six forms of Ebola virus within the Filoviridae family, and one for which there are no approved treatments or vaccines. The disease quickly spread into Uganda as more than 676 human cases were recorded and the death toll passed 136. The World Health Organization swiftly declared it a Public Health Emergency of International Concern (PHEIC).

As the human response mobilizes, a second alarm is sounding — quieter,

but no less urgent — among the scientists, veterinarians, and park rangers who work to protect Africa's great apes. The eastern DRC is home to some of the world's most endangered gorilla populations. The overlap between the outbreak zone and gorilla habitat is not yet direct but it is close, and it is narrowing.

In 2002 and 2003, Ebola swept through the Lossi Gorilla Sanctuary in the Republic of Congo. Researchers monitoring the population watched as 91% of individually known gorillas in their study groups disappeared within a matter of months. Most were dead,

(Continued on Page 3.)



"Eastern Lowland Gorilla" (cropped), by Joe McKenna, used under CC BY 2.0



"Rangers, Virunga" (cropped), by [Fanny Schertzer](#), used under [CC BY 3.0](#)

as mortality rates ran high, up to 95%. Across a 5,000km² study area, an estimated 5,000 western lowland gorillas perished. A subsequent 2004 outbreak in Odzala-Kokoua National Park extended the damage. In 2007, partly in response to the scale of those losses, the International Union for Conservation of Nature reclassified the western lowland gorilla as critically endangered: one category from extinction.

Researchers who studied the outbreaks described Ebola accurately as "a threat to the survival of African great apes." That assessment has not changed. Today, all four gorilla subspecies sit at either endangered or critically endangered status. The western lowland gorilla is the most numerous, with about 316,000 remaining, the majority in the Republic of Congo. The other three subspecies exist in far smaller numbers and in far more precarious conditions.

Why Gorillas Are So Vulnerable

Gorillas live in close social groups, typically eight to ten animals gathered around a dominant silverback, with several adult females and their offspring. They spend hours each day in physical contact with each other: sleeping, grooming, and playing together. This closeness is central to their social structure and their wellbeing. It is also one of the primary reasons Ebola moves through gorilla groups so rapidly.

Damien Caillaud, a behavioral ecologist at the University of California, Davis, was in the field during the Losi outbreak. He documented how the virus spread within groups through direct physical contact, particularly during rest and grooming. Nearly all gorillas in an affected group would disappear within a few weeks of the first death. Solitary males — those living apart from family groups — survived at far higher rates, which confirmed the link between social contact and transmission.

The behavior of gorillas around death compounds the risk. When a gorilla dies, the others do not simply move on. Healthy gorillas will stay near a dead body and will approach and touch the remains of individuals they encounter in the forest, even from other groups. Mothers have been observed carrying the bodies of dead infants for days, sometimes weeks. These responses are well-documented by scientists. But in the presence of Ebola, a carcass can remain infectious for several days, meaning that this behavior likely contributed to the spread of the virus across group boundaries during the early 2000s outbreaks.

Mountain gorillas are the subspecies under the most immediate threat from this outbreak. They live at the precise intersection of DRC, Uganda, and Rwanda: the same geographic corner where the current outbreak is concentrated. Their population has recovered significantly

from a historic low of fewer than 300 in the 1980s and now stands at just over 1,000. It is one of the few genuine conservation success stories in great ape protection.

Dawn Zimmerman, a wildlife veterinarian at Yale University and the Smithsonian Institution, modelled what

would happen if Ebola entered the mountain gorilla population through a single infected individual. Her findings, published in Scientific Reports in 2023, projected that fewer than 20 percent of the population would survive past 100 days post-infection. One case, introduced into a population of just over 1,000 animals, could effectively destroy decades of conservation effort.

The Grauer's gorilla; the world's largest nonhuman primate, also known as the Eastern lowland gorilla, lives exclusively in eastern DRC, the same region where the Ebola outbreak is now unfolding. Their population is estimated at fewer than 3,800, but that estimate is more than a decade old. **Armed conflict across the region has made accurate monitoring impossible. Researchers require security escorts to reach field stations, and in some areas have been unable to work at all for months at**

a time. The honest answer is that nobody knows exactly how many Grauer's gorillas remain, or where they all are.

