

Call of the wild Sanctuary

A S I A

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On the cover

The baleful look in an elephant's eye captures the pathos of species in their prime, undone by human actions.

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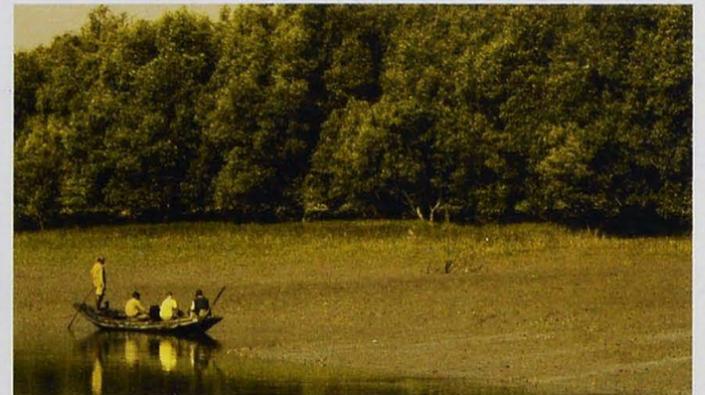
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24 Sanctuary 25 Years – Looking Back in Time

One step forward, two steps back? This is what history is likely to record when referring to our generation's poor planet management track record. To rekindle memories, we reproduce extracts from a quarter century of wildlife reporting in the hope that the sage advice of some of India's finest conservationists and natural history chroniclers helps us today.



44 25 Roller Coaster Years of Conservation

Wildlife laws are being ignored, flouted and amended to provide environmental clearances for development projects in and around Protected Areas. We look at some of the threats from mines, dams, canals, polluting industries, highways and the dilution of existing wildlife laws and we ask *Sanctuary* readers to join the battle to salvage what remains of our wilderness areas.

72 With a (Remote) Camera in 'Tigerland'

Following in the steps of F.W. Champion, Bivash Pandav and Abishek Harihar scour the Shivaliks and adjoining habitats in Uttaranchal to identify 30 sites and place a host of remote cameras to study the distribution of wild tigers. They write of the magic of this wilderness, their unexpected encounters, and how breeding tigers returned almost immediately after human disturbance was stopped.

Contributors



Jennifer Scarlott

Based in New York, she is a teacher with an unquenchable thirst and passion for wild India. **38**



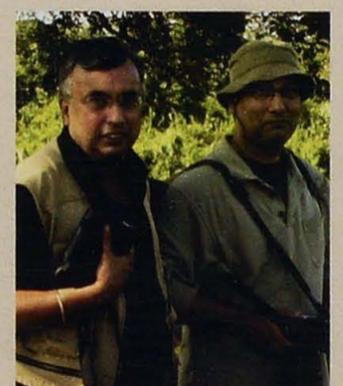
Peter Jackson

Former Chairman of IUCN's Cat Specialist Group, with tranquillised tiger. He is one of the most respected names in wildlife conservation. **68**



Bivash Pandav & Abishek Harihar

Wildlife biologists and researchers, they are working to use science as a tool for wildlife protection. **72**



Bikram Grewal & Sumit Sen

Partners on birding trips into the Indian wilderness, they share a passion for birds, books and habitat conservation. **78**

25 SPECIES WE MUST NOT LOSE



The IUCN, the World Conservation Union, an international organisation dedicated to natural resource conservation has various labels for species based on its perception of their status – threatened, vulnerable, endangered, and so on. The following list should not be confused with the IUCN listing. It is a result of the threat perceptions of the *Sanctuary* team, which works with field biologists, conservationists, forest officers, journalists and others with a specific interest in keeping the wildlife of India out of harm's way. By definition, such lists are subject to differences of opinion. Because a species has been left out does not indicate that we believe it needs "less" protection. In a sense, our list is merely indicative, and should help *Sanctuary* readers decide how they might wish to be involved in helping to protect wildlife. Readers are urged to contact us with specific offers of help. We will attempt to put them in touch with credible biologists and activists, or non-governmental organisations and government departments.

It was a difficult process to shortlist 25 when so many species around the country are in dire straits. Our focus is on apex species because protecting them leads to the protection of many others.

