

Baly Bay

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The area around Baly Bay in northwestern Madagascar is a gently undulating landscape at 0-84 m altitude with fragmented western dry deciduous forest, bamboo scrub, palm savanna, lakes and raphia stands along valleys, and mangroves, beaches and mudflats around the coast. Dry forests, probably the original climax vegetation of the area are reduced to a few fragments, many of which are degraded by wood-cutting and cyclone damage. These forests are interspersed with bamboo scrub dominated by *Perrierbambos madagascariensis*, a species endemic to this area. After repeated burning, forests and bamboo scrub have been converted to savanna dominated by palms such as *Bismarkia nobilis* and *Hyphaene shatan* and grasses such as *Heteropogon contortus*. *Aristida rufescens*, a grass of poor grazing quality, is becoming more widespread in more degraded areas. There are two marked seasons, with most of the average 1160 mm annual rainfall in the hotter season from November to April.



Plate 18. Baly Bay aerial.
(© Herizo Andrianandras)



Plate 19. Baly Bay women and children.
(© Hasina Randriamanampisoa)

Considered one of the most threatened tortoises in the world, the ploughshare tortoise *Geochelone yniphora* locally known as "angonoka" is restricted to an area of 66,000 ha around Baly Bay, living in around 16,000 ha of bamboo thicket and associated dry forests. There are believed to be less than 2,000 individuals existing in the wild, found in five isolated populations. The diversity of habitats harbours a diversity of Madagascar's endemic and endangered wildlife. The all-white Decken's sifaka *Propithecus deckeni*, western bamboo lemur *Haplemur griseus occidentalis*, Angel's chameleon *Furcifer angeli* inhabit the forests. Nesting Madagascar fish eagles *Haliaeetus vociferoides*, Madagascar white ibis *Threskiornis bernieri*, Madagascar plover *Charadrius thoracicus*, flamingos, nesting yellow-billed storks *Mycteria ibis* occur in coastal areas. Some of the few remaining good populations of side-necked turtles (or rere) *Erymnochelys madagascariensis* are found in rivers and lakes. Beaches provide nesting sites for green, hawksbill, olive ridley and loggerhead marine turtles and there are feeding areas for dugongs in the bay.

The main threat to the remaining dry forests, the bamboo scrub and the species found within them is fire, often spreading from fires set to renew pasture in savanna or to chase errant cattle out of the impenetrable bamboo thicket. Forests are also degraded by wood cutting and cyclones. Historically the ploughshare tortoise was threatened by trade for maritime

consumption and it is still threatened by illegal collection and international trade to supply unscrupulous private collectors despite its protected status nationally and on Appendix 1 of the Convention on International Trade in Endangered Species (CITES). Such collection can be the final blow to such long-lived slow-growing species in depleted and fragmented populations. Dugongs, sea turtles and the fresh-water reere turtle are threatened by hunting for local consumption.

Box 7. Ploughshare tortoise reintroduction project

Richard Lewis

In order to reduce the risk of extinction of the ploughshare tortoise, a reintroduction project is underway to create a new wild population from captive-bred juveniles. Survivorship in the wild suggests that at least 50 animals should be released and they should be at least 200 mm long (too big to be eaten by wild pigs), which is about 8 years old for captive-bred juveniles. All the captive animals have always been kept in relative isolation. They undergo regular health checking and extensive testing has shown that blood and intestinal parasites, bacteriology, blood parameters appear to be similar between wild and captive populations and that captive animals they are not carrying any dangerous pathogens such as mycoplasma and herpes virus that could endanger either themselves or wild animals.

A trial release of five animals in 1998 proved that captive-bred young can adapt to the wild. It was feared that the animals would home back to their place of birth (Ampijoroa is 100 km from the wild populations), but all five established home ranges around the area where they were released. These released animals have continued to grow faster than their wild counterparts. This is partly due to the fact that the area where they were released is one of the best habitats for tortoises. The area (Beaboaly) is 700 ha of prime tortoise habitat but tortoises disappeared decades ago when it was burnt in the 1970's destroying the habitat and the tortoises. Since then the habitat has regrown but tortoises are unable to recolonise the area as it is isolated from the other populations. Using the captive stock a sixth wild population is being established. The release programme began in December 2005 when 20 captive-bred tortoises were transferred to pre-release enclosures from which they were released in January 2006. It is planned to continue similar releases of up to 100 individuals over the next five years.



Plate 20. Ploughshare tortoise. (© Alice Smith)

Local people have been closely involved in ploughshare tortoise conservation since the early 1990s when Durrell Wildlife Conservation Trust organised a series of festivals and workshops to learn about local interests and build good relations with local communities. This led to strong local participation in the delimitation and designation of Baly Bay National Park (57,418 ha), created in 1998 to protect the tortoise and its habitat. All the villages around the park, in 11 groups, take part in an annual participatory ecological monitoring competition organised by Durrell with the National Park managers (ANGAP) and the local Water and Forests service. One of the innovative management techniques initiated as a result of local consultation about conservation has been the application of traditional fire control techniques to protect tortoise sites and forests against fires. Local communities have installed fire-breaks (a total length of about 50km) around the tortoise sites since 1995. Strips are burned in the late wet season when fires can be easily controlled and these burned areas act as barriers to uncontrolled fires later in the dry season. Durrell has been monitoring areas burned since 2000. There was a decrease in the area affected by fires in Baly Bay National Park between 2000 (730 ha) and 2002 (47 ha). However, in 2003, fire affected 1,500 ha.

For most of 2002, Madagascar had no acting government due to contested presidential elections. Two parallel governments meant that there was no national government and animal traffickers were able to increase their activities in Madagascar. There was little control on the country's borders and CITES permits were available for whoever was willing to pay. Working with the new government authorities since late 2002, Durrell, the local and regional authorities and the local communities have been working together to stamp out this traffic. An agreement was signed in late 2005 between Durrell, ANGAP, the General Direction of Waters and Forests, the Region of Boeny and the Commune of Soalala to define roles and responsibilities to protect the tortoise from illegal collection and trade. There have been recent notable successes catching criminals and bringing them to trial so there is hope that this threat is diminishing.

Situated at Ampijoroa Forestry Station in northwestern Madagascar, the captive-breeding programme for the ploughshare tortoise run by Durrell Wildlife Conservation Trust since 1986 had successfully raised 250 captive-bred juveniles by December 2005. The captive population represents a sixth population for the species. It has an important role as a safety net in case of wild extinction, to raise awareness of the plight of the species and as a source for the creation of new populations.