Conservation is a Joint Effort

The response on the ground involves several organizations working together in often difficult and dangerous conditions.

Gorilla Doctors, an NGO providing veterinary care to wild mountain and Grauer's gorillas, has teams on 24-hour call to investigate any suspected Ebola case in wildlife. Their chief veterinary and scientific officer, **Tierra Smiley Evans**, has described how parks have increased security at the boundaries of protected areas to limit the risk of infected people entering gorilla habitat. Rangers in both Virunga National Park and Kahuzi-Biega National Park have been trained to recognize the clinical signs of Ebola in great apes.

Emmanuel de Merode, director of Virunga National Park, has approximately 200 rangers positioned near gorilla populations. The park has established screening posts to check all travelers entering the area for signs of illness. Tourism, already suspended due to ongoing armed conflict in the region, has not resumed, removing one of the more common routes of disease transmission from humans to habituated gorilla groups.

The Dian Fossey Gorilla Fund is monitoring the situation across DRC and Rwanda and has teams actively preparing response protocols. The Fund has acknowledged that the outbreak is already placing strain on conservation operations more broadly, even in areas not directly affected.

Conservation work in this region has never been safe. In May 2026, two rangers were killed at a control post in Virunga National Park when an armed group opened fire. More than 200 rangers have lost their lives in the park since it was established in 1925.

In this context, the local Congolese conservation body, Institut Congolais pour la Conservation de la Nature (ICCN), provides security escorts for researchers and works alongside international organizations on the ground to manage park security.

The Vaccine Question

One avenue that researchers have long advocated for, but which yet remains unrealized, is that of an Ebola

vaccine for wild apes. Peter Walsh, a disease ecologist formerly at the University of Cambridge, developed an oral vaccine candidate that could be delivered through bait left in the forest, eliminating the need to tranquilize the animals. Laboratory results were encouraging as the immune response produced was comparable to that of an injected vaccine tested previously. The key practical advantage was significant: a single dose, delivered without human contact, across a large area.

The territories involved are vast and often remote. Distribution by field teams or drones has been proposed but never implemented at scale. Ethical frameworks governing research on great apes have complicated further testing. The result is that a tool which researchers believe could save thousands of animals exists only in a partially developed state, while the need for it grows more urgent with each new outbreak.

One factor which has received less attention than it deserves is the effect of U.S. funding cuts on the capacity for scientists and conservationists to respond to outbreaks. The Trump administration's reduction of USAID and related international support programs has left a visible gap in conservation infrastructure across Central Africa. Many of the organizations monitoring gorilla populations and protecting their habitat were partially funded through these mechanisms. Staff have been cut, programs scaled back, and monitoring capacity reduced, precisely at the moment when the need for it is most acute. The United States was previously a leading contributor to Ebola outbreak response internationally. That infrastructure has contracted, and the consequences are now being felt both in the public health response and in the conservation operations that run alongside the current outbreak.

As of late June 2026, there are no confirmed or suspected cases of Ebola in any gorilla population. The outbreak zones and gorilla habitat have not yet directly overlapped. That distance is being actively maintained by the people described above, working under difficult conditions with reduced resources. How long it holds will depend on how effectively the human outbreak is contained, and on whether the barriers between infected areas and protected gorilla habitat remain intact.