THE *SANCTUARY* LIST OF 25 ENDANGERED ANIMALS

Royal Bengal tiger *Panthera tigris*

The entire tiger population of the Sariska Tiger Reserve was poached in 2005 to supply the tiger "skins-and-bones markets" in Tibet and China. Similar reports of vanishing tiger populations are coming in from other tiger reserves. Mines, hydroelectric projects, roads and other industrial projects are causing habitat and wildlife corridor destruction, which in turn are leading to isolated, ultimately unviable tiger populations. Denotification of Protected Areas to make way for development projects continues. Today, in the absence of any political goodwill, the tiger has a new enemy in the form of the *Tribal Bill*. Using tribal welfare as an excuse, the Bill will destroy the tiger's last remaining habitats. The population of wild tigers in India is believed to have dropped to an all time-low of approximately 1,500.

To survive, the tiger needs safe, large areas of healthy habitat – sufficient water, good prey base and cover for hunting. If we are to ensure the future stability of India's tigers, the first step is to ensure that ground-level protection is strengthened and that forest guards are well-equipped, trained and legally empowered. While core areas must be free from all human activities, community-based sustainable development and conservation programmes must be encouraged. Under no circumstances must rules be altered to allow destructive activities such as mining, hydroelectric projects, etc. to affect Protected Areas. Where applicable, relocation of villages must be encouraged.

Asiatic lion *Panthera leo persica*

Cement factories, limestone mining, encroachments, poisoning by locals, religious tourism, poaching and bad land management in the adjoining areas continue to plague the Asiatic lion in its last remaining home – the Gir National Park in Gujarat. A proposal to shift the railway line running through the heart of Gir remains just that – a proposal. The Gujarat Government claims to be proud of its wildlife heritage, yet, permits illegal mining and five-star facilities in the heart of the forest. A ropeway project within the forest built to cater to pilgrims makes a mockery of the *Wildlife (Protection) Act, 1972*. Indiscriminate promotion as a tourist destination has encouraged large numbers of visitors, with the attendant pollution and plastic litter. Topping off the list of worries remains the Gujarat Government's

adamant refusal to relocate some of the lions to the Palpur-Kuno Wildlife Sanctuary in Madhya Pradesh. They claim that the lions are safe in Gujarat despite the fact that the Park cannot sustain the lion population at its current numbers and lions that move into surrounding areas are falling victim to human-animal conflict with local herders. The dilution of the gene pool due to inbreeding and the vulnerability of the isolated population to disease are equally serious threats.

The establishment of a second lion population outside of Gir must be a high priority. Gujarat can prove its pride in its lions by expanding the territory in and around Gir and enforcing strict protection in the Park.



Snow leopard *Uncia uncia*

These elusive and enigmatic cats are adapted to survive cold, harsh climes but not the workings of the human race. A fragmented population of this charismatic felid survives in the wild. Hunted for its beautiful fur, this animal had become a rare sight in the 1970s. A declining prey base – the result of habitat destruction and disturbance – has forced the snow leopard to search for alternate food in the form of domestic livestock. The snow leopard is viewed as an arch predator by locals who do not hesitate to trap, poison or shoot the animal. Herders are also increasingly moving into the snow leopard's territory in search of new pastures. Reports also show that the snow leopard is now being killed for its bones as substitutes for

DRALTI JOHNSINGH

tiger bones in Traditional Chinese Medicine (TCM). No one has yet ascertained how climate change will impact these high-altitude predators.

Apart from habitat protection, anti-poaching patrols and compensation schemes, it is vital that awareness programmes are undertaken. Integrating the needs of locals with those of snow leopards will hopefully secure the future of these graceful animals.

Wolf *Canis lupis*

Two subspecies have been recorded in India, the Indian grey wolf and the Himalayan wolf. Habitat loss due to agriculture and development projects and decreasing prey are the main threats. Wolves are perceived as threats to livestock and are often victims of retaliatory attacks. Only 1,000 to 2,000 individuals survive in the country. The small population of Himalayan wolves is not even recognised in the canid Red List. The wolf in India is accorded Schedule I status under the *Wildlife (Protection) Act, 1972*. Enforcing strict protection of wolf habitats will prevent them from straying to hunt livestock. Recent studies indicate that both Indian wolf populations are unique and different from other wolf populations worldwide. The Himalayan wolf probably represents the most ancient wolf lineage ever recorded. The biological significance of these species requires that immediate steps be taken for their protection.

