

Javan rhinoceros in Vietnam

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Two species of rhinoceros—the Javan and the Sumatran—once inhabited Vietnam but the Sumatran rhinoceros apparently became extinct there early this century and by the late 1960s it was feared that the Javan rhinoceros probably no longer occurred there either. Then, in November 1988, a hunter shot an adult female rhinoceros about 130 km north-east of Saigon. He was arrested when he tried to sell the horn and hide. In early 1989 the authors were conducting wildlife surveys near where the killing took place and they took this opportunity to check the status of the species. They found evidence that perhaps 10–15 Javan rhinoceros still survive in Vietnam. As a result of this discovery the Vietnamese Government has set up a Rhinoceros Conservation Group.

During the nineteenth century the Javan rhinoceros *Rhinoceros sondaicus* was distributed from Bangladesh east through Burma, Thailand, the Malaysian Peninsula and Indo-China to Sumatra and Java. Hunting decimated the species rapidly and to such an extent that, in the early decades of this century, only one known population survived, that in the Ujung Kulon National Park at the western tip of Java where no more than 50 individuals remain today (Sajudin and Lusli, 1986). In addition it was thought that a few animals might persist in Thailand, Laos and Cambodia (McNeely and Laurie, 1976), as well as in Vietnam* (Talbot, 1960; Rookmaaker, 1980; Penny, 1988). Indeed, evidence for the presence of Javan rhino in Vietnam has been found repeatedly in recent decades, but wars and other problems have prevented this information from becoming widely known. Van Peenen (1969), for example, wrote that 'at present there probably are no living members ... in South Vietnam, although as recently as the 1920s rhinoceroses were hunted not far from Saigon'.

In November 1988, a hunter of the Stiang tribal minority shot an adult female rhino near the Dong Nai River in the Bao Loc District of

* The Javan rhinoceros in Vietnam may be a different subspecies, *Rhinoceros sondaicus annamiticus*, from that found in Java *R. s. sondaicus* (Groves and Guerin, 1980).

western Lam Dong Province about 130 km north-east of Ho Chi Minh City (Saigon). Having taken the horn and hide to town for sale, he was arrested for killing a legally protected species and was given a 1-year jail term (commuted after 2 months). In February and March 1989, while conducting wildlife surveys in eastern Song Be Province near where the killing took place, we were shown the horn (height 4 cm) and a piece of skin of the dead animal. We took this opportunity to check on the status of the species. Field work was conducted along 15 km of the Dong Nai River valley where it forms the border between Song Be and Lam Dong provinces, and along parts of the Mada River (Figure 1). In addition we asked hunters, local officials and others if they had recently seen or heard of rhinos in the region.

Distribution and status

Both Javan rhino and Sumatran rhino *Dicerorhinus sumatrensis* once occurred in Vietnam, but the latter apparently became extinct there early this century. By contrast, Javan rhinos maintained a wide distribution in northern, central and southern Vietnam until the 1930s and 1940s, judging by accounts of foreign hunters and other travellers (Groves, 1967; Dang, 1986). Published records after

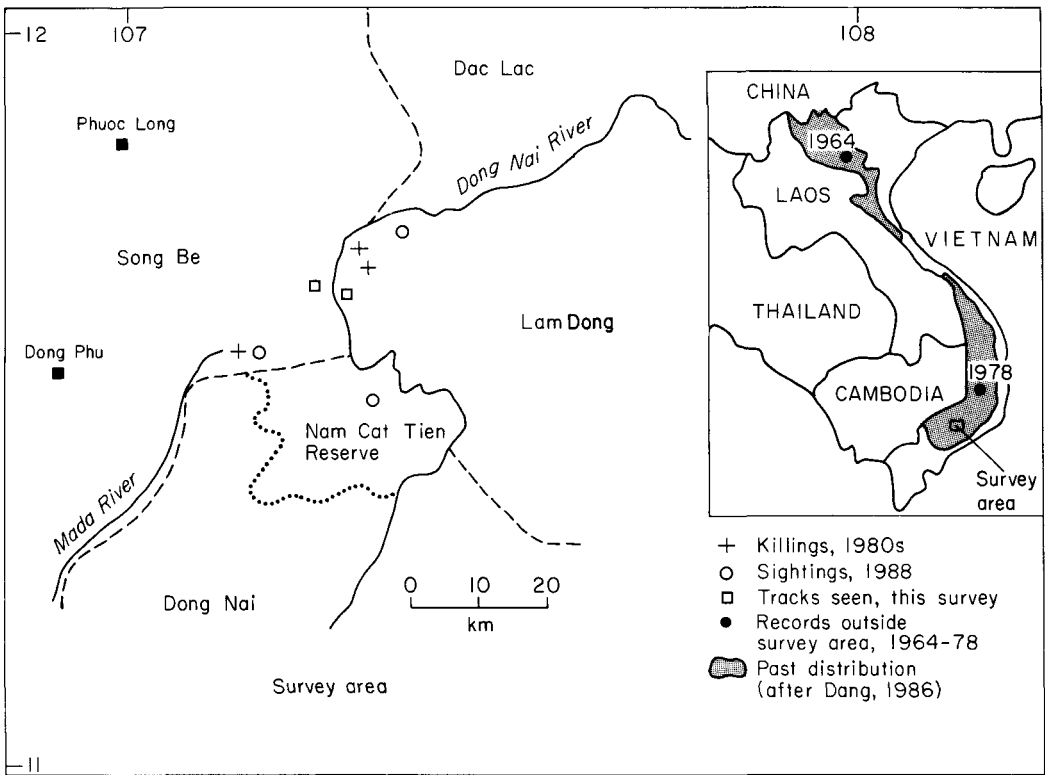


Figure 1. Former distribution of Javan rhinoceros in Vietnam (inset) and current distribution in the Dong Nai River area.

