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The Rhino Conservation Newsletter

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JAVAN RHINOCEROS IN VIETNAM

By Charles A. Santiapillai

The Javan rhino (*Rhinoceros sondaicus*) was once widely distributed in the northern and southern parts of Vietnam. Although even as late as 1969, there was some skepticism as to whether or not Javan rhinos occurred in Vietnam, there had been sporadic reports of their presence in the south from hunters and tribal people. Then in 1988, one animal was killed by a Stieng minority tribesman and the skeleton was taken to Hanoi where it rests today at the Ministry of Forestry. That it had survived the war and destruction wrought on its habitat by bombardment and defoliation is in itself proof to its remarkable ability to survive.

In March, 1991, a survey was carried out in the Lam Dong province (about 150 km northeast of Ho Chi Minh City (Saigon) along the Dong Nai River in an area where the four provinces of Lam Dong, Dong Nai, Song Be and Dac Lac meet). This area of 35,000 ha of lowland forest represents the last stronghold of the Javan rhino of Vietnam where it is estimated that between 8-12 animals may still survive. It is a shy animal often retreating to dense forests to escape from poachers. While this characteristic is of survival value and therefore to be welcomed by conservationists, it also makes it an extremely difficult species to study scientifically. Much of the information about the number, range and food habits of the rhinos was derived indirectly from the foot prints, trails, wallows and dung. Much of what is known about its biology is still derived from the incidental observations of the tribal people and poachers.

The altitude range of the mountains of southern Vietnam is such that most of the area in Lam Dong province along the Don Nai River is rich

habitat for the rhinos. A preliminary study of the dung revealed the presence of undigested plant material some of which could be identified. Among the plants eaten by the Javan rhino in Vietnam were *Acacia pennata*, *Calamus poilanei*, *Calamus tetradactylus*, *Combretum* sp., *Bambusa procera*, *Bambusa bluemeana*, *Plectocomia elongata* and *Daemonorop nigro-ciliata*. In addition, rhinos may be feeding on wood fern (*Cyathea* sp.). Rhinos are known to break down toxic plant material in their stomachs and so it was not surprising to find out that in Vietnam among the plants that the Javan rhinos ate was one of the highly poisonous species, *Strychnos nux-vomica*.

The most serious threat facing the Javan rhino population in Vietnam is poaching. One of the unpleasant legacies of the war is the ready availability of guns and rifles. Many minority tribal people carry guns as they hunt wildlife for meat. Given the high price rhino horn fetches on the international market, the Javan rhino in Vietnam is worth more dead than alive to some Chinese middlemen in Ho Chi Minh City who trade in rhino horn.

Logging *per se* is not a serious direct threat to the Javan rhinos in their habitat which is rich in commercially important timber species belonging to the family Dipterocarpaceae. The Vietnamese system of timber extraction stipulates the removal of only those trees that are about 60 cm in diameter at breast height and a cutting cycle of 35-40 years. Logged areas in fact offer some of the best habitats for the rhinos and other large herbivores. The threat to the rhinos from logging is indirect and is attributable to the fact that the logging roads provide

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poachers with easy access to hitherto inaccessible places.

Another threat comes from the slash and burn agriculture practiced by almost all of the tribal people resident in the area. The fires set by the farmers could easily spread into the core area of the rhinos especially during the dry season when there is so much combustible plant material around. Shifting cultivation is identified as one of the prime agents of forest destruction.

Much emphasis is placed on inbreeding depression in small populations. While the effects of inbreeding depression are real, they are often transitory in nature. Not all small populations are doomed contrary to what some zoos would like us to believe. The effects of inbreeding depression can be minimized if numbers recover quickly from bottlenecks. The population of about 40 wild cattle at Chillingham in northern England is fit and thriving after 800 years (about 120 generations) of continuous inbreeding, which has included bottlenecks of one female and one male in 1760 following an epidemic, and 8 females and 5 males in 1947 following an arctic winter. Equally striking is the case of the collared lizards of the Ozarks where colonies of about 40 animals have experienced 4,000 years (about 2,000 generations) of inbreeding.

The first priority as far as the conservation of Javan rhinos in Vietnam is concerned is to protect the habitat and eliminate the threat of poaching. It is also proposed to link up the 35,000 ha rhino area with the adjoining 45,000 ha Nam Bai Cat Tien National Park and provide a buffer zone around the rhino area to increase the total area to about 100,000 ha and declare the entire unit as a Man and Biosphere Reserve. More detailed surveys of adjoining areas are planned in an effort to determine the range and number of the Javan rhinos in Vietnam. Stricter penalties need to be meted out to persons killing rhinos or trading in rhino products. The conservation of the Javan rhino, if it is to succeed, should have the support of the local people, especially those who live along the fringes of the rhino habitat whose livelihood depends on the rational use of forest resources.

The Javan rhino in Vietnam is well adapted to respond to a "Sanctuary Strategy". The small population in Lam Dong province can become viable and so must be protected and not abandoned on the hypothesis that genetic degeneration will set in and automatically eliminate them.

RHINO FORENSICS

The National Fish and Wildlife Service's Forensics Laboratory in Ashland, Oregon is working on developing methods to assay various commercial items, such as Chinese medicines, in order to verify the presence of rhino horn. Another goal is to be able to determine the species when a whole rhino horn has been seized by one of their port inspectors.

In order to develop methods which will be usable in court, they need to examine as many samples of known rhino horn as possible, so that results will be statistically valid. They are seeking samples from rhinos in captivity as well as wild rhinos in their natural habitats. The samples can be scrapings or pieces. While milligram quantities are usable, larger quantities are more useful.

Because of the use of water buffalo horn and saiga antelope as potential substitutes for rhino horn in Chinese medicines, horn samples from those two species are desired as well.

If you are in a position to provide horn samples for this purpose, please contact Dr. Kent Oakes, Senior Forensics Specialist, at (503) 482-4191. He will provide you with data collection sheets to accompany each sample, and will also help obtain the permits necessary for shipping the samples.

DVUR KRALOVE UPDATE

A 26-year-old female northern white rhino (*Nasima*) at Dvur Kralove Zoo has in all probability been lost for future breeding efforts. Last summer she suffered a prolapsed vagina in her tenth month of pregnancy and aborted a well-developed female fetus. Although she responded well to treatment, there is a high risk of a recurrence of the condition with a future pregnancy.

Two younger females at Dvur Kralove have started to come into estrus. One of them, a 9-year-old born at Dvur Kralove, has been mated and is believed to be pregnant. Zoo officials are hopeful that breeding of northern whites will continue at Dvur Kralove despite the unfortunate loss of *Nasima* as a potential breeder.