



UJUNG KULON, LAND OF THE JAVAN RHINO

By KATHY MACKINNON

Situated on Java's westernmost point, the 76,000 hectare Ujung Kulon National Park is Indonesia's premier reserve and one of the few remaining wilderness areas on the densely populated island of Java. The park includes the Ujung Kulon peninsula (39,000 hectares) connected by a narrow isthmus to the Gunung Honje reserve in the east, as well as the offshore islands of Peucang and Panaitan with their coral gardens. Protected on three sides by the sea and to the east by Gunung Honje, Ujung Kulon provides a last refuge for some of Java's unique wildlife on an island where 100 million land-hungry people have cleared almost all of the original lowland forests. The palm-rich and rattan-tangled swamp forests of Ujung Kulon provide sanctuary for one of the world's rarest animals, the Javan rhino (*Rhinoceros sondaicus*). Given the tourism

potential of Ujung Kulon, it is appropriate that the Javan rhino has been chosen to be the symbol of Visit Indonesia Year 1991.

WILDLIFE REFUGE. As early as 1854 the Dutch naturalist, Jungjuhn, drew attention to the rich wildlife of this remote corner of Java. The area was earmarked as a nature reserve by the Dutch colonial government in 1921 and became a favorite of the administrator, Hoogerwerf, the "godfather" of conservation in Indonesia. In 1980 the Ujung Kulon National Park was created to include the Ujung Kulon region, the offshore islands and the smoking volcano of Krakatau in the Sunda Straits between Java and Sumatra.

Most visitors reach Ujung Kulon by sea from Labuan, a trip that may be enlivened by the charming company of a playful school of dolphins. With the completion of the new road





CONTROL OF THE ENVIRONMENT

CONTROL OF THE ENVIRONMENT – A RIGHT OR A RESPONSIBILITY? Why are such large numbers of animals disappearing? Sadly, the causes are almost always related to man and his activities. Habitat is being destroyed for agricultural purposes or harvested commercially for timber. Air, land, and water are becoming polluted by man's wastes. Poaching of animals for sale in the pet trade is common, and killing of animals outright for their body parts or merely for sport often occurs.

Wherever people and wild animals need to coexist, it is inevitable that problems will arise. It is understandable that people at the lower end of the



economic scale and whose main concern is daily survival will have little time to contemplate nature's beauty or appreciate the uniqueness of a rhinoceros or wood-thrush. And yet, rural people have traditionally existed in harmony with nature. It is only recently,

with increasing population pressure or, in anticipation of monetary gain, that this balanced co-existence has broken down and been replaced with massive destruction of natural areas.

Since man has recently developed the technology and the power to dominate the rest of the living world, a crucial question has arisen: Does man have the right to decide which other species should be allowed to live or not? Apparently, many have answered, "yes."

On the other hand, there are many practical reasons why man should work to preserve the other species with whom he shares the planet. For instance, nature provides man with his sources of foodstuffs, medicine, and industry with its valuable raw materials. It is becoming clear also that all life is interdependent, and to destroy one part of the ecological chain may contribute to the eventual destruction of the whole system and, ultimately, of man himself.

For some the argument is even more basic – man does not have the right to destroy other forms of life. There are those who believe that along with the preeminence which man has achieved comes a moral responsibility which must be accepted – to preserve other species. It is precisely because we have the power to destroy them that we must respect the rights of our co-inhabitants of Earth. For those who believe that man has a responsibility to protect the balance of life, the choice for conserving is clear. □ Joan Nishihara



from Labuan to Taman Jaya, the park is now accessible by road, even if the last few kilometers can be somewhat rough. From Taman Jaya the visitor can enter the park by boat to the islands of Handeuleum or Peucang or take the more adventurous overland trip, walking for several days along the south coast before crossing the peninsula to Peucang. The rainforest-clad slopes of Gunung Honje ring with the early morning duets of grey Javan gibbons while chattering surili leaf monkeys scatter for cover. Green turtles nest on the white coral sands of the south coast, and wild pigs and monitor lizards scour the beaches, scavenging for turtle eggs.

The Ujung Kulon landscape was shaped by a dramatic volcanic eruption in 1883 when the



Numerous streams wind and tumble down from the slopes of Gunung Payung to the sea. A trip up the Cigenter by canoe is an enjoyable pastime, gliding quietly over the gently flowing waters, winding among the nipa palms and tree-fringed forests. Perhaps one will see a sleeping python wound round an overhanging branch or a lazing young monitor lizard enjoying the morning sun. A splash, a ripple and a crocodile sinks from view. These rivers are favorite wallows for the elusive rhinos, though one rarely sees more than a three-toed footprint or mudslide to mark the passing of the great beasts.

