AMENDMENTS TO APPENDICES I AND II OF THE CONVENTION

Other Proposals

A. PROPOSAL

Inclusion of the giant triton *Charonia tritonis* on Appendix II.

B. PROPONENT

Commonwealth of Australia.

C. SUPPORTING STATEMENT

1. Taxonomy

11. Class: Gastropoda

12. Order: Monotocardia

13. Family: Ranellidae (Gray, 1854) = Cymatiidae (Iredale, 1913)

14. Genus: *Charonia* (Gistel, 1848)

Species: *tritonis* (Linnaeus, 1758)

15. Common Names: English: Giant Triton, Triton's Trumpet, Trumpet Conch, Trumpet Shell
French:
Spanish:

16. Code Numbers:

2. Biological Data

21. Distribution: *Charonia tritonis* is a marine mollusc with a pan tropical distribution extending into temperate waters (Emerson, 1991). Two subspecies are recognised (Beu, 1970).

(a) *C. tritonis tritonis* (Linnaeus, 1758) is widely distributed on coral reefs of the Indo-Pacific. It is the larger of the two subspecies, growing up to 450 mm long. The average size is between 280 mm and 380 mm (Beu, 1970).

(b) *C. tritonis variegata* (Lamarck, 1816) occurs in the Atlantic and the Mediterranean (Clench and Turner, 1957). It is slightly shorter and broader than the Indo-Pacific form.

Pacific Ocean

Records of *C. tritonis* exist from Kyushu, Japan (Kira, 1962) and the Hawaiian Islands (Berg, 1971). *C. tritonis* occurs throughout the Philippines (Wells, 1982), the Marianas and Carolines (Chesher, 1969), also in Fiji (Owens, 1971), Papua New Guinea, Torres Strait and the Solomon Islands (Endean, 1973). The giant triton has been recorded from the Society Islands (Abbott, 1973) and Tonga (Chesher, pers. comm., 1993). It occurs on Australia's Great Barrier Reef (Endean, 1973) and has also been recorded from the Northern Territory

and Lord Howe Island (Beu. 1970). In the Eastern Pacific giant tritons are recorded from the Galapagos Islands, Cocos Island (Emerson, 1989) and Easter Island (Cecilia, 1991).

Giant tritons are recorded from New Zealand (Powell, 1964). Apparently larvae were transported to these relatively cool waters by ocean currents where they were then able to settle and metamorphose (Beu, 1970).

Indian Ocean

The distribution of *C. tritonis* extends into the Indian Ocean, with records from the Red Sea (Ormond & Cambell, 1971), Indonesia, Seychelles and Mozambique (Salm, 1978) Kenya (McClanahan, 1989), South Africa (Barnard, 1963) and north western Australia (Beu, 1970).

Atlantic Ocean and Mediterranean Sea

The species is well known in its slightly smaller form, *C. tritonis variegata*, from the Western Atlantic, Eastern Atlantic and the Mediterranean. In the Western Atlantic it has been recorded from Bermuda, the Bahamas, Florida Keys, the West Indies, and from central Mexico to Santos, Brazil (Clench & Turner, 1957).

In the Eastern Atlantic it occurs in the Cape Verde Islands, the Canary Islands, St Helena (Clench & Turner, 1957) and Portugal (Tyron, 1881).

It has been recorded from Malta (Gatto & Despott, 1919), Sicily (Tyron, 1881), and Beirut and Cyprus in the Mediterranean (Clench & Turner, 1957).

22. Population: The large size (up to 450 mm long), beautiful design and practical use as a trumpet and a food source make the giant triton one of the most well known and highly regarded shells in the world, described by Abbott (1973), '...as the most beautiful among large shells'.

They are collected from coral reefs throughout the world being relatively easy to acquire because of their large size, accessibility and striking shell markings. In recent years the availability of SCUBA apparatus, outboard motors and cheap fuel has facilitated the collection of large numbers of molluscs, including *C. tritonis*.

