

## Island-style ringing

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In this article I share some of my experiences of banding birds on the remote islands of Aldabra Atoll. Aldabra lies some 400 km north-west of Madagascar and a little over 200 km north-east of the Comoros Islands. Politically, however, it forms the southernmost extent of the scattered island-nation of the Seychelles, of which the main island, Mahe, is over 1000 km to the north-west. Predictably, Aldabra shares great biological affinities with both Madagascar and the Comoros. Aldabra is the world's largest raised coral atoll. Being an atoll, it consists of several islands surrounding a lagoon and fringed by a reef. Aldabra has four large islands (Grande Terre, Malabar, Picard and Polymnie) and numerous lagoon islets. It also has one of the proudest conservation and research histories of all uninhabited islands.

Aldabra is perhaps most renowned for having the last population of giant tortoises in the region. These lumbering behemoths overshadow the Galapagos giant tortoises in both size and numbers. Aldabra also has a suite of endemic species, both plant and animal, and is one of the few islands left in the world that is virtually free of major human-mediated disturbance. Not entirely free, though. Black (or ship) rats *Rattus rattus* and domestic cats *Felis catus* have caused significant problems, and it was one of these issues that brought me to Aldabra.

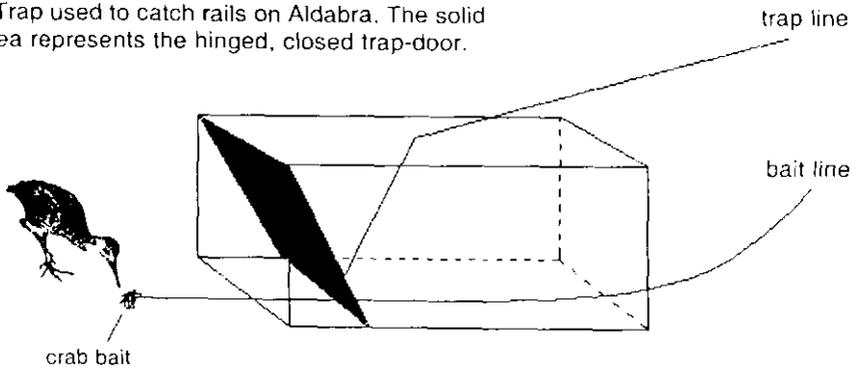
Amongst Aldabra's native bird species (incidentally, it has no alien bird species – another unique aspect of Aldabra), all but one is endemic at the species or subspecies level. The Aldabra Rail *Dryolimnas cuvieri aldabranus* is the last flightless bird of the tropical western Indian Ocean islands, an area once famous for flightless birds like the Dodo *Raphus cucullatus* and the solitaires of Reun-

ion and Rodrigues. Being flightless is not necessarily a problem. However, being a naïve island endemic faced with an aggressive mammalian predator, such as a cat, makes flightlessness a complete disaster. The range of the genus *Dryolimnas* has contracted in historical times from at least seven islands or atolls in the region, to just Madagascar (where it can still fly) and two islands and a small lagoon islet on Aldabra. This is thanks entirely to humans and their pests, most notably cats. Cats became established on Aldabra towards the end of the 19th century, on Grande Terre and Picard. The rails disappeared from these islands shortly afterwards. Under supervision from prof. Phil Hockey I went there in 1999 to reintroduce the rails to the now cat-free Picard.

The first task was to trap rails. The trap and the technique I used to catch them underwent several modifications in the field. Originally, I intended to leave baited treadle-release swing-door traps. However, the abundant rats and very troublesome Robber Crabs *Birgus latro*, which both constantly wrecked traps long before rails came anywhere near them, forced me to reconsider. The following describes in detail how trapping was done. The trap consisted of a steel frame 70 cm × 30 cm × 30 cm, covered with black, 10%-shade netting (Fig. 1). The trap door was slightly longer and narrower than the entrance and was hinged at the top. I found that a hand-held trap-line, consisting of a length of fine-gauge nylon twine tied to the base of the trap-door and threaded through the roof of the trap, was the most reliable release mechanism.

A length of nylon twine (bait-line) was tied to bait either Rock Crab *Grapsus* sp. or Mangrove Crab *Cardisoma* sp. The carapace

**Fig. 1.** Trap used to catch rails on Aldabra. The solid black area represents the hinged, closed trap-door.



was removed to provide rails with easy access to soft, edible parts of the crab. The other end of the bait-line was threaded through the rear of the trap, so that the bait could be pulled deep inside the trap.

When a rail was located, the trap was placed on relatively flat ground and the crab and bait-line tossed towards it; this invariably elicited an immediate and positive response from the naïve birds, which would run to investigate the bait. The person trapping stood two to three metres behind the trap and used the bait-line to lure birds into the trap. This was achieved by slowly drawing the bait into the back of the trap while allowing birds to pull tid-bits from the crab. As soon as a bird had entered the trap far enough that the door would not strike it when dropped, the trap-line was released. The trap-door would swing closed, capturing the bird. Because the length of the trap-door was greater than the height of the trap, when released it came to rest flush with the sides and at an angle (Fig. 1) and thus could not be pushed open from the inside. While this method was rather unorthodox, it proved very effective for the unsuspecting island rails – I was able to retrap birds up to four times in as many months. I suspect, however, that it will be slightly less successful on more savvy mainland birds!

Once trapped, the rails were banded with 7.5 mm SAFRING bands on the right tarsus, and with engraved plastic bands, with highly-

visible alpha-numeric codes, on the left tarsus. I also collected blood for genetic analyses by puncturing the brachial vein.

Releasing 18 birds onto Picard (roughly 7 km<sup>2</sup>) without radio-tags, was a cause for some concern. However, most of the reintroduced birds remained within earshot of the two existing paths. This was out-and-out luck, and a huge relief as it made subsequent monitoring considerably more rewarding than it would have been had the birds dispersed to a density of two per km<sup>2</sup>! The plastic bands proved invaluable in allowing me to identify individuals from a distance without disturbing the birds.

The last point of interest is the blood collection. I used an established set of criteria to sex the rails in the field, based on differences in the colour of the base of the bill. This method has been used unquestioningly since the early 1970s. However, I began to doubt its accuracy when a few birds started doing some funny things. For example, a pairing of ostensibly male birds successfully reared a chick. I employed a very reliable genetic sexing technique using the blood I had collected. The results confirmed my suspicions. I had been able to correctly identify the sex of the rails only 80% of the time. Fortunately, the effects of this incorrect sexing were not too serious, and have not had a major impact on the ultimate success of the reintroduction.