

THE GIANT TRITON

By Richard Chesher and Ann Poulsen

A key predator on coral reefs a favoured prey for shell collectors.

The giant triton *Charonia tritonis*, is one of the largest and most beautiful gastropods, attributes favoured by shell collectors. Has the beauty of the triton, together with increased night diving throughout the tropical seas, endangered the survival of this creature? Could collecting tritons cause severe long term problems for coral reefs? Research shows that tritons are important predators on coral reefs and play a key role in coral reef ecosystems.

As with all marine ecological questions, there is more speculation than hard data on just how important and just how endangered giant tritons might be. However, there is just enough evidence to warrant a much closer look at this majestic animal.

What makes tritons so important to tile coral reefs? They prey on the crown-of-thorns starfish, an animal so notorious it hardly needs an introduction. The crown-of-thorns, *Acanthaster planci*, eats living coral and for the past thirty years population blooms of this starfish have plagued coral reefs throughout the tropical Indo-Pacific. In many instances whole reefs, covering many kilometres have been eaten, stripped of the majority of living coral tissue by hundreds of thousands of starfish. The starfish "phenomenon" raised great tides of public emotion that involved many scientists in a controversy that still ebbs and flows to this day.

Acanthaster is perfectly adapted to prey on corals and is without doubt, an ancient member of the coral reef community. Its stomach everts to blanket the most complex coral structures and special wax enzymes digest the coral's waxy energy stores. The thousands of venomous, razor sharp spines make adult crown-of-thorns unappetizing for most coral reef predators. The giant triton is the only known predator that attacks and eats them with real zest.

Robert Endean, of the University of Queensland, was Principal investigator of the first scientific investigation into the crown-of-thorns population explosion on the Great Barrier Reef. Predation by tritons was discovered almost immediately and, in 1969, Endean pointed out that the removal of large numbers of tritons from specific tourist sites on the Great Barrier Reef correlated with starfish blooms. This observation resulted in tritons being protected under the Queensland Fisheries Act 7684.

Other scientists were not convinced over collecting of tritons caused *Acanthaster* population outbreaks. Scientists agreed tritons ate crown-of-thorns starfish but the actual cause of the population blooms seemed more complex. Some researchers thought the blooms represented a natural cycle that did not constitute any cause for concern. Evidence has accumulated showing limited blooms did occur in the past - even thousands of years ago (Walbran, 1991).

In the 1970s, tritons were sold in Hawaii for US\$65. By 1978, increased collecting - made possible by the universal availability of underwater torches, face masks, flippers, and outboard motors - resulted in a drop of price to between \$7 and \$30. Throughout the '80s the shell trade expanded and specimens with cracked and broken shells and heavy overgrowth began to be traded as good quality specimens became less and less common. In the late '80s and early '90s good quality, large tritons were worth up to \$100.

Pacific Islanders collect tritons - every, one they see, of any size and condition - to sell to tourists (Chesher, pers. obs). Many fishermen sell shells directly to tourists, others sell to gift shops. In the Philippines fishermen sell tritons to wholesale shell dealers for international export. While the annual income is insignificant to the fishermen (any one fisherman does not collect very many tritons), the impact on reefs may be highly significant.

Since many islanders collect tritons specifically for international trade, regulation and management must come at the international level. The Convention on International Trade in Endangered Species (CITES) is an effective means of reducing the fishing effort on these valuable shells. A simultaneous public awareness programme in Pacific Islands, stressing the vital role of the triton to continued productivity of reef resources, might gain the cooperation of the more responsible island fishermen.

Zann (pers. com.) points out the inconsistency of Australia protecting tritons on its own reefs while importing large numbers of the shells from the Philippines and other Pacific islands. Certainly, it is an uncomfortable example of Australia exploiting its island neighbours. Juvenile tritons are protected in Vanuatu and all tritons are protected in Fiji but somehow both are available in those countries. A proposal has been submitted to the Australian National Parks and Wildlife Service to list *Charonia tritonis* under schedule 1 of CITES. Listing the triton in CITES prohibits importation of these animals into any member country. The listing will serve several important needs: providing data on numbers of tritons moving between nations, discouraging tourists and shell collectors from buying or taking tritons overseas, and prevention of large scale commercial shipments of tritons between countries. It will also focus the attention of shell collectors on the need to think twice about taking triton shells and to consider non-destructive enjoyment of shells such as underwater photography, behavioural studies, or just . simply admiring the living species in its natural habitat.

We invite concerned scientists and shell enthusiasts to submit comments to: R. Jenkins, Wildlife Protection Agency, National Parks and Wildlife Service, PO Box 636, Canberra, ACT 2601. Any information regarding triton abundance, distribution, feeding activity, breeding or behaviour could be of significant value. Information about any aspect of the commercial trade in tritons and any photographs of tritons underwater or in the market place would also be valuable. Please send information to Ann Poulsen, Triton Listing Committee, 95 Brookfield Road, Kenmore Qld. 4069. Richard Chesher (Marine Research Foundation) and Ann Poulsen (The University of Queensland)

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