

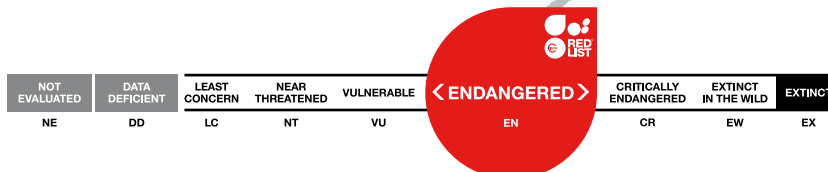
Saving one of the world's most endangered deer species in the Philippines from the brink of extinction

Species Philippine spotted deer (*Cervus alfredi* or *Rusa alfredi*)

Range Central Philippines

Population 2,500

Threats Habitat destruction, poaching





Intact tropical forests are the key habitat of Philippine spotted deer (© Jens-Ove Heckel).

The Philippine spotted deer (*Cervus alfredi* or *Rusa alfredi*) owes its scientific name to Duke Alfred of Edinburgh, who lived in the 19th century. Unfortunately, this noble connection did not prevent it from becoming one of the globally most threatened deer species today.

Originally occurring on all five of the larger Central Visayan Islands in the Philippines, it is now extinct on three of these islands, whereas on the remaining two islands (Panay and Negros) its forest habitat has declined by more than 95%. Further, the little remaining habitat is heavily fragmented, and the last few existing sub-populations of the species are still subject to poaching. Not surprisingly, therefore, the IUCN lists the species as “endangered”. In order to save the species from extinction, Mulhouse Zoo, in cooperation with the German conservation organisation Zoological Society for the Conservation of Species and Populations and with William Oliver, at that time director of the Philippines programme of Fauna & Flora International, initiated a conservation



Adult male and juvenile Philippine spotted deer at Landau Zoo (© Gerhard Steinmetz).

project, which has a breeding programme in the Philippines and in Europe as one of its components. A first group of Philippine spotted deer of Negros origin arrived in Mulhouse from the Philippines in 1990. The animals settled in well and soon started breeding. In 2001, a second group of animals was imported to Europe via quarantine in Poznań Zoo. By early 2009, 18 zoos in France, Germany, Italy, the United Kingdom, the Netherlands, Poland, the Czech Republic, Luxembourg, Spain and Portugal became partners in the programme. The captive population in Europe has increased to 110 individuals to date. Landau Zoo runs the international studbook for the captive population of Philippine spotted deer originating from the island of Negros.



Philippine spotted deer at a breeding centre in the Philippines (© Jens-Ove Heckel).

Philippine spotted deer are relatively easy to maintain in zoos and provide few management problems. Unlike many other deer, however, they need heated winter quarters in northern and central Europe and, again unlike many other deer, females can be rather aggressive to each other. Breeding herds of up to five or six females are possible, but usually only by building up numbers from a founder female and her daughters and granddaughters. Such female groups may be stable for years, but sudden aggression directed against one particular female, requiring its separation, or the restructuring of herds is always possible. On the positive side, enclosure size can be smaller than for many other deer species, and as this species is not a very good jumper, fences can be lower than for most other similar-sized deer.

An integral component of the programme is financial and scientific support for local rescue and breeding centres in the Philippines. On Negros Island these are the Centre for Studies in Tropical Conservation of the Silliman University,

Dumagete City and the Biodiversity Conservation Centre of the Negros Forest and Ecological Foundation, Bacolod City. A separate programme, mainly supported by U.S. and Australian zoos, has been established for Philippine spotted deer originating from the island of Panay at the Mari-it Conservation Park at the College of Agriculture and Forestry of the West Visayas State University in Lambunao, Iloilo. Colonies of the deer were founded with specimens rescued, confiscated and donated. Under the leadership of William Oliver and with the continuing support received from zoos participating in the breeding programme, various conservation organisations and other sources, these local rescue centres have evolved, over nearly two decades, into leading local conservation centres. These centres continue to function as rescue, breeding and conservation education centres for endangered Philippine wildlife species. The captive deer population in the Philippines was reported to be about 30 animals at the beginning of 2009.



Entrance gate of the Negros Forest and Ecological Foundation in Bacolod (© Jens-Ove Heckel).

