

RETURN OF AN HISTORICAL THREAT TO THE ENDANGERED ABBOTT'S BOOBY *PAPASULA ABBOTTI*?

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Abbott's Booby *Papasula abbotti* is one of the most threatened and least known seabirds in the world. The species is listed as Endangered (IUCN 2010), and knowledge of it is scarce (Nelson 1978, Marchant & Higgins 1990, Carboneras 1992). Abbott's Boobies were once abundant in the tropical Indian Ocean but were extirpated as a result of harvest and destruction of breeding habitat by humans in the Western Indian Ocean by the 1920s (Nelson 1978, Marchant & Higgins 1990, Carboneras 1992). A breeding population survives only on Christmas Island, an offshore territory of Australia in the Eastern Indian Ocean, where its present population is estimated at 5 000–6 000 breeding individuals and is assumed to be declining (IUCN 2010).

The causes of the decline are unknown. The chicks of the booby are thought to be negatively affected by Yellow Crazy Ants *Anoplolepis gracilipes* (IUCN 2010), accidentally introduced between 1915 and 1934 (O'Dowd *et al.* 1999). Moreover, threats at sea such as prey shortage due to overfishing, marine pollution and drowning in fishing gear may also affect the species (Garnett & Crowley 2000, DEH 2004). So far, however, no potential threats have been unequivocally confirmed or rejected. Within the framework of an ongoing study to investigate threats faced by Abbott's Booby on land and at sea, an additional potential threat to this species was identified.

On September 6, 2008, a male Abbott's Booby rearing a chick was captured on its nest in the eastern part of the island with a black, 1.5 mm, three-strand twisted plastic line around its left tarsus (Fig. 1). On a first glimpse, it appeared that the bird had become entangled in the

line, perhaps in an encounter with fishing gear. A closer inspection revealed that the line must have been attached to the bird's leg on purpose. The line was attached with a loop around the tarsus that could not slip or pull tight as would have been the case in accidental entanglement. Instead, the line was tied around the tarsus using a slipped overhand knot with the working end being reattached to the slip knot with a simple overhand knot (Fig. 2). The loop could neither pull tight around the bird's leg nor open up, but was wide enough to prevent tying off the bird's foot and too tight to slip over it. Thus, the knots were specifically made to tether the bird firmly without injuring it. The ends of the line were frayed out, indicating that the line was not cut using a knife or scissors. Instead, the booby probably freed itself by biting through the line with its strong, serrated bill.

It is well known that adult seabirds as well as chicks have been and still are captured for food or to be kept as pets (e.g. Steadman & Olson 1985, Skira *et al.* 1986, Anderson A 1996, Anderson RC 1996, Lyver *et al.* 1999, Denlinger & Wohl 2001). However, this is the first record of an Abbott's Booby being subjected to harvest since its extirpation by humans in most of its range in the 1920s.

Considering the method of tethering, the animal was probably tied up to be kept as a pet. If the animal had been caught only for food it would have been killed immediately or, if it was to be kept alive



Fig. 1. Line around the left leg of the Abbott's Booby.



Fig. 2. The removed line.

until shortly before eating, it would have been unnecessary to attach the line so elaborately around the tarsus. In addition, its bill and wings would most likely have been restrained too.

It was impossible to determine when or where the bird had been captured. The line was not worn down or faded out, which indicates that the bird had been captured relatively recently. The type of line is readily available throughout the foraging range of this species around northwest Australia and south-central Southeast Asia (Nelson 1978, Marchant & Higgins 1990, Carboneras 1992, Henricke 2007). The inhabitants of Christmas Island do not eat any seabirds or keep them as pets. However, its foraging range includes areas where people are known to harvest seabirds, e.g. in Indonesia (D. James pers. comm.).

The scope of the problem is currently difficult to assess. It might have been an isolated case, but the chances of finding the only previously captured individual on Christmas Island are in fact slim. Moreover, the human populations of the countries within the Abbott's Boobies foraging range, such as Indonesia, are constantly growing (UN 2010). This will increase the demand for food and consequently also the pressure on wild animals, like the Abbott's Booby, which so far were not known to be subjected to this threat. Considering its small population size and the assumed ongoing population decline, harvest might have a considerable effect on the species. As harvest was a major reason for this species' near-extirpation about 90 years ago, this threat should be taken seriously. The scope of the problem needs to be evaluated and the issue taken into account in any future conservation plans and management actions, to assure efficient and comprehensive protection of this endangered and unique seabird.

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