There are little scientific data on *C. tritonis*; most available information is based on casual observations, incomplete trade figures, reports from shell collectors or fishermen, and brief studies carried out by scientists. The data that exist suggest that the collection of this species has occurred throughout history and that collecting has occurred on a large scale only recently, on accessible coral reefs (Endean, 1969; Evans *et al.*, 1977; Hedlund, 1977; Wells *et al.*, 1983; McClanahan, 1989).

In most of the available literature Indo-Pacific tritons are listed as uncommon, rare or with populations seriously depleted. In Guam, populations are said to have been heavily exploited (Hedlund, 1977). Similarly, in the Philippines, tritons are becoming increasingly difficult to find (Wells, 1981). They are noted as generally uncommon on the Great Barrier Reef (Endean & Stablum, 1973), and were intensively collected from some islands of the Marianas and Carolines in the 1960s (Chesher, 1969). The species became protected in Fiji after a thousand were displayed for sale in the Suva market in 1970 (Owens, 1971). Tritons are regarded as uncommon in the Red Sea (Ormond & Cambell, 1971) and on the reefs off Kenya (McClanahan, 1989).

Giant tritons were regularly observed in the Caribbean in the 1950s (Percharde, 1972), but are no longer common in this area.

The giant triton has generally been regarded as uncommon on the Great Barrier Reef. However, it was estimated that 10 000 individuals per year were collected by the crews of trochus boats between 1947 and 1960 (Endean, 1969). Oral history reports (Great Barrier Reef Marine Park Authority) state that, in the 1950s, there were times when '...hundreds of specimens could be seen lined up on the Cairns wharf'.

Current research (Paterson & Poulsen, 1988) shows that giant tritons can be located in the vicinity of populations of Acanthaster planci (Crown-of-thorns starfish) on the Great Barrier Reef. They are difficult to find otherwise and are rarely observed by divers on reefs without starfish populations.

Marine invertebrates are often assumed to be resistant to over-collection by virtue of their high fecundity and often long-lived and widely dispersed larval stages. However, an analysis of trade statistics reveals a considerable increase in the volume of ornamental shells traded in the 1970s and the subsequent depletion of a number of mollusc species (Wells, 1983).

23. Habitat: *C. tritonis* is predominantly a coral reef species and, as such, threatened by deterioration and destruction of its habitat. Giant tritons, along with all coral reef species, are threatened by declining habitats world-wide. Activities such as over-exploitation of fish, molluscs and other reef species, blasting, dredging, sewage outflow, sedimentation, oil and chemical pollutants, Crown-of-thorns starfish infestations and global warming with consequent sea-level rise and temperature increases pose serious threats to the continuation of healthy, productive reefs.

3. Trade Data

31. National Utilization: The giant triton is an edible species and is used by Australian indigenous peoples (Poulsen, pers. comm., 1993), Asians and Pacific Islanders (Chesher, pers. comm., 1993). Although they are protected in Queensland, Australia, triton shells are imported from elsewhere (for example, the Philippines) for sale in retail outlets.

Giant tritons have traditionally been used as musical instruments and continue to be widely recognised as such. In Japan they are used as horns for military and ceremonial purposes (Kira, 1962). They are used as trumpets in the South Sea Islands, Indonesia and the Seychelles and have been for centuries (Abbott, 1973). In Tonga they are blown during the funeral processions of chiefs. In the Society Islands tritons are blown when warriors march to battle and when processions are made to temples. In Fiji and Vanuatu tritons are blown in connection with sacred drinking ceremonies. In Vanuatu tritons are also blown to call people to gather together for urgent meetings and to inform people about deaths (E. Bani, *in litt.*, 17 May 1994). Giant tritons have a long history in the Atlantic and Caribbean regions, as trumpets and ornaments (Abbott, 1973).

32. Legal International Trade: Giant tritons are available for sale in most Indo-Pacific countries and are regularly collected in Indonesia (R. Vanwoesik, pers. comm., 1993), Vanuatu (C. Schiller, pers. comm., 1993), Tonga (R. Chesher, pers. comm., 1993), Papua New Guinea and the Solomon Islands (L. Newman, pers. comm., 1993), and the Philippines (Poulsen, pers. obs., 1993). However, they appear to be becoming less generally available, reflected through:

(i) The high prices now being sought for shells (eg, AU$200, Hamilton Island, Australia). Giant tritons were sold for between AU$50 and AU$80 in 1986 - 1988 and large good quality specimens were regularly traded. Prices now vary depending on the condition of the shell, ranging from AU$80 for small (200 - 300 mm) specimens, to AU$200 for large ones. Large, good quality shells are now rarely seen for sale in Australia (Poulsen, pers. obs., 1986-1988, 1993).