Asian elephant *Elephas maximus*

Habitat destruction, obstruction of migratory corridors, poaching and human-animal conflict are all serious threats to these pachyderms. In the last decade, populations have rapidly declined. Poaching for ivory has skewed sex ratios and fragmentation of habitats has isolated herds. The number of deaths due to railways and roads through elephant habitats are on the rise. Encroachment of forest areas for agriculture has led to increasing human-animal conflict. Elephants need undisturbed forested areas with sufficient water supply. Project Elephant needs to be re-activated to highlight the seriousness of diminishing elephant populations.

Indian one-horned rhinoceros *Rhinoceros unicornis*

Though strict protection has helped in population recovery in a couple of Protected Areas, poaching for rhino horn and habitat degradation still put them at risk. Conversion of forest land for agriculture and tea plantations, logging, lack of proper management of their grassland habitat, floods and political instability continue to plague the rhino. Increased protection and an end to the illegal trade

in rhino horn and products will benefit populations. If this is combined with extending and improving existing rhino habitat, populations can recover to viable levels.

Asiatic wild ass *Equus hemionus khur*

The remaining 750 to 900 individuals of the Asiatic wild ass are only found in the semi-desert and grassland areas of the Rann of Kutchh, Gujarat. Cattle grazing and conversion of habitat for commercial salt operations are perhaps the biggest threats to the Asiatic wild ass. Vehicular traffic, proliferation of weeds like *Prosopis julliflora*, competition for food from domestic livestock, hunting for meat and prolonged periods of drought have also jeopardised their populations. The Rann is a critically important refuge for the wild ass. Both India and Pakistan have committed to protect a transboundary wetland but efforts must be made to ensure that commerce does not take precedence over wildlife protection.

Golden langur *Trachypithecus geei*

Fewer than 1,000 golden langurs have been recorded. With limited geographic range (Western Assam and Bhutan), their small numbers, small group sizes and scattered populations increase the threat to the species. Assam's forests are being destroyed at an alarming rate thanks to illegal logging and commercial projects. Greater field research on the species and immediate and total protection of their habitat is the need of the hour if the golden langur is to be saved from extinction.



BERNARD CASTELLEN

Hangul or Kashmir stag *Cervus elaphus hanglu*

A subspecies of the European red deer, the hangul has been wiped out of some of its former range, which covered the mountains of Kashmir and the Chamba district of Himachal Pradesh. Today, the animal is only found in the Dachigam National Park and a few isolated pockets in Jammu and Kashmir in India. There has been a drastic fall in their populations and only about 200 of these animals are believed to survive. Insurgency has ensured that there is no protection for the animal even in Protected Areas. Poaching for its meat by militants, security forces and locals has increased. Yet, there are no instances of anybody being prosecuted for killing the hangul. Herdsmen and shepherds are allowed inside Protected Areas, reducing the food available to the hangul. Adding to the dismal news is a recent survey that indicated that the number of young females is extremely low. Political will must be garnered to stem poaching and encroachment. Fawning must be monitored closely and the fawning grounds must



BERNARD CASTELLEN



be well protected. The state's wildlife department must be strengthened both financially and by recruiting sufficient staff.

Wild buffalo *Bubalus bubalis*

Wild buffalo are highly dependent on water. They inhabit low-lying alluvial grasslands, riparian forests and jungles. The species is under serious decline as a result of habitat loss and degradation due to agriculture and other encroachments and competition for food and water with domestic livestock. A number of development projects threaten to submerge what remains of their habitat in central India (see page 44). The future of the wild buffalo is bleak with the pure breeds losing out to hybridisation with domestic and/or feral buffalo and transmission of disease from domestic livestock. If the wild buffalo is to be saved from extinction, its habitat must be given the highest protection.

Lion-tailed macaque *Macaca silenus*

This endemic species is one of the country's most endangered primates and is only recorded in the Western Ghats forests of Kerala, Karnataka and Tamil Nadu. The population is pegged at between 3,000 and 4,000 individuals. Deforestation and fragmentation of its habitat are the major threats to this arboreal species. Power lines, construction of roadways and dams and clearing of forests for teak, eucalyptus, cardamom, coffee and tea have reduced their habitat considerably. They are also hunted for their meat, for the pet trade and use in alternative medicine. Substantial efforts have gone into lion-tailed macaque conservation over the last two decades and this has to be continued to ensure that their populations reach viable levels.