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Photo © Bindu Gopal Rao

genuinely unusual ecological position among them. The northern barasingha of the Terai, found in Dudhwa, Jhilmil Jheel, and in Nepal's Shukla Phanta, lives in wet, marshy grasslands, and its ecology reflects that: soft ground, standing water, and seasonally flooded habitats. The eastern barasingha of Kaziranga and Manas similarly depends on floodplain grasslands and riverine habitats. **The hard ground barasingha, by contrast, evolved in the dry, open grasslands of Central India, landscapes with a pronounced dry season, shallow soils, and hard ground conditions that would challenge any obligate grazer.**

What makes this adaptation remarkable is that it is incomplete in the most ecologically interesting way. "Despite generations of living in a hard-ground landscape, the Kanha barasingha retains a strong ancestral affinity for wetlands and aquatic forage. Field observations at Kanha document animals readily wading into waterbodies to graze on aquatic plants: *Hydrilla verticillata*, *Ceratophyllum demersum*, *Vallisneria spiralis* alongside their primary diet of terrestrial grasses like *Saccharum spontaneum*, *Themeda triandra*, and *Bothriochloa odorata*. The species is classified as an intermediate, selective graminivore; more than 75% of its diet is grass across seasons, but it comfortably adds aquatic and semi-aquatic forage when available. **This behavioural flexibility, sitting alongside a narrow dietary niche, is part of what makes the subspecies ecologically distinctive,"** says Dr. Neha Awasthi, Independent researcher and ex alumni, Wildlife Institute of India.

Past Woes

However, the presence of the swamp deer was not like today. In the 20th century, a very significant change was observed in the distribution trend of Barasingha in central India. Gradually their number started decreasing as tribals started using the land for agriculture in the valleys of the Narmada, Mahanadi, Godavari, and tributary rivers. Added to this were hunters and biological pressure that made the species disperse. **In 1938 when their population was assessed in the national park the numbers kept decreasing continuously and by 1970, only 66 Barasinghas were left in Kanha.** "An enclosure was built by the forest officials of Kanha in 1970, which was free from predators. As it was very small, in 2007 this enclosure was expanded to cover 50 hectares. Kanha was declared a tiger reserve in the year 1973, due to which special attention was paid to the conservation of tigers and Barasingha deer. The relocation of villages started from the core area of Kanha. And the displaced villages were converted into large grasslands, and grasslands and ponds were constructed for their food and breeding," says Ghanshyam Bhanware, Naturalist, Tathastu Kanha.

Making It Work

To save this endangered deer species, efforts were made to reintroduce it to Bandhavgarh Tiger Reserve and Supkhar Range (Kanha); efforts made between 1981 and 1990 failed. In 2015 the forest department

relocated the Barasingha to Van Vihar National Park with full preparation, which was successful. "This time the forest department used an African technique called Boma, and a non-invasive capture method was used. After the success in Van Vihar National Park the forest department transferred some Barasingha to Satpura Tiger Reserve in 2015 itself which was a Boma and non-invasive capture method. Thereafter the forest department also transferred Barasingha to again Satpura Tiger Reserve and Bandhavgarh Tiger Reserve using the same method," says Bhanware.

In fact, the measures that were taken at that time included the relocation of villages for wildlife something that was unheard of at that time and making predator proof enclosures. Durgesh Singh, co-founder of Outpost 12 by Sinali Experiences Pvt Ltd., says. "A proper habitat was created in the park where Barasinghas could have their choice of grasses, as they are very specialized eaters. They have a few species of grasses that they prefer to eat, and they are strictly grassland species that don't venture into the forest." Grassland management has been a central strategy in this conservation. "That also meant that big trees were not allowed to come up in the area so that the grasslands were never hampered in terms of growth and proper meadows could be developed. Likewise, de-weeding is a process where you take out the unwanted plants, not native or invasive in the area and that helps the native grass to grow," adds Singh.

Expanding the Footprint

For nearly 50 years, every hard ground barasingha alive on earth existed within the boundaries of a single protected area. Kanha is exceptionally well-managed, but the conservation logic of having an entire subspecies concentrated in one geographic location, however good the protection, is deeply uncomfortable. "A single disease outbreak, a severe drought coinciding with a population low, an uncontrolled wildfire in a dry year, or an epidemic originating from the livestock populations in the surrounding buffer—any of these could devastate a geographically isolated population before managers have time to mount a response. Historical records from Kanha itself document serious rinderpest outbreaks in 1925–26 and again in 1976 that killed large numbers of gaur, sambar, and chital. **The barasingha, confined to small habitat pockets at the time, escaped by chance. Chance is not a conservation strategy,"** says Awasthi.