(ii) The poor quality of shells (chipped, broken and cracked, poorly marked, discoloured and heavily bored by sponges) which are offered for sale. The majority of giant tritons being sold on the retail market in Australia show considerable signs of damage.

In 1970 tritons in Hawaii sold for US$65 each. In 1978, when the shell and coral trade was booming, prices dropped to between US$7 and US$30 (Wagner & Abbott, 1978). In 1981 specimens in the Philippines sold for US$5 and US$20 (Wells, 1981). These figures are indicative of the large quantities of tritons collected at that time. Importation of shells into the USA reached a peak of 4 600 tonnes in 1977 (Wells, 1981).

Giant tritons are still being collected in the Philippines, and are imported into Australia for the retail market. However, the number and quality of tritons available for sale in Australia has decreased over the past ten years with a subsequent marked increase in price.

A total of 14 giant triton shells have been authorised for export from Australia during the period 1984 to 1994.

In Vanuatu, juvenile and adult tritons are sold directly by local people to tourists (as they are in most Pacific Island countries) for approximately AU$50-AU$60.

In the part of the Pacific coastal area of Japan, the species is taken for food and handicraft, but there is no scientific evidence that the species is decreasing or threatened with extinction (M. Nakamura, Embassy of Japan, Canberra, Australia, *in litt.*, 24 March 1994).

In Thailand, Poulsen (*in litt.*, 21 March 1994) observed five giant triton shells for sale at the Chatuchak weekend market, Bangkok, in January 1994. Their sizes ranged from 250 mm to 450 mm and the price from 850 baht (approx. AU$50) to 1450 baht (approx. AU$88). The Thai Department of Fisheries (*in litt.*, 10 March 1994) advised that it had proposed C. tritonis for listing as protected under the Wildlife Reservation and Protection Act which is due to come into force by the end of 1994. The Department stated that the reason for such listing is the current status of the species in the wild. "This mollusc serves as a food for many local people residing along the coast of Thailand and is much sought after by collectors." "Its large size renders relatively easy to collect and many populations occurring in accessible reefs have been extirpated through over-collecting."

In Israel, *C. tritonis* has been subjected to "heavy damage by collectors and they are rare today in both seas" (R. Ortal, Nature Reserves Authority, Israel, *in litt.*, 13 March 1994). Ortal stated that, during the past year, "four nice specimens collected alive at Sinai (Egypt) were taken by the Israeli custom at the Taba control border station from tourists who collected/purchased them."

In Papua New Guinea, *C. tritonis* is "very widely used by the local maritime populations and recently its scarcity has been noticed" (I. Ila, Department of Environment and Conservation, *in litt.*, 6 May 1993).

Trade statistics (Wells, 1981) reveal that, among the quantities of shells and corals traded throughout the world, the large colourful marine gastropods are the most popular species. Species such as the queen conch *Strombus gigas*, tiger cowrie *Cypraea tigris*, nautilus *Nautilus pompilius*, helmet shell *Cassis cornuta*, giant clam *Tridacna gigas*, as well as *C. tritonis*, are heavily exploited and in many areas (eg, Guam, Florida, Seychelles, Philippines) have suffered significant population decline (Wells, 1981).

The USA, Europe and Hong Kong are major importers of molluscs. The Philippines is a major supplier of ornamental shells. India, Mexico and Haiti have also gained recognition in recent years as shell exporters (Wells, 1981).

At present levels of collecting, populations of giant tritons will continue to decline and may become locally extinct on some reefs, particularly those in the vicinity of inhabited coasts. The over-collection of shells on the coast of Kenya has virtually denuded popular and accessible reefs, prompting the Kenyan Government to protect specific areas and impose bag limits on certain species (McClanahan, 1989).