Red panda *Ailurus fulgens fulgens*

The red panda is found in Nepal, Tibet, Bhutan and northeastern India. It is an indicator of the health of the subtropical and temperate forests. It is the state animal of Sikkim and has been reported in six of the state's Protected Areas. The red panda's forests are being destroyed or fragmented due to logging and clearing of forests for firewood and agriculture and construction of roads. Red pandas are also poached for their fur. They are often traded across the Northeast border from where they are transported for the pet trade. In China, red panda hats were given as wedding presents in the past and this tradition is still seen in some regions. With Sikkim believed to hold about 20 per cent of the potential red panda habitat in the country, the first step is to ensure that the Protected Areas in the state are inviolate. A long-term conservation strategy for the animal that also considers red panda habitats outside Protected Areas must be formulated.

Irrawaddy dolphin *Orcaella brevirostris*

The Irrawaddy dolphin inhabits the shallow waters (estuaries, bays, mangrove habitats, brackish water and even mouths of rivers) of southeastern Asia and Australasia. Incidental catch in fishing nets is one of the main reasons for their decline. Direct catch is rarer but there are reports from some areas. Dolphin oil is used for medicinal purposes. The diminishing fish populations due to harmful and illegal fishing techniques directly affect the dolphins. In Chilika, the reduction in food supply and siltation are the main causes of its decline. Harmful fishing techniques and habitat degradation have limited their distribution particularly in fresh water. Motorboats (traffic and noise pollution) are also an increasing threat as are unsustainable tourism and coastal development.

Dugong *Dugong dugong*

In India, they have been recorded in the Gulf of Kutchh, Gulf of Mannar, Palk Bay and the Andaman and Nicobar Islands. Dugongs are long living but have a low reproductive rate. Hence, even a slight change in the rate of survival of the adult population can have a drastic impact. Availability of seagrass, the dugong's main food, is a vital requirement. Destruction of seagrass beds due to sand mining, trawling, dredging and reclamation causes sedimentation and turbidity resulting in degradation of seagrasses. Reduced light intensity because of sedimentation, increased epiphytic growth due to nutrient enrichment and herbicide runoff also affect seagrass. Though Andaman tribes have traditionally hunted dugongs, populations have dropped drastically only in the last few decades due to the combination of habitat loss, disease and incidental drowning in fishing nets and traps. In some countries, dugongs are captured for meat, oil, medicinal use and other products though this is banned in much of its range. More detailed studies are required to identify areas that support dugong populations and minimise the impacts of detrimental projects.

Himalayan newt *Tylototriton verrucosus*

T. verrucosus is the only species of the order Caudata in the Indian subcontinent. It is reported from the mountainous region of southwest China, North Vietnam, Thailand, Burma, Bhutan, east Nepal and northeast India. Although the Himalayan newt is listed under the endangered category of the *Wildlife (Protection) Act, 1972*, the actual conservation status of this species has not been systematically investigated. *T. verrucosus* occurs in all the types of aquatic lentic habitats – permanent ponds, swamps, rain puddles and artificial fishing ponds, but the majority of the

breeding sites are temporary ponds with very low depth. Despite the abundance of *T. verrucosus* in several sites, the habitats are disappearing at a dangerously rapid rate – about 30 per cent of the sites found from 1998 to 2000 were destroyed before June 2002! The most common cause of destruction is draining for cultivation. Furthermore, 50 per cent of the remaining sites are in danger of destruction due to development and economic activities.



DR. TELUKUMAR

Gharial *Gavialis gangeticus*

Gharials are endemic to India and Bangladesh and found only in fresh water habitats. They are recorded in the Ganges, Indus and Brahmaputra river systems. Their limited geographic range accompanied by the continual destruction of their habitat has resulted in their reduced numbers. An intensive conservation programme in the 1970s saw populations rising but recent reports indicate that fewer than 200 survive (see page 96). Habitat availability has greatly declined over the years. It is necessary to maintain large undisturbed riverine tracts if the gharial population is to bounce back. Gharial numbers may help in restoring diminished fisheries as gharials tend to prey on carnivorous fish species rather than those preferred by humans.