Ujung Kulon is a paradise for birds, from the forest-ranging hornbills to tiny sunbirds, tailorbirds and flowerpeckers. More than half



island of Krakatau was rent apart by a great explosion. After the explosion came tidal waves which wiped out human settlements along the coast, resulting in massive loss of life. A few survivors were able to take refuge in the lighthouse at Tanjung Layar. The low-lying coastal forests of Ujung Kulon were swamped and destroyed by these tidal waves. Evidence of this destruction is still to be found in the dense thickets of rattan and salak palms and the ginger and bamboo plants that have recolonized abandoned ricefields and forest clearings. This is ideal habitat for the thick-skinned Javan rhino and the handsome *banteng*, wild cattle which browse on the tangled undergrowth. Several open grazing grounds are maintained within the park at Cigenter and Ciujungkulon, and here the *banteng* graze in the early morning and late afternoon. The honey-colored cows and calves are escorted by protective bulls, handsome beasts with black coats and white socks. Occasional deer emerge onto the feeding grounds or stray onto the beach, and courtly peacocks and green junglefowl strut in the close-cropped pastures.

the birds found in Javan occur in the park. Waterbirds and herons stalk the river shallows and the wetlands of the Niyur swamps. Kingfishers haunt the river banks and mangrove forests of the north coast, where mudskippers scoot across the exposed mud flats. Archerfish lurk among the tangled mangrove roots, ready to shoot down any unwary fly that comes within range. Offshore, gorgeously-colored coralfish flit among the coral gardens and enormous lobsters peer from rock crevices, tempting local fishermen to break the rules and harvest them in the park.

Scenically the park is outstanding, with dazzling white coral beaches, lofty rainforest, buttressed giant trees, the twisted latticework of strangling figs and the amazing plant life of the forest floor — delicate fungi, intricate palm fronds, scarlet ginger flowers, and the twisting lianas which wind their way up to the crowded canopy. As the early morning mists drift around the slopes of Gunung Honje and Panaitan the forests wake to the rustling explorations of the timid *nusa* deer and the squabbles of troops of cheeky long-tailed

macaques. Primeval monitor lizards plod around the Peucang and Handeuleum guesthouses, scavenging for scraps. This is a far cry from the overcrowded and polluted streets of Jakarta and the densely populated ricelands of northern Java, a reminder of how the island once must have been before human influence wrought such extensive changes.

UNDISTURBED WILDERNESS. There can be few parts of the world that have been inhabited longer or witnessed more human migrations than the island of Java. Probably Ujung Kulon was inhabited from early times, though now there are few signs of such past occupation. Settlements on the island of Panaitan are recorded in the journals of James Cook in 1771 on his circumnavigation of the globe. The island bears evidence of even earlier settlement, two 16th century Hindu statues discovered on the summit of Gunung Raksa. Certainly at the time of the Krakatau eruption there were several coastal villages practicing shifting cultivation and dryland-rice agriculture within the present park boundaries.

The 1883 eruption of Krakatau was one of the most dramatic natural catastrophes in historical times. Krakatau is only 60 kilometers from Ujung Kulon, and an eruption that was registered worldwide could not fail to leave a lasting impact on the nearby peninsula. Huge tidal waves, 10 to 15 meter-high walls of water, swept all before them in the coastal zone: crops, settlements, villagers and forests. The rain of ashes that accompanied the explosion smothered the peninsula and its vegetation and made the land much less productive for shifting agriculture. As a consequence the human population of Ujung Kulon declined and the region's wildlife benefitted further when the government decided to evacuate all remaining villages because of the dangers from malaria and man-eating tigers. Today the park's wildlife is under pressure again with agricultural encroachment nibbling away at the eastern boundaries of the forest.

JAVAN RHINOS. Sadly, the Javan tiger was eradicated from Ujung Kulon by 1965. For the Javan rhino things look more promising. Like rhinos worldwide, the Javan rhino has suffered terribly from habitat loss and from poaching for its valuable horn. Once Javan rhinos were found from Assam to Indochina and as far east as Kediri in Java. By 1900 Javan rhinos had been hunted to extinction in Sumatra and remained only in Ujung Kulon in Indonesia. Today only two populations of Javan rhino are known to survive, in Ujung Kulon National Park (where about 60 animals remain) and in

Nam, Cat Tien National Park in southern Vietnam where there are estimated to be 5-15 animals. This makes the Ujung Kulon population very precious indeed.

