Tridacna derasa Röding, 1798

FAMILY: Tridacnidae

COMMON NAMES: Smooth or Southern Giant Clam, Derasa Clam (English)

GLOBAL CONSERVATION STATUS: Listed as Vulnerable (VU - A2cd) in the *2004 IUCN Red List of Threatened Species* (IUCN, 2004).

REVIEW OF SIGNIFICANT TRADE FOR: Australia, Comoros, Fiji, Marshall Islands, Micronesia, New Caledonia (France), Palau, Papua New Guinea, Tonga, Vanuatu, Viet Nam

Range States selected for review

Range State	Exports* (1994-2003)	Urgent, possible or least concern	Comments
Australia	1,650 live in 2003	Least concern	Commonly found; trade almost totally in captive- bred specimens
Comoros	None	Least concern	No international trade reported
Federated States of Micronesia	Very low	Least concern	Minimal trade
Fiji	Ca 13,000 of which 8773 wild-taken	Possible concern	Status of stock unknown; level of domestic use unknown; no information on population monitoring or basis for ensuring non-detrimental nature of exports was available.
Marshall Islands	Very low	Least concern	Minimal trade
New Caledonia	Wild taken shells total 1,123	Least concern	Low level of reported export.
Palau	Wild taken live 5,573, captive-bred 3,872	Possible concern	Apparently prohibits commercial exports although international trade still reported.
Papua New Guinea	7,500 kg meat in 1999 (F)	Least concern	Meat from captive-born (F) clams only. Wild export banned in 2000.
Tonga	14,399 wild live; 11,000 wild taken shells in 2001	Urgent concern	Population over fished; wild export apparently banned in 1993, imports of wild specimens from Tonga recorded
Vanuatu	Low: Some wild-taken shells	Least concern	Minimal trade
Viet Nam	None	Least concern	No international trade reported

* Excluding re-exports

SUMMARY

Tridacna derasa has been included in CITES Appendix II since 29 July 1983. The species is considered Vulnerable on the 2004 IUCN Red List (IUCN, 2004). It has been declared extinct, locally or nationally, in several countries, with declines primarily due to overexploitation for domestic use and, to a lesser extent, international trade.

Eleven countries were initially selected by the CITES Animals Committee for this review. Of these, two (the Comoros and Vietnam) were excluded from detailed review because there was no CITES-reported trade from those countries. Of the remaining nine, a further two countries (Marshall Islands and Federated States of Micronesia) were excluded based on an initial analysis of trade data, which showed that annual exports were less than 100 specimens (including shells, live, carvings etc.) per year during the most recent five years for which data were available (1999– 2003). International trade in *T. derasa* was reported from an additional 14 countries not selected for review.

Trade data indicate that for some countries exports of wild-taken live specimens, meat and shells of *T. derasa* have decreased or remained more or less stable. However, it is hard to judge the accuracy of this because of the reporting of a significant proportion of the trade in *Tridacna* species at the genus or higher

level. Another general problem with data from exporting countries is that in many cases countries provide data in the form of amounts on permits issued as opposed to the actual amounts exported which may in fact differ.

For most range States, no population monitoring seems to be in place and harvest and use of giant clams are inadequately regulated or not at all. Results of the study indicate that, in the majority of range States concerned, data and information that are necessary to ensure that exports comply with Article IV and make non-detriment findings may not be available, although in many of these recorded trade was at a very low level. Exceptions were Fiji, New Caledonia, Palau and Tonga

Data from importing countries indicate that Fiji has exported considerable quantities of *T. derasa* during the period 1994-2003, predominantly as live specimens (ca. 13,000), of which the majority were reported as of wild origin. Recent reported trade has been at a low level. However, without information on the status of reintroduced stocks and harvest levels for domestic consumption, it is not possible to assess whether or not export levels are detrimental to the species' survival in Fiji. Trade from Fiji has therefore been classified as of Possible Concern.

The currently low level of export of *T. derasa* from New Caledonia is of Least Concern, although it should be noted that insufficient monitoring appears to be in place to ensure that exports are not detrimental to wild populations of the species.

While *T. derasa* is subject to a ban on commercial exports from Palau, a relatively high level of export has been recorded in live specimens during the period 1994-2003 (ca. 9,000 in total), both captive bred and wild sourced, with the latter making up the bulk. There are also indications of earlier stock declines. It is unclear if sufficient information is available to the Palau Authorities to make non-detriment findings and hence the species is considered to be of Possible Concern.

Although in 1993 Tonga, a non-Party to CITES, adopted a ban on export of giant clams unless they were from farmed sources, importing countries have continued to report significant trade in *T. derasa* of wild origin from Tonga, with such trade recorded in large volumes in every year from 1995 to 2003. Most such trade is in live clams, although export of 11,000 kg of shells was recorded in 2001. Trade in *T. derasa* declared as from farmed sources was also reported, although there is apparently no commercial clam breeding facility currently operating in Tonga. A category of Urgent Concern has been assigned.