As the largest mammal species on the West Visayas, the Philippine spotted deer plays an important role as ambassador for the alarming situation of the entire island ecosystem. The massive habitat destruction does not just affect the wildlife. Nowadays the local people also feel the effects of erosion caused by the continuing massive forest loss, for example in the increasing number of scree landslides and shortage of water. Effective conservation measures for the Philippine spotted deer do not only target species conservation, but will help to improve the local people's standard of living at the same time. Therefore, besides captive breeding, this project puts further main emphasis on several activities, including lobbying for the installation of conservation areas, intensifying information campaigns and environmental education of the local people and training of Philippine biologists and veterinarians on site, to enable local specialists to take on jobs that have been established as part of the conservation project.



Agriculture enters the tropical forests in the Philippines (© Jens-Ove Heckel).

What started off as a recovery programme for the Philippine spotted deer has expanded over the years to other highly endangered endemic Philippine species, such as the Visayan warty pig (*Sus cebifrons*, one of the two most endangered pig species in the world), Panay cloud rat (*Crateromys heaneyi*), Visayan wrinkled hornbill (*Aceros waldeni*, the world's most endangered hornbill species), Negros bleeding-heart pigeon (*Gallicolumba keyi*), Philippine eagle owl (*Bubo philippensis*), Philippine hawk eagle (*Spizaetos philippensis pinskeri*), endemic populations (probably representing undescribed species or sub-species) of Philippine sail-fin lizards (*Hydrosaurus pustulatus*) and others. Other organisations have joined in over the years and have become long-term funding partners in this multi-species conservation and recovery programme in one of the globally most endangered biodiversity hotspots – the central Philippine islands. Planning for a first reintroduction of captive-bred Philippine spotted deer and some of the other species into privately owned forest fragments on the island of Panay is well advanced and is hoped to commence in 2010/2011.



Young male Philippine spotted deer at Landau Zoo (© Jens-Ove Heckel).

Partner zoos in the programme are expected to make a one-off or yearly financial contribution to the continuation and expansion of the conservation activities in the Philippines. Participation of each new zoo in the Philippine spotted deer conservation programme will have to be endorsed by the wildlife authorities of the Philippines, the Department of Environment and Natural Resources, with its Protected Areas and Wildlife Bureau, as all deer and their progeny are within the ownership of the government of the Philippines.

The authors would like to acknowledge the continuous support over all the years provided by the Philippine project partners as well as the Philippine Department of Environment and Natural Resources – Protected Areas and Wildlife Bureau.



After an agricultural apprenticeship and temporary occupation as zookeeper, Dr **Jens-Ove Heckel** studied veterinary medicine in Hanover. During a three-year appointment as assistant zoo veterinarian at Stuttgart Zoo, he performed the research for his doctoral thesis on Hepatitis B virus in captive and wild primates. He then worked as zoological or wildlife veterinary consultant in several German institutions and in Uganda. In 2000, he was appointed as director and zoo veterinarian of Landau Zoo. He became keeper of the international studbook for Philippine spotted deer in 2004. He also serves as regional coordinator for the Horn of Africa of the IUCN/SSC Antelope Specialist Group.



William L. R. Oliver was born in England and educated at London and Liverpool universities. He has worked in leading conservation breeding centres in England and Jersey (Channel Islands), initially as a keeper but later in charge of research, a post that led him to conduct field research on various highly threatened species. Ever since his first visit to the Philippines in 1990, he has been back every year and now spends about 10 months a year there in his capacity as a founding board member and director of the Philippines Biodiversity Conservation Foundation's Philippines biodiversity conservation programme. He has also chaired the IUCN/SSC Pigs, Peccaries & Hippos Specialist Group since its inception in the early 1980s and is an active member of several other specialist groups.



Dr **Jean-Marc Lernoald** is a French veterinarian with a post-university degree in tropical medicine and animal husbandry. He started his professional life as field veterinarian in Ethiopia and was then appointed manager and veterinarian of the Primatology and Equatorial Ecology Laboratory of the French National Scientific Research Centre in Gabon. He finally fulfilled his wish to work in a zoo, first as curator and veterinarian at Walsrode Bird Park, and then as director of Mulhouse Zoo for 26 years. He is also chairman and, in 1997, was one of the founders of Conservation des Espèces et des Populations Animales, a French association of zoos and private persons supporting the *in situ* conservation of highly endangered and often neglected species.



Roland Wirth was a co-founder of the Zoological Society for the Conservation of Species and Populations (ZGAP) in 1982 and has been the society's chairman since 1984. ZGAP's main interest is the conservation and recovery of lesser known endangered species. He has also been a member of several IUCN/SSC specialist groups for over 20 years and is a board member of Stiftung Artenschutz and the Loro Parque Foundation on the island of Tenerife.