Sarus Crane *Grus antigone*

They are best adapted to a combination of small marshes, floodplains, high-altitude wetlands, ponds, fallow and cultivated lands. Though they have adapted to the presence of humans, changing land use patterns, encroachment and degradation of wetlands for agriculture and projects such as the airstrip in Etawah take a severe toll on their populations. Other threats include agricultural runoff, pesticide poisoning and sewage runoff. The future of these birds depends on the health of their wetland habitats.

Great Indian Bustard *Ardeotis nigriceps*

The Great Indian Bustard is found in the arid and semi-arid grasslands of Rajasthan, with smaller populations found in the states of Andhra Pradesh, Maharashtra, Gujarat, Madhya Pradesh and Karnataka. These birds are the best indicators of a healthy grassland habitat. In the past, hunting for sport and food caused a rapid decline in their numbers. Today, fragmentation of their habitat, encroachment for agriculture, increased usage of pesticides and overgrazing by livestock have caused their numbers to dwindle rapidly. Locally extinct from almost 90 per cent of their former range, bad management and government apathy have resulted in the bustard's decline in the very sanctuaries created to protect them. There has been a 50 per cent decline in bustard populations in the last 15 years. Immediate efforts to control poaching and efficient protection of their fragile ecosystems could help revive populations. With just 500 remaining, protection and proper management of grasslands must be initiated on a war footing.



DR. AJIT DESHMUKH

Jerdon's Courser *Rhinoptilus bitorquatus*

The Jerdon's Courser was rediscovered near Reddipalli village, Cuddapah district in Andhra Pradesh in 1986. Rediscovery prompted the declaration of the area as the Sri Lankamaleswara Wildlife Sanctuary. The bird was later also recorded in the adjacent foothills and this area was then declared as the Sri Penusula Narasimha Wildlife Sanctuary (SPNWLS) – both now designated as Important Bird Areas. Despite the protection accorded, their survival depends on keeping their habitat intact and free from human interference. The Telugu Ganga Canal rears its head on a continuous basis to threaten the Jerdon's Courser. Development projects here could wipe out this last population of the bird. Quarrying, firewood collection and illegal grazing also continue unabated.



BERNARD CASTEEN



tear
& throw

gnit
rome



This beautiful cat has used up almost all its proverbial nine lives. More leopards are being killed today than tigers. The recent discovery of skins in Tibet gives us even more reason to fear for the future of India's big cats. At ABN AMRO we give wild cats an extra edge on life by encouraging and honouring those who protect them through the Sanctuary-ABN AMRO Wildlife Awards. We have also launched the CAT-ABN AMRO Environmental Education Programme, in collaboration with Conservation Action Trust (CAT), to provide young Indians with a leg up on the way to their green horizons.

because people can make a difference

Making more possible



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Sarpgandha *Rauwolfia serpentina*

R. serpentina requires a minimum of 2,500 mm. of rainfall and grows in humus-rich soils with good drainage. It is therefore always found on the periphery of rainforests where it gets an adequate amount of shade. The natural reserves of Sarpgandha are declining, especially after reports of its medicinal properties appeared. The drug of *Rauwolfia* consists of air dried roots, which according to Ayurveda is bitter, acrid, pungent and antihelminthic. *Rauwolfia* preparations are used as antihypertensives and as sedatives. It is also used for the treatment of various central nervous system disorders associated with psychosis, schizophrenia, insanity, insomnia, and epilepsy. This puts tremendous pressure on the plant in its entire range. Unless our government invents a severe regulatory mechanism to curtail this vast ranging small-scale trade, it will be impossible to save Sarpgandha from extinction.

Forest Owlet *Athene blewitti*

Believed to have been extinct for more than a century, the Forest Owlet was rediscovered in 1997. *Athene blewitti* is endemic to central India and has been recorded in Melghat and the adjoining forests of Betul and Burhanpur districts in Madhya Pradesh. Taloda in the Toranmal Reserved Forest is another important Forest Owlet habitat. 2,700 ha. of forest from Taloda has been felled, however, to accommodate Sardar Sarovar Project oustees. 526 sq. km. of prime Forest Owlet habitat in Melghat was denotified under the pretext of benefiting locals though 244 ha. of this area will now be submerged by the proposed Upper Tapi Irrigation Project II. Unless its habitat is protected, we could lose the Forest Owlet again.