For a time it seemed that even in Ujung Kulon the rhinos might not be safe. Between 1929 and 1967, when protection of the reserve was weak, poachers killed at least one animal every year for its horn. Rhino horn is used in Chinese medicine as a cure-all for many diseases, even though it has no proven pharmaceutical value. Indeed it would be



surprising if it were effective medicine since rhino horn consists of keratin, the same material as human fingernails.

By 1965 the number of Javan rhinos in Ujung Kulon had declined to 25. Since then the Directorate General of Forest Protection and Nature Conservation (PHPA) and the World Wide Fund for Nature (WWF) have worked together to strengthen the protection of Ujung Kulon National Park and stop poaching. With better protection and management the rhino population increased again to 52 animals in 1980. Unfortunately five rhinos died in 1981/1982, possibly as a result of disease introduced

Their natural habitat is the most suitable place for Javan rhinos to live. Removing them from their habitat for breeding purposes entails certain dangers.



who" in the rhino population. The survey should also provide useful information on other rare and endangered animals within the park such as wild dogs, *banteng* and leopards.

One of the reasons why such a survey is needed is that there has been speculation that the rhino population may be at carrying capacity in the peninsula, that there is no room for more rhinos. If this were the case then there might be an argument for removing a few rhinos for translocation to another reserve within the species' former range. Alternatively, better protection of the Gunung Honje area in the east to minimize human disturbance there would allow rhinos to return to range in a habitat where they were known to occur in the past.

THE ZOO OPTION. Some members of the international zoo community have even gone one step further and have suggested an ambitious captive breeding program for Javan rhinos. This proposal is probably the most risky from a conservation point of view. Since there are no Javan rhinos in captivity, all animals for the breeding program would have to be captured from the wild and removed from Ujung Kulon. Capture operations would be extremely disruptive to the wild population, both because of the dangers involved in trapping and the very large number of rhinos needed to establish a founder population in zoos. Removing 18 to 26 rhinos, as has been suggested, might remove most of the breeding animals from the park.

Trapping and transporting large mammals such as rhinos entails certain risks. A similar program already underway in Malaysia and Indonesia to capture "doomed" Sumatran rhinos, trapped in isolated forest blocks, has so far resulted in the taking of 27 rhinos. Of these, nine have since died, even with the greatest care being taken for the welfare of the animals. Mortality levels of 30 percent are clearly unacceptable for a species as rare as the Javan rhino. Nor is there any guarantee that captured animals will breed in captivity. Although the Sumatran rhino program has been running for five years, the only baby born in captivity came from a female already pregnant when captured. Even if zoo captive breeding schemes do succeed there may be problems with returning captive-bred young to the wild because of the feeding and behavioral traits of the rhinos. Furthermore, any reintroduction schemes are dependent on there still being wild habitats where captive-bred animals can be released. This means that habitat protection must continue whether or not captive breeding schemes are instigated. The zoo option is still



(Above) The Javan rhino (*Rhinoceros sondaicus*) at Ujung Kulon National Park.

(Below) Thirty six automatically triggered cameras has been set up on points of location where rhinos most likely will pass by.

by domestic cattle entering the park. Recent censuses confirm that the population seems to have recovered and is currently stable at about 57 animals.

PHOTO SURVEYS. The terrain and thick vegetation of the park make it difficult to observe large elusive mammals such as rhinos. Population censuses have, therefore, had to rely on track counts. Although this is a very crude way of determining animal numbers, repeated surveys have provided information on population trends. In January 1991 WWF and the PHPA initiated a new survey technique in an attempt to collect information on recognizable individual rhinos and their ranges. Forty cameras have been positioned along a grid system throughout the peninsula. Each camera is triggered by a pressure mat set to take a photo when an animal of a certain weight passes over the mat. In effect, the rhinos and other large mammals will take their own photos. This survey will continue over several months to provide a portrait gallery of "who's

under discussion. For the moment the safest, cheapest and easiest way to conserve Javan rhinos is to protect them in their natural habitats.