33. Illegal Trade: There is no evidence of illegal collection of giant tritons in Australian waters. Severe penalties for illegal fishing in Australian waters appear to be an effective deterrent. The situation in other range countries which provide any form of protection for the species is unknown.

34. Potential Trade Threats: Continuing unmonitored and uncontrolled trade in the species.

4. Protection Status

41. National: *C. tritonis* is subject to export control in Australia under the Wildlife Protection (Regulation of Exports and Imports) Act 1982. In the State of Queensland, *C. tritonis* is listed as a 'protected species' under the second schedule of the Fisheries Act 1976-84.

42. International: *C. tritonis* is protected in Fiji (Owens, 1971) and the Seychelles (Salm, 1978). Juveniles are protected in Vanuatu but are collected and traded (C. Schiller, pers. comm., 1993). In Kenya, a licensing system limits collection, although enforcement is difficult (Wells, 1983).

The protection status in other countries is unknown.

43. Additional Protection Needs: Listing on CITES Appendix II will enable monitoring of the international trade in this species and the application of subsequent corrective action if over-exploitation occurs.

5. Information on Similar Species

C. tritonis is one of two species in the genus Charonia. However, the shells of the two species are readily distinguishable and unlikely to be confused.

Subspecies or forms in the *Charonia lampas* complex are readily distinguished from *C. tritonis* by their considerably smaller shell (150-260 mm long), their relatively dull shell surface, prominent nodules and temperate distribution. The radular of *C. tritonis* is distinct from *C. lampas*; the inner lateral tooth is broader and the extremities of the basal plate of the central tooth are bent downwards much further (Beu, 1970). The *C. lampas* complex has distinctive isolated populations in the eastern Atlantic and Mediterranean, Japan, South Africa, New Zealand and southern Australia. Shells of these isolated populations are all alike and interpretation of their taxonomic relationships is difficult (Wilson & Gillett, 1979). The nominate form of the species is found in the eastern Atlantic and the Mediterranean, *C. lampas pustulata* is found in South Africa, *C. lampas sauliae* in Japan, *C. lampas capax* in New Zealand, and *C. lampas rubicunda* in Australia (Wilson & Gillett, 1979).

6. Comments from Countries of Origin

France

A. Bonneau, Ministère de l'environnement (fax dated 3 June 1994) provided a copy of advice from Dr P. Bouchet of the French Scientific Authority indicating support for the proposal to list *C. tritonis* on Appendix II. The advice notes that the species occurs in several French territories: *C. tritonis tritonis* being found in Reunion, Mayotte, New Caledonia, Wallis and Futuna, and French

Polynesia; *C. tritonis variegata* in Guadeloupe and Martinique. It is stated that the utilisation of the species in these territories is by local collectors and divers rather than for international commerce.

Germany

Bauer, Bundesamt für Natuurschutz (fax dated 16 March 1994) stated that *C. tritonis* has been protected by the German Ordinance on the Conservation of Wild Species of Fauna and Flora since 1 January 1987. Germany has not recorded any trade in this species during 1988-1993.

Israel

The Nature Reserves Authority (R. Ortal, fax dated 13 March 1994) indicated that Israel supported and highly recommended inclusion of the species in Appendix II of CITES.

Japan

The Government of Japan, through its Embassy in Canberra, Australia, advised (fax dated 24 March 1994) that it was opposed to the proposal. Japan stated inter alia that "it is not appropriate to list in Appendix II just for the purpose of collecting trade data under CITES without reasonable evidence that shows such species meets objective criteria for the listing." "The Government of Japan also believes that to increase the number of listed species without adequate scientific information does not only contradict the objectives of CITES but also impose unnecessary additional enforcement burden on the Management Authorities of member States, thus diminishes the effects of the management and regulation on the species that truly require protection."

New Zealand

New Zealand (D. Hutchinson, Department of Conservation, *in litt.*, 24 May 1993) indicated support for listing the species on CITES. Hutchinson (*in litt.*, 26 May 1994) reiterated New Zealand's support for listing the species on Appendix II.