Earlier attempts to establish an alternate population were unsuccessful. In 1982, twelve barasinghas were

captured at Kanha using chemical immobilization and transported to Bandhavgarh Tiger Reserve—all twelve died during the long-distance transport. Three further attempts between 1981 and 1990 to translocate animals within the Kanha landscape to Supkhar met with only partial success. "These failures were instructive. They shaped the design of what eventually became the Satpura programme - passive boma capture instead of chemical darting, shorter transport distances, customised vehicles, phased releases, and a predator-proof acclimatisation enclosure at the receiving site," says Awasthi.

The Satpura reintroduction directly addresses the single-population vulnerability. With a breeding population now established across three grassland sites in Satpura and growing from 98 translocated individuals to 172 by 2023, the subspecies is no longer dependent on one location. Satpura sits around 350 km from Kanha, well within the historical range of the subspecies. Forsyth (1889) and Brander (1923) both documented hard ground barasingha in the Pachmarhi region, making it an ecologically and historically appropriate receptor site.

In Conclusion

At the end, what makes Kanha's barasingha story special is that it actually represents the global conservation literature. A subspecies that fell to 66 individuals in 1970 and now numbers over a thousand free-ranging animals in Kanha, with an additional breeding population established in Satpura, is a remarkable outcome. It is often cited as one of India's great conservation successes, and rightly so. "But it is important to understand that this recovery was not spontaneous. It was the product of fifty years of sustained, species-specific management: stringent protection, strategic grassland management, village relocation, controlled burning, water development, predator-prey dynamics management, and now active metapopulation establishment. The barasingha did not recover because Kanha became a good tiger reserve. It became good because the intensive management required to save the barasingha also restored the grassland ecosystem that the entire ungulate community, and through them, the tiger, depends on," concludes Awasthi.

Bindu Gopal Rao is a freelance writer and photographer from Bengaluru. She enjoys birdwatching and environment, as well as taking the offbeat path when traveling. You can follow her on Instagram [@bindugopalrao](#) and find her work on [bindugopalrao.com](#)

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Normally Intended for mice, these traps are a nightmare for any animal who becomes adhered to the sticky substance of the trap. People have put glue traps in trees to kill insects, instead birds have become adhered to the glue inside the traps. As mammals, reptiles and amphibians, and avian species alike struggle to get free, they tear their insides out and suffer for hours or days.



Caller Supplied Photo of an Unfortunate Snake Caught in a Glue Trap

A caller to the Wildlife Watch Hotline sent this photo of a snake that had gotten into a glue trap intended for mice. What can rehabbers do to help the victims?

If you find an animal in a glue trap, the first thing to keep in mind is that you don't want to pull the animal off. It will take a very gentle approach of de-gluing. (Glue, by the way, is usually made by boiling animal by-products.)

We called the rehabber, Michele Gallo, to find out how she released him. She said that **VERY GENTLY** she worked some vegetable oil between the snake

and the glue, while keeping some cardboard under the unglued part of the snake, and with a Q-Tip, she gently worked the snake free and he took off immediately.

See this Peta video to know what mice actually go through: <https://www.peta.org/lifestyle/humane-home/five-things-didnt-know-glue-traps/>

Wildlife Watch believes that traps that kill or maim animals should be made illegal for the suffering they cause. There are highly effective non-lethal traps that are excellent. Here is one with which Wildlife Watch has had a lot of success:

Once the mouse is caught, he has enough food (peanut butter or corn flakes and some water) for at least 12 hours. We then release him in a safe area and continue to release others in the same location in case they're all related.



Mouse Trap - Multi-Catch from Uline.com

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LET'S GO WILDLIFE WATCHING

YELLOWSTONE NATIONAL PARK, WY

By Joe Anderson



Photo by Joe Anderson

Yellowstone, a hotspot of the US park system, is known for sitting above a huge caldera that creates its famous geysers, hot springs, and bubbling sulfur pools. It is also a tourist hotspot as it draws people in from all over the world for a variety of reasons. Along with the mesmerizing volcanic activity, stunning landscapes, and world-class hiking, Yellowstone is one of the best places in the country to experience wildlife first-hand.