Bengal Florican *Houbaropsis bengalensis*

Once common in the dry lowlands, or seasonally-inundated grasslands, their numbers have fallen drastically. They have been recorded from Uttar Pradesh through Nepal to Assam and Arunachal Pradesh. Modification of grasslands through drainage, conversion to agriculture and overgrazing are the major threats. Trampling of ground nests by livestock has also affected populations. The loss of its grassland habitat due to encroachment and poor management is pushing this beautiful bird to the very brink. Existing populations must be monitored closely and grassland management such as rotational burning must be undertaken.

Nicobar Megapode *Megapodius nicobariensis*

The Nicobar Megapode is endemic to the coastal and secondary forests in the Nicobar Islands. Recorded on all except the islands of

Car Nicobar, Pilo Milo and Chaura, the Nicobar Megapode is highly endangered. The 2004 tsunami could have destroyed almost 40 per cent of its breeding habitat. Conversion of land for coconut, banana and cashew plantations and rice-paddy cultivation, development of roads and other projects has led to the fragmentation of its habitat. Hunting and egg-collection are also common in some areas.

Vultures – White-backed *Gyps bengalensis*, Slender-billed *Gyps tenuirostris* and Long-billed Vulture *Gyps tenuisostriis*

Populations of vultures belonging to the genus *Gyps* have shown a sharp decline (more than 97 per cent) over the last 10 to 15 years in Southeast Asia. The main culprit is believed to be Diclofenac – a painkiller and an anti-inflammatory drug used in cattle, which causes fatal liver damage in vultures when they feed on the carcasses. Though the government has banned the drug, only time will tell if populations will recover. Loss of nesting trees due to logging has also affected their populations. Much needs to be done, particularly the protection of vulture habitats, to help revive vulture populations.

Lady's Slipper Orchid *Cypripedium calceous*

There are about 1,300 orchid species in India and 800 of these grow in the Northeast. One of the most endangered ground orchids is the *Paphiopedilum sp.* or the Venus or Lady's Slipper. Most of the *Paphiopedilum* species are found in Northeast Himalaya except *P. druryi* which was once widely found in Kerala but is now difficult to trace. Land-use patterns, *jhumming*, deforestation, overcollection and exploitation of forest resources have pushed many orchid species to the brink of extinction. Habitat destruction not only destroys the orchid but also its pollinators, other plants and fungi that they depend upon. Trafficking in many varieties of slipper orchids is forbidden by the Convention on International Trade in Endangered Species (CITES) and most countries have banned collection and export of native plants. 🐼

OTHER CONTENDERS

- Nicobar tree shrew *Tupaia nicobarica*
- Namdapha flying squirrel *Biswamayopterus biswasi*
- Sálim Ali's fruit bat *Latidens salimali*
- Marsh mongoose *Herpestes palustris*
- Nilgiri tahr *Hemitragus hylocrius*
- Sangai or brow-antlered deer *Cervus eldii eldii*
- Barasingha *Cervus duvaucelii cuvier* and *Cervus duvaucelii branderi*
- Malabar large spotted civet *Viverra civettina*
- Pygmy hog *Sus salvanius*
- Hispid hare *Caprolagus hispidus*
- Markhor *Capra falconeri*
- Arunachal macaque *Macaca munzala*
- Capped leaf monkey *Trachypithecus pileatus*
- Hoolock gibbon *Bunopithecus hoolock*
- Asiatic golden cat *Felis temmincki*
- Marbled cat *Pardofelis marmorata*
- Clouded leopard *Neofelis nebulosa*
- Clawless otter *Anonyx cinerea*
- Himalayan musk deer *Moschus chrysogaster*
- Serow *Nemorhaedus sumatraensis*
- Dhole *Cuon alpinus*
- Ganges river dolphin *Platanista gangetica gangetica*
- Edible Nest Swiftlet *Collocalia fuciphaga*
- Leatherback turtle *Dermochelis Coriacea*