Papua New Guinea

I. Ila, Department of Environment and Conservation (*in litt.*, 6 May 1993) advised that Papua New Guinea would support listing *C. tritonis* on Appendix II

Seychelles

Division of Environment of the Ministry of Foreign Affairs, Planning and Environment indicated (fax dated 22 February 1994) that they welcomed the proposal and were prepared to support it.

South Africa

The Department of Environment Affairs, Pretoria, indicated (fax dated 18 March 1994) that "South Africa support the inclusion of *Charonia tritonis* in Appendix II of CITES, although there is no real trade in this species in South Africa."

Thailand

The Department of Fisheries (*in litt.*, 10 March 1994) indicated its support for the proposal and stated that it had proposed listing *C. tritonis* on the List of Protected Species under the Wildlife Reservation and Protection Act, B.E. 2535 (A.D. 1992) which is due to come into force by the

end of 1994. "Under this Act, all protected species shall be prohibited for hunting, taking, collecting, trading, possessing, exporting, importing, etc."

Vanuatu

E. Bani, Environment Unit (*in litt.*, 4 May 1993) indicated that Vanuatu supported the proposal in principle. E. Bani (*in litt.*, 17 May 1994) reiterated Vanuatu's support for the proposal.

Other countries

No response was received to a letter dated 13 January 1994 from the following countries:

Anguilla, Antigua and Barbuda, Bahamas, Bahrain, Barbados, Belize, Brazil, People's Republic of China, Colombia, Comoros, Cook Islands, Costa Rica, Cuba, Cyprus, Djibouti, Dominican Republic, Egypt, Ethiopia, French Polynesia, Grenada, Guadeloupe, Haiti, Honduras, India, Indonesia, Iran, Jamaica, Jordan, Kenya, Kiribati, Kuwait, Madagascar, Malaysia, Maldives, Marshall Islands, Martinique, Mauritius, Mexico, Federated States of Micronesia, Mozambique, Myanmar, Nauru, Netherlands (for Netherlands Antilles), Netherlands Antilles, Nicaragua, Palau, Northern Mariana Islands, Panama, Philippines, Qatar, Samoa, Saudi Arabia, Singapore, Solomon Islands, Somalia, Sri Lanka, Sudan, Tanzania, Tokelau, Tonga, Trinidad and Tobago, Tuvalu, United Arab Emirates, United Kingdom (for British Virgin Islands, Bermuda, Cayman Islands, Hong Kong, Pitcairn Islands), United States of America (inc American Samoa, Guam, Hawaii, Puerto Rico), Yemen.

7. Additional Remarks

The effects of widespread and large-scale collection of giant tritons on the community structure of coral reefs is poorly understood. Giant tritons are one of a few known predators of adult and sub-adult Crown-of-thorns starfish *Acanthaster planci* (Endean, 1969). It has been suggested that the removal of tritons may have initiated the massive population explosions of *A. planci* witnessed on Indo-Pacific coral reefs since the 1960s (Endean 1969).

C. tritonis is described by Percharde (1972) as being "fairly common in the waters of Trinidad and Tobago in 1958". It is considered one of the most voracious of the gastropod predators feeding on a large range of invertebrates. Percharde describes the attack by *C. tritonis* on breeding aggregations of the asteroid *Echinaster sentus*, driving and dispersing the starfish as they methodically attacked and devoured the outside members of the group. He concludes that this animal must play an important role in the ecological balance of the extensive areas of its habitat.

On the Great Barrier Reef, Australia, giant tritons were located in the vicinity of *A. planci* populations on Grubb Reef and John Brewer Reef (near Townsville) where they were observed to actively hunt and eat *A. planci* (Paterson & Poulsen, 1988). Observations of *C. tritonis* in the field suggest that tritons seek A. planci in preference to other prey species.

The recent reduction in the quantity and quality of shells available for sale in shell shops, diminishing coral reef habitats world wide, and the role this species plays in the population dynamics of *A. planci*, provide cause for immediate restrictions on the current uncontrolled exploitation of this species.

In view of the considerable trade interest in *C. tritonis* and the vulnerability of the species to over-collection, its role as a predator of high trophic status on coral reefs, and the relatively little knowledge of its habits and life history, it is appropriate that *C. tritonis* be included in Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora.

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