

Notes on grouper spawning aggregations in Tongareva, Cook Islands, June 1995

by Kelvin Passfield

Tongareva (also known as Penryhn) is situated at approximately 9°S and 158°W. Fishermen there target an annual spawning aggregation of *Epinephelus polyphekadion*, known locally as **hapuku**.

In 1995 the **hapuku** started their spawning aggregation in early June. It is possible that they were gathering in late May, but significant catches were being made on the weekend of 3 June. For 2–3 weeks leading up to the time of the main spawning aggregation, higher-than-normal numbers of **hapuku** are caught around coral heads inside the lagoon. The main aggregation appears to last for only about 2 weeks. A similar annual event further to the west, in Manihiki Atoll (10°S and 160°W), is reported to last from new moon to full moon, around the same time.

Fishing is usually conducted just inside the main passage, in depths of around 20 to 35 m. Boats anchor in shallower water, around a patch reef, and drift back on long anchor ropes so that they are over deep water.

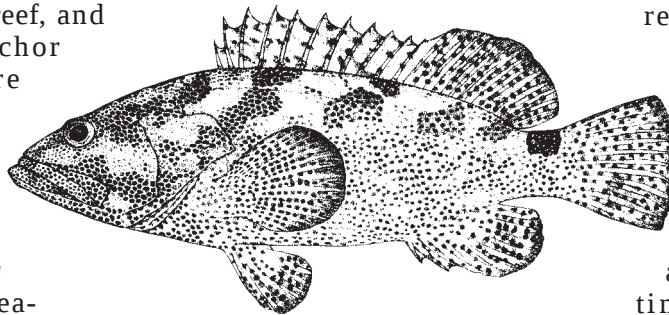
The preferred bait is fish, with several informants regarding **kaha** (mullet, *Liza vaigiensis*) as best. A reasonable weight is required to sink the hook fast, as sharks can and do take the bait. Four-inch-long pieces of reinforcing rod or big bolts are commonly used. Sharks are a significant problem, often biting through the line, resulting in gear loss. Spare hooks, weights and traces must be carried. Steel traces are sometimes used to prevent losing gear, with no apparent reduction in **hapuku** catch.

About 15 aluminum skiffs regularly fish Taruia Passage, and catch rates are usually in the vicinity of 10 to 12 fish per man hour, though they can be much higher in perfect

conditions. Fish average around 1.5 kg, and generally range from 1 to 2 kg. Fishermen return home with the approach of darkness, as the **hapuku** appear to stop biting at night-fall.

Either the aggregation is mainly females, or the males are not taking the baits. Of a sample of 33 fish, 31 were females, and only 2 were males. Other *Epinephelus* species, notably *Cephalopholis argus* (roi), also join the aggregation, but in much smaller numbers. Locals who have observed the fish say that they are all lined up on the bottom, pointing out through the passage.

Apparently **hapuku** aggregation also occurs at Tetautua, the other major passage in Tongareva lagoon. However, locals maintain that fish, especially **hapuku**, caught in this passage are poisonous (ciguatera), so they do not fish there.



A similar event is also reported to occur in passages on at least three of the atolls in Tuvalu further to the east (9°S, 179°E), and at about the same time. Nukufetau,

Funafuti, and Nukulaelae all report spawning aggregations of **gatala**, most likely *Epinephelus polyphekadion*. Other *Epinephelus* species are also present. Informants indicate that these fish have also been observed to be lined up facing the same direction.

In all the above cases, the fishermen are in general only fishing for local consumption, with some minor exports to national urban centres. Anecdotal information does not reveal any perceived significant reduction in stocks caused by these fisheries to date.