On my visit to the park in 2022, I had some up-close encounters with animals that I was seeing for the first time. Generally I am very careful to keep a safe distance from all wildlife but I did not have the opportunity to move away when I awoke to the shadow of an elk on the side of my tent. Despite large antlers, these majestic creatures are not aggressive and can be seen easily in Yellowstone's fields and woods.

Later that morning an American Bison grazed peacefully a few hundred yards away from our campsite. These quintessential American animals were nearly driven to extinction by hunting in the late 1800s. They can now be seen in large herds within the park and are best viewed from the protection of your car. However, this particular Bison walked straight through our campsite as we ate breakfast. We had our eyes on it and

made sure to move away slowly before it approached.

Another species nearly driven to extinction within the United States was the Grey Wolf. Reintroduced into Yellowstone in 1995, they are safe from hunting within the park. However, a recent executive order aims to strip them of their endangered species protections. They face the destructive reality of open-season trophy hunting when they cross outside of park boundaries. In my tent that evening, I could hear the distant howl of one of the park's wolfpacks. Laying within earshot of this ghostly predator was both a reason for hope and a moment of grief. We know all too well what can happen when our precious wildlife is hunted for "economic" reasons.

Aside from these large mammals, Yellowstone is home to some unique birds. One common but spectacular species is the Lazuli Bunting. These small birds stand out due to their bright blue heads and orange chest patches. While on hike the next day we walked through a patch of forest home to Clark's Nutcracker. These large birds can hide thousands of seeds in hidden caches and return to feed on them when food is scarce in the winter.

The diversity of animals, and relative ease by which they can be seen, make Yellowstone one of our country's best places for wildlife watching. But we must be careful and vigilant to ensure these wildlife viewing pleasures can be enjoyed for decades to come.



**Joe Anderson is an
avid wildlife watcher,
and enjoys sharing his
favorite locations
with others.**



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GREEN HERON: *BUTORIDES VIRESCENS*

by Barry Kent MacKay



Painting © Barry Kent MacKay

The Green Heron (*Butorides virescens*) has often been described as “crow-sized,” and I think that is a fair comparison, although it is a crow with a disproportionately large front end, a long dagger-like bill, and long legs. Like all herons, it is something of a shape-changer. When resting it draws its neck tightly into the shoulders, giving the bird a compact, hunched appearance, but when alert it can extend that surprisingly long neck in an instant to strike at prey.

Although less colourful than the adult, the young bird is readily recognizable. Adults weigh about 240 grams (8½ ounces). The mature bird has a glossy black cap and rich chestnut neck, contrasting beautifully with the greenish upperparts.

Green Herons are generally more solitary than most other North American herons. They favor quiet waters where they hunt patiently from the water's edge or from low branches overhanging the water. At other times they stalk their prey one deliberate step at a time through the shallows, at times using tools to bait to attract fish within striking distance. Their diet includes almost anything small enough to swallow and profitable enough to pursue: fish, frogs, salamanders, small reptiles, crayfish, aquatic insects, worms, leeches, and many other invertebrates.

Green Herons are seasonally monogamous. Although they usually nest as isolated pairs, they occasionally join loose colonies with other herons. The nest is a rather bulky platform of sticks, usually placed in shrubs or trees over or near water, although occasionally on the ground. Typically, two to six pale greenish-blue eggs are laid, and both parents share incubation and the care of the young. The juvenile in my painting is approximately one month old.

This painting, done in oils on compressed hardboard, is approximately life-size. I donated the original to a charity before recording its exact dimensions.

To be placed on Barry's email list, please contact: **Barry Kent MacKay**, Bird Artist, Illustrator, Studio: (905) 472 9731, <https://fineartamerica.com/profiles/barry-mackay>
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