



# Vietnamese Pond Turtle

(*Mauremys annamensis*)



Joining forces to save Vietnam's species  
EAZA Campaign 2024-2025





## General Introduction

Vietnam belongs to the global hotspots of biodiversity and is a megadiverse country. Regularly new species discoveries are reported from that country. The Vietnamese Pond Turtle is one of the most endangered species in Vietnam and in the world.

## Biology

The Vietnamese Pond Turtle, *Mauremys annamensis*, was first described by Siebenrock in 1903 based on a specimen collected from Phuc Son or Phuoc Son of presently Quang Nam Province (southwest of Tourane, now known as the city of Da Nang) in Central Vietnam. Another specimen was collected from Hoi An, an ancient city about 50 km from Da Nang in 1941. This species is endemic to Vietnam and restricted to the lowland areas, below 200m, of the central region, between Da Nang City and Phu Yen Province. During the early 20<sup>th</sup> century, this species was quite abundant in the marshes and slow-moving water bodies of the cities of Hoi An and Da Nang. Both Hoi An and Da Nang, however, are now very populated cities surrounded by rice paddies, which are unlikely to be suitable habitats for this species.

This is a medium-sized and semi-aquatic turtle, whose maximum carapace size gets up to roughly 30cm. Males are slightly smaller than females, and their plastra are more concave than those of females. The carapace is slightly rounded and has three longitudinal keels with the median one most developed. Its color ranges from chestnut, dark brown to gray or even nearly black. The plastron length is shorter than that of the carapace and unhinged. The bridge, which connects the carapace to the plastron, covers about 40-50% of the length of the plastron. The buttress of the bridge is extensive and more developed than many other semi-aquatic species. The plastron, bridge, and undersides of the marginals are yellow-orange, horn, or tan with black blotches. The color of the edge and the middle part of the plastron is also lighter.



The head is moderate in size and slightly pointed. It has an green olive color and is nearly as dark as the carapace. There are three distinct pairs of pale yellow stripes on each side of the head extending from near the tip of the nose and the faintest pair passes over the orbit to the temporal area. The lateral and most distinct pair runs from the nostrils through the orbit and extends along the neck. The last pair begins from below the nostrils and runs along the dorsal border of the jaw to below the jaw and onto the neck. The middle of the chin and the throat is pale yellow. Toes are completely webbed. The neck, limbs, and tail generally are medium to dark gray dorsally and turn lighter ventrally. Hatchlings have the same colors as those of adults, but more vivid.

## Status

The Vietnamese Pond Turtle is so rare that it is considered either extinct or functionally extinct in the wild. It has been included in the top 25 most endangered turtles in the world by turtle experts. Although the Indo-Myanmar Conservation – Asian Turtle Program (IMC/ATP) has conducted many surveys, the species has not been recorded in any protected area within its range. However, there are a number of good captive colonies in Europe, the US, and also several hundred breeding animals in rescue stations and turtle centers in Vietnam, which can be used to reestablish populations in the species natural range once suitable sites are identified.

## Conservation action

The urgent need for turtle and tortoise protection was already highlighted within EAZA 'Shellshock' campaign, from 2004-2005. In this special case, for the focus species, environmental DNA can be used to determine areas where species might still exist. In addition, it is crucial to either identify protected areas within its historical range or establish new ones to release captive populations to the sites. As the species has been shown to contain two genetically distinct clades distributed in two separate geographic



areas in central Vietnam, genetic screening before releasing is also important to avoid intermixing the two lineages.

## Campaign objectives

To effectively implement appropriate conservation measures together with the partners, including IMC/ATP (Asian Turtle Program), the Central Institute for Natural Resources and Environmental Studies (CRES), and the Institute of Ecology and Biological Resources (IEBR), the EAZA Vietnam campaign will foster

- Conduct eDNA in potential sites within the species range
- Habitat assessment of suitable sites for releasing animals
- Support the establishment of one or several new protected area(s) for the species, if needed
- Population restoration once sites are confirmed, reserve(s) established
- Conduct genetic screening of held animals before releasing them
- Additional option, after genetical studies, to repatriate genetically important animals from Europe and the US to Vietnam, once required



Vietnamese pond turtle (*Mauremys annamensis*) at the Melinh Station for Biodiversity, Vietnam. Phot. T. Ziegler