FLAGSHIP SPECIES. Greater investment in Ujung Kulon and more effective management of the park will benefit not only the Javan rhino but hundreds and thousands of other species from leopards to tiny insects and microfungi. Ujung Kulon is one of the best known and most beautiful of the Javan parks, a national refuge of global importance. It protects one of the last remaining fragments of lowland rainforest on Java and more than 50 species of rare plants, some recorded only from this locality. As well as the Javan rhino, the park harbors such rare and endangered species as the wild dog, leopard, *banteng* and three endemic primate species which occur only on Java: the Javan gibbon, the Javan lutong and the Javan surili. More than 250 birds are recorded from the park as well as populations of rare amphibians, fish and reptiles such as crocodiles

and marine turtles. Using the Javan rhino as a "flagship" species attracts attention and funding to the park and helps to conserve a unique area of Javan wildlife.

The Indonesian government's efforts to save the Javan rhino and protect Ujung Kulon National Park are receiving considerable international attention. WWF has a long-term commitment to Ujung Kulon. The New Zealand government is providing technical assistance to further improve park management. The Minnesota Zoo (U.S.A.) has donated field equipment to strengthen park protection as part of an "Adopt a Park" scheme to provide assistance for *in situ* conservation. The story of the Javan rhino is one of success and a tribute to the Indonesian government's commitment to conservation. Alone among the nations of Southeast Asia, Indonesia has managed to preserve a viable population of one of the rarest of all mammals in one of the most beautiful parks in the region, Ujung Kulon, Land of the Javan Rhinos. Pictures by Alain Compost

UJUNG KULON FACTS

Area: 76,000 hectares

Altitude: 0-570 meters, the highest point being Gunung Honje. Other hills are Gunung Payung (480 meters) and Gunung Raksa (320 meters).

Main habitat areas: Lowland rainforest; freshwater swamp and swamp forest; mangroves; and coral reefs. There is an excellent lowland rainforest on Peucang Island. More than 50 rare plants occur in the park.

Mammals: At least 40 species have been recorded from brief surveys, including 3 endemic primates. Mammals of special interest are the Javan gibbon* (*Hylobates moloch*), the Javan surili* (*Presbytis comata*), Javan lutong* (*Trachypithecus auratus*), Javan rhino (*Rhinoceros sondaicus*), banteng (*Bos javanicus*), leopard (*Panthera pardus*), wild dog (*Cuon alpinus*), binturong (*Arctitis binturong*), small-toothed palm civet (*Arctogalidia trivirgata*), Oriental small-clawed otter (*Aonyx cinerea*), hairy-nosed otter (*Lutra sumatrana*), flying lemur (*Cynocephalus*

variegatus), and Javan tree shrew* (*Tupaia javanica*).
(* - endemic species)

Birds: More than 250 birds have been recorded, over half the Javan list. Birds of special interest include 3 species of hornbills, 8 species of kingfishers, 8 species of bulbuls, and 10 species of babblers. Other species identified are: green peafowl (*Pavo muticus*), green junglefowl (*Gallus varius*), white-winged wood duck (*Cairina scutulata*), and edible nest swiftlet (*Collocalia fuciphaga*).

Other animals of interest: Saltwater crocodile (*Crocodylus porosus*) and green turtle (*Chelonia mydas*).

Park headquarters: Presently at Labuan, but will move to Taman Jaya in 1992. There are 70 staff members. The park is open all year.

Guest facilities: There are guest houses on Pulau Peucang and Pulau Handeuleum and plans are underway for tourist cottages on Panaitan. Permits can be obtained and accommodations booked at Labuan.

Access to the park: Visitors can travel by boat from Labuan to Peucang (6-7 hours) or to Handeuleum (2 hours). Transportation by road from Labuan to Taman Jaya takes 3 hours. The park can also be reached by canoe (*prahu*) or on foot.

Trails: There are good trails across Pulau Peucang (2 kilometers); from Citadahan via Cibunar (10 kilometers); from Cidaon to Tanjung Layar (7 kilometers); from Cidaon to Tanjung Alang Alang (22 kilometers); from Alang Alang to mouth of Cigenter Rver (25 kilometers); from Karangrancang to Cibandowoh (6 kilometers); from Karangrancang to Kalejetan (8 kilometers); and from Kalejetan to Cikawung (10 kilometers). Total 90 kilometers.

Rainfall: Rainy season is from October to April with rainfall at about 3,250 millimeters per year. The highest amount of rainfall is in December, 474 millimeters recorded. The driest month July, with only 130 millimeters rain.

Number of visitors to the park: There are about 3,000 local and foreign visitors a year.