Trade from other range States designated for review was shown either to be negligible or to comprise captive-bred stock. Trade in this species was considered to be of Least Concern in these countries (Australia, Comoros, Federated States of Micronesia, Marshall Islands, Papua New Guinea, Vanuatu and Vietnam). These countries have therefore been excluded from detailed reviews, except for Papua New Guinea and Vanuatu, which warranted further discussion.

Ongoing trade in giant clam species recorded to the family level hinders accurate analysis of the impact of trade on specific species.

SPECIES CHARACTERISTICS

Globally, IUCN classifies the conservation status of *T. derasa* as Vulnerable A2cd (IUCN, 2004). General information on the biology of *T. derasa* and other giant clam species is provided in the accompanying introduction.

Table 1. Maximum shell length observed and size and age at first year of sexual maturity

Species	**Maximum**	**First year of sexual maturity**				**Remarks**
	Shell	**Male**		**Hermaphrodite**		
	Length	**Age (yr.)**	**Size (cm)**	**Age (yr.)**	**Size (cm)**	
T. derasa	60	5	14	10-11	34	Mariculture highly successful

(Source: Raymakers *et al*., 2003)

Tridacna derasa is still reasonably abundant and occurs in Australasia: Australia, Cocos Islands, Fiji, Indonesia, New Caledonia, Palau, Papua New Guinea, Philippines, Solomon Islands, Tonga and Viet Nam. It has been introduced to American Samoa, Cook Islands, Marshall Islands and Samoa and reintroduced after extinction in Guam, the Federated States of Micronesia and Northern Mariana Islands. It is possibly introduced to Samoa and Hawaii (Anon., 2000; Wells., 1997). The UNEP-WCMC CITES Species Database lists *T. derasa* as extinct in Vanuatu (2006).

T. derasa has been hunted extensively throughout its natural habitats, with populations declining locally as a result. In protected areas (the Great Barrier Reef in Australia for example) the species is sometimes found in densities of up to 30 clams a hectare (2.47 acres).

T. derasa was one of the first clams to be commercially bred (Lukan, 1999). Cultivation can be highly successful (Loto'ahea and Sone, 1998; Seraphin, 2002).

INTERNATIONAL TRADE

T. derasa is a popular food item. Eleven countries were initially selected by the CITES Animals Committee for this review. Of these, two (the Comoros and Vietnam) were excluded from detailed review because there was no CITES-reported trade from those countries. Of the remaining nine, a further two countries (Marshall Islands and Federated States of Micronesia) were excluded based on an initial analysis of trade data, which showed that annual exports were less than 100 specimens (including shells, live, carvings etc.) per year during the most recent five years for which data were available (1999– 2003). Information on regulation of harvesting and trade, population monitoring and the basis for the non-detriment finding in these countries is provided below.

International trade in *T. derasa* was reported from an additional 14 countries not selected for review with significant trade reported from the Solomon Islands.

Table 2: Exports excluding re-exports of *Tridacna derasa* by significant traders

Term	Unit	Source	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	Total
Australia													
Live		C										1650	1650
Meat		C					10						10
Shells		C					1						1
Shells		W									1		1
Cook Islands													
Live		C										5951	5951
Live		F										300	300
Live		W										319	319
Fiji													
Live		C				283	404	2372	664	442			4165
Shells		C							300				300
Live		F										150	150
Shells		F									300		300
Live		W	342	96	379	1988	1494	2121	1217	942	194		8773
Live	kg	W				174	3			35			212
Shells		W				27	20						47
Shells	kg	W				12							12
Indonesia													
Live		C								80			80
Live		F							185	423			608
Live		W				30			3	803			836
New Caledonia													
Carvings		W								1		5	6

Term	Unit	Source	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	Total
Shells		W					103	93	211	310	192	214	1123
Papua New Guinea													
Meat	kg	F						7500					7500
Palau													
Live		C			1120	48		226	797	875	346	460	3872
Meat		C							50				50
Shells		C					20	10	103	6	6		145
Live		F										20	20
Live		W	817	54	188		112	167	884	1902	1218	231	5573
Meat		W			8								8
Meat	kg	W							6	5			11
Shells		W			138		9	3	2	2	18		172
Solomon Islands													
Live		C		195	150	4185	4406	5129	4638	1542	1322	5	21572
Meat		C					10						10
Meat	kg	C				17	455						472
Shells		C				6	7			200		3	216
Live		F								700	100	1	801
Live		W	1778	9145	11217	8303	8320	6941	5543	1815	45	205	53312
Shells		W				118							118
Tonga													
Live		C	25	393	795	517	894	895	1879	1970	199	340	7907
Live	kg	C							48	66			114
Shells		C										200	200
Live		F									18	196	214
Live		R								400			400
Live		W		1119	4232	731	2743	1431	1407	1523	867	346	14399
Live	Kg	W				43			75	54		24	196
Shells		W							4				4
Shells	kg	W								11000			11000
Vanuatu													
Live		W						150	905				1055
Shells		W				4			25				29
Western Samoa													
Live		C							162	109	9		280
Live		W			116	1108		100	2004	159			3487

