

## Introduced species in New Caledonia

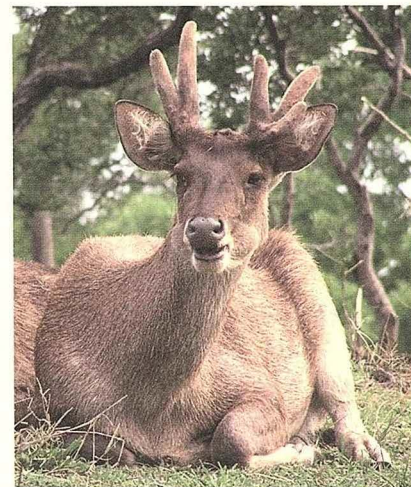
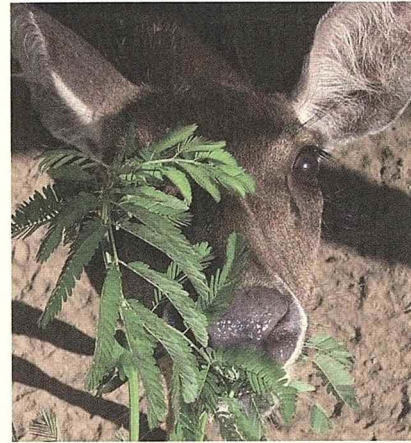
New Caledonia's native flora is exceptionally diverse (over 3200 vascular plant species) and has an exceptionally high proportion of endemics (over 75% for the flora as a whole, over 90% for some plant communities). Introduced exotics are one of the threats to New Caledonia's biodiversity. The New Caledonia archipelago is an excellent model for understanding the effects of invasive species on the biodiversity of fragile ecosystems, a major preoccupation for the Pacific and other island ecosystems in the tropics.

Since 1998, the IAC and CIRAD have conducted several studies of ungulates introduced into New Caledonia - mainly *Cervus timorensis rusa*, the Rusa deer, introduced from Java more than a century ago. The work is funded by national (MEDD and IFB) and local institutions (North and South provinces of New Caledonia, Dry Forests Conservation Programme). The researchers have acquired a better understanding of the ecology of the Rusa deer (habitat use, home range, diet) and quantified its impact on native plants.

The most seriously endangered ecosystem in New Caledonia is the dry forest: it is now estimated to cover less than 1% of the land area it covered before man's arrival. Researchers assessed the frequency of consumption of more than 130 endemic, native and introduced plant species that grow there. The work reveals that at least seven endemic species on the IUCN red list are directly endangered by the activities of introduced ruminants while more than 40 species are damaged by the deer rubbing their antlers during the rut. An analysis of floristic composition in different places shows increased invasion by introduced plants in those dry forest sites where ruminant populations are densest. Because of their mobility, the deers probably help to disperse some species while helping to control invasion by the species they feed on.

The Dry Forests Conservation Programme has introduced various methods to protect the dry forest,

with fences and population control. The IAC and CIRAD are monitoring the effectiveness of these measures. Wild deer population management plans are being drawn up, based on monitoring bio-indicators and negotiating management plans with users. The aim is to reconcile biodiversity conservation goals with sustainable use of hunted species.



• The Rusa deer, now common in New Caledonia, was introduced there from Java more than a century ago. It is much appreciated for its low-fat, tender, protein-rich meat and it also gives high-quality leather. Research has generated a Rusa deer farming sector in New Caledonia, with over thirty farmers. But the Rusa deer is one of the foremost threats to New Caledonia's natural forest. It eats grasses, leaves and fruit, browsing mainly the tenderest parts of the plant and damaging the young shoots of indigenous species, many of which are endemic to the forest. By destroying vegetation it also enables other plants to establish and take the place of the natural flora, so destroying the habitats or refuges of some forest fauna.