1950 are scarce. Dang (1986) mentions three such records from Vietnamese scientific journals: rhino tracks were observed in 1964 in Son La Province, the last such observation from northern Vietnam; the remains of a rhino were seen near Darmil in Dac Lac (Darlac) Province in 1978; and one rhino was killed near Phuoc Long in Song Be Province in 1962 (Figure 1).

Except for the one 12-year-old record from Dac Lac Province, all recent evidence of rhinos comes from the Dong Nai River area where we conducted our survey (Figure 1). This river touches the borders of four provinces—Dac Lac, Lam Dong, Song Be and Dong Nai—as it winds through a range of low hills, which to the south and west soon give way to undulating terrain. Elevations range from about 100 to 300 m. Tropical semi-evergreen rain forest once covered the region. Trees of the genus *Dipterocarpus* are the dominant evergreens and

Lagerstroemia tomentosa is conspicuous among the deciduous species. Centuries of shifting agriculture by Stieng, Mnong and other tribal peoples have destroyed much of the primary forest. Abandoned fields do not revert to forest but become covered with tall (up to 15 m) stands of a bamboo *Schizostachyum*, which may cover large tracts in dense stands. This mosaic of forest, bamboo and ephemeral fields harboured many rhinos as well as much other wildlife until the 1960s, according to our informants. Rhinos extended west almost to the town of Dong Phu at that time. Tran Ngoc Khanh told us that as a revolutionary soldier he and his comrades once saw an aggregation of 14 rhinos and another time 20 and that they shot four of these. Nguyen Quoc Thang (unpub. data, 1987) reported that soldiers killed at least 17 rhinos between 1952 and 1976 in what is now the Nam Cat Tien Reserve. With the revolutionary army from northern Vietnam based for over

a decade in these forests and the American military bombing them and spraying vegetation with Agent Orange and other defoliants, wildlife declined rapidly. By war's end in 1975, the rhino had almost been exterminated.

Nam Cat Tien was established as a reserve in 1978. A survey team of the provincial forest department found tracks of 3–4 rhinos the following year (Nguyen Quoc Thang, unpub. data, 1987). Tracks were also occasionally reported there in the 1980s (Thai, 1987; Dang, 1988), and a female with young was observed by a reserve guard in 1988 (Doan Canh, pers. comm., 1989).

One rhino was killed in 1986 or 1987 just north of the reserve around the headwaters of the Mada River. We saw fragments (horn, tooth, hoof, skin, bone) of it, presumably all from the same animal, in the possession of two people who used them for medicinal purposes. A pair of rhinos, probably a female with young, was reported from the same area in 1988 by several people. One rhino was killed in Lam Dong Province north of the reserve in about 1980 (Dang, 1986), not far from where the female was killed in 1988. Tracks of a solitary individual were also

observed there in late 1988 (Figure 1).

We examined tracks on two occasions, on 25 and 27 February 1989, most likely of the same animal. In the first instance, a rhino had crossed an abandoned field, moving from forest to bamboo thicket on a ridge about 5 km west of the Dong Nai River; in the second, it had crossed the river and left deep footprints in the muddy bank.

The distribution of the rhino based on these records encompasses no more than 750 sq km. Within this area we estimate that at most 10–15 animals survive.

Conservation

Van Peenen (1969) wrote that 'the sighting of a living rhinoceros in South Vietnam would probably cause rejoicing among conservationists'. When he wrote this Vietnam still had the largest population of Javan rhino in existence but the animals became a casualty of war. Now, unless rejoicing is accompanied by prompt action the few survivors will not persist for long.

In spite of the extensive commercial logging



Some of the last Javan rhinoceroses in Vietnam live in a mosaic of bamboo, forest and fields in the Dong Nai River valley. Cashew trees have been planted in the recently cleared field (G. B. Schaller).

and clearing of the forests for permanent settlement, much suitable rhino habitat remains. Indeed, some forest tracts, such as Nam Cat Tien Reserve and large tracts around the Mada River, are devoid of agriculturalists and only sparsely settled. The main immediate threat to the remaining rhinos is poaching by tribal peoples, some of whom hunt with assault rifles. As a result of our survey, the Vietnam Government has established a Rhinoceros Conservation Group and several actions are now being considered or implemented.

- * Raising penalties for killing rhinos and imposing fines and prison terms on those who possess, buy or sell any part of a rhino.
- * Initiating a campaign to make every village and government department in the rhino area aware of the need to protect the animals and the penalties for killing one.
- * Extending Nam Cat Tien Reserve, currently 365 sq km, north to include parts of Song Be and Lam Dong provinces, and protecting it vigorously with armed guards. Nam Cat Tien is already a biosphere reserve, and a viable rhino population within its borders would emphasize its world importance.
- * Making detailed surveys of rhino status and distribution to determine numbers and delineate new reserve boundaries. The surveys will include a search for rhinos in Dac Lac Province where a second remnant population might still exist.

Rhinos aside, government authorities are concerned about protecting the Dong Nai River watershed to prevent siltation of reservoirs downstream. In an effort to protect forests, tribal people are being encouraged to give up shifting cultivation in favour of permanent plots for cashews as a cash crop. If these recommendations and plans are implemented soon, the Javan rhino, so newly resurrected as a member of Vietnam's fauna, could have a secure and prominent future.

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