(Source: CITES trade statistics derived from the *CITES Trade Database*, UNEP World Conservation Monitoring Centre, Cambridge, UK)

COUNTRY ACCOUNTS

Australia

Status:

Abundant in Queensland (Wells, 1997).

Management and trade:

During the period 1994-2003, significant numbers of *T. derasa* were reported in trade from Australia during a single year only, 2003, when a total of 1,650 live captive-bred clams were reported as imports;

corresponding records of exports were not recorded in CITES trade data for this year. Exports of wild product was limited to a single specimen in 2002. Approximately 2,400 live captive-bred *T. derasa* were reported as imported from Australia in 2004, with Australia reporting the export of slightly fewer clams during this year.

The giant clam trade is regulated by the Australian Management Authority under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). In cases of exports where the trade is for commercial purposes, a permit may only be issued if the specimens are sourced from a captive breeding program or an approved harvesting or ranching operation (CITES Management Authority Australia, 2002). Captive breeding programmes are approved on the basis that the parental stock was established in a way that is not detrimental to the survival of the species in the wild and is managed in a way that ensures its long-term genetic viability. A single operation has been approved to breed *T. derasa*. There are no wild-harvest or ranching operations approved for Tridacnidae species. No information was available on population monitoring.

With trade limited to captive-bred specimens, trade from Australia is considered of Least Concern.

Fiji (CITES Party since 1997)

Status:

In the 1990s, most abundant in windward, eastern islands. Over-fished especially near population centres (Wells, 1997). The current status of stocks is unknown.

Management and trade:

Although Fiji provided export data for giant clams in their CITES annual reports beginning in 1998, these have not been incorporated into the CITES trade database by UNEP-WCMC as there are questions concerning the data. Queries have been sent to Fiji's CITES Management Authority, and the data will be incorporated into the database once the questions have been resolved (Caldwell *in litt*., 2006). Information below on CITES-reported trade is therefore based solely on data from CITES Parties reporting imports from Fiji. The ability of CITES data to support assessment of the potential impacts of recent trade levels on wild populations is hindered further by the failure to report some imports to the species level. Significant quantities of giant clams have been reported simply as “Tridacnidae spp.”, precluding accurate analysis of the impact of trade on specific species.

Reported imports of *T. derasa* from Fiji have comprised largely live specimens. Imports of wild live specimens were recorded each year from 1994 to 2002, peaking at 2,121 in 1999, but declining to 194 in 2002 and nil in 2003. Reported trade in wild *T. derasa* has thus declined to zero. Imports from Fiji of captive-bred live specimens were reported between 1997 and 2001 with the highest amount being 2,372 in 1999. Trade since then has declined to only 150 captive-born (F) specimens in 2003. In 1999, 6,620 live specimens of giant clam, and in 2002, 1,413 shells, were imported from Fiji as Tridacnidae spp.; it is not known how many of these were *T. derasa*. It is unclear if the decline in trade in both wild-caught and captive-bred product is a result of improved implementation of permit issuing in Fiji and compliance with laws, reflects concerns regarding wild populations and a lack of supply from farmed sources, and/or is the result of incomplete reporting.

There was no information available on the domestic market for, or level of collection of, *T. derasa* specifically, but this species is known to be used along with other giant clam species. Clams are collected for subsistence purposes and considered as ‘high status food’ for use on special occasions or as a reserve food when times are difficult. In the 1980s, giant clam meat was sold in municipal markets and directly to restaurants, supermarkets and other outlets, and was considered to be expensive relative to other seafood products (Wells, 1997). In 2003, clam meat from wild stocks was being sold in markets (Raymakers *et al*., 2003) and in 2006 clam meat was still served in at least one restaurant (Parry-Jones, *in litt*., 2006).

There is no regulation of domestic harvest of giant clams, although exploitation guidelines were drawn up by the Fisheries Division in 1984 (Wells, 1997). Available information indicates that domestic use and sale is also unregulated. Export of wild giant clam meat was banned in 1988 under the Fisheries Act (Cap. 1.58) of 1942, amended in 1992. The Act includes a clause allowing the Permanent Secretary responsible for fisheries to make exceptions for meat from verified mariculture sources. It is therefore possible that the classification of 'wild' in trade data may refer to clams from hatcheries that are placed on the reefs to grow out (Parry-Jones, *in litt.*, 2006). It is not clear whether the export ban also applies to the export of live specimens. No information was available with regard to population monitoring.

