

## Ciguatera fish poisoning and reef disturbance in South Tarawa, Kiribati

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Samples of several fish species from each side (east and west) of the blasted channel (Nei Tebaa) on the ocean side of the Dai Nippon Causeway were collected in early 1989 (Figures 1 and 2). This large causeway links the islet of Betio and Bairiki on the Southern portion of Tarawa Atoll. Our purpose was to set up a database on fish toxicity levels in the area, in an effort to safeguard the general public from risks associated with ciguatera fish poisoning. Prior to the construction of the causeway fish in this area were considered safe to eat by local fishermen.

Bioassay results (i.p. in mice) provided by the Southern Fisheries Centre in Brisbane (see *Ciguatera Information Bulletin #1*) show that the eels caught east and west of the channel, as well as those caught off the neighbouring reefs, were very toxic. Parrot fish caught east of the channel were found to be only slightly toxic, while those from the western side were not. The surgeon fish, *Ctenochaetus striatus*, caught east of the channel were found to be toxic while those west of the channel were not.

One of the two specimens of the blue spot coral trout, *Cephalopholis argus*, from the eastern side was slightly toxic; the other was not. Other fish species, including parrot fish, wrasse, surgeonfish and emperors tested only slightly toxic to mice.

It is apparent that toxicity levels may vary from species to species and from location to location. The

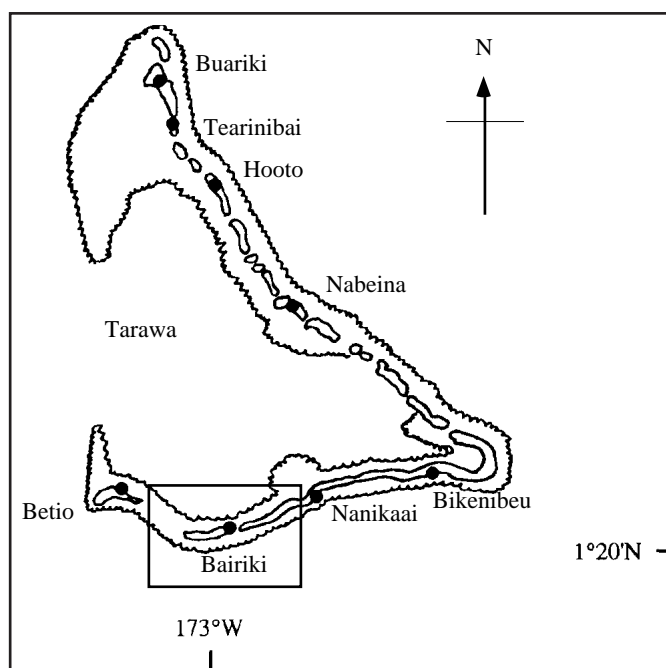


Figure 1. Map of Tarawa, Republic of Kiribati

toxicity of moray eel appeared to be highly variable, with some individuals being extremely toxic. In general, the eastern side of the channel is more toxic than the western side.

A comparison between toxicity level in fishes collected before and after the causeway construction was also made. It appears that toxicity levels of fishes may have risen after the completion of the causeway. Reef disturbance may have contributed to such an increase.

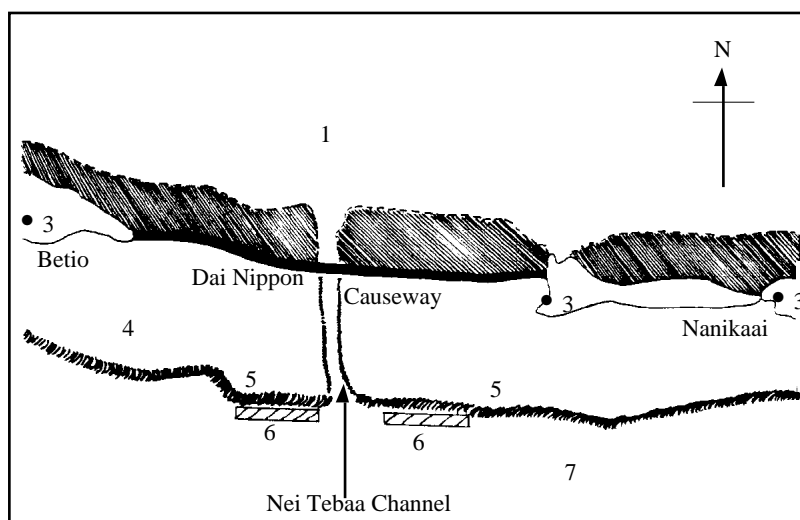


Figure 2. A map of the Dai Nippon Causeway and the Nei Tebaa Channel. The cross-hatched areas indicate the fish collection sites.