Mariculture: The Makogai Hatchery is the only facility producing giant clams at present for both restocking and for the aquarium trade. There are small village grow-out operations (Sant, 1995; Wells, 1997). Brood stock of *T. derasa* was imported in 1992 from Australia (Wells, 1997). Records of trade in wild rather than captive-bred specimens may be a result of misreporting by importing Parties.

Without information on the status of reintroduced stocks and harvest levels for domestic consumption, it is not possible to assess whether or not current export levels are detrimental to the species' survival in Fiji. Trade from Fiji has therefore been classified as of Possible Concern.

New Caledonia (France)

Status:

New Caledonia was one of the confirmed centres of abundance for *T. derasa* (Wells, 1997).

Management and trade:

Small quantities of wild-taken *T. derasa* shells have been exported each year since 1998, the largest annual amount being 311 in 2001; the majority (over 90% each year) go to France. There are almost no corresponding records of imports (22 in 1998 and 15 in 1999, all by France). All trade is reported to be for personal use.

Giant clams are traditionally fished for meat in New Caledonia. Domestic markets for clam meat are poorly documented and difficult to separate from subsistence use. Quantities sold locally (i.e. excluding subsistence consumption) are estimated at two to three tonnes per year. Many restaurants have giant clam meat on their menu. *T. derasa* is one of the main species harvested for its meat and shell. Shells of *T. derasa* are collected in the lagoon and sold to tourists and residents. There seems to be no local demand for live specimens of giant clams or export of these for the aquarium markets (Baillon *et al. in litt.,* 2002).

Information on legislation relevant to giant clams is incomplete. Non-commercial fisheries are not regulated in the *Province des Iles,* although the customary Kanak tenure system may have some relevance. It is understood that giant clams may only be collected by free divers without any underwater air supply device, e.g. scuba and hookah, and only for personal consumption (e.g. sport, leisure). Harvest and trade of giant clams are also regulated through the national licensing and reporting system (Raymakers *et al.,* 2003). In the Northern Province, giant clams are on the list of protected fauna under *Délibération N°23 & N°85-2001/BPN,* but under Article 2 of this regulation, fishing for giant clam species is allowed with an easily acquired "hunting" permit. In 2002 draft legislation was under consideration in the South Province to restrict harvest to licensed professional fishermen and thereby prohibit harvest by non-professionals. It is understood that similar provisions are being drafted for the Northern Province. "Commercial" export of shells is not permitted, but personal exports of up to 6 valves per family is permitted. In 2003 the maximum size of exportable shells was set at 25 cm to provide some protection for breeding adults (Constantin *in litt.*, 2004).

Very little scientific research has been carried-out on wild populations, with baseline information on which to base management plans and information on population monitoring lacking. New Caledonian authorities acknowledge that there is 'little objective basis on which to base any estimation of the risks involved in the export of clams on the current stocks'. The preliminary results of a study conducted in the Northern Province to evaluate clam resources do not yet provide insight on the abundance of the resource but indicate that less than 5% of fishers target clams (Constantin *in litt.*, 2004). The current knowledge of their abundance and recruitment does not provide sufficient basis to set-up adequate management measures or ensure that exports are non-detrimental, as required under CITES. (Constantin *in litt.*, 2004).

Mariculture: Experiments on artificial breeding of giant clams were conducted by IFREMER (Institut français de recherche pour l'exploitation de la mer) in New Caledonia from 1993 to 1999, but these were not successful for *T. derasa* (although they were for some other clam species).

The currently low level of export of *T. derasa* from New Caledonia is of Least Concern. However, should trade increase, additional information would be needed to determine whether trade is detrimental to wild populations of the species.

Palau (CITES Party since 2004, Reservation on the listing of T. derasa)

Status:

Palau is a confirmed centre of abundance (Wells, 1997). Nichols (1991) noted that stocks appeared to be in decline as a result of overharvest.

Management and trade:

As Palau has only been a CITES Party since 2004, CITES-reported trade for the present review is limited to records from importing countries only. *T. derasa* is the main species of *Tridacna* exported from Palau. Reported imports from Palau have been primarily of live specimens from both wild and captive-bred sources with very small quantities of shells and meat from time to time. This trade has taken place despite a ban on commercial export of wild product. Reported imports of live specimens said to be from wild sources have varied, with a high in 2001 of 1902 specimens, declining to 1218 in 2002 and 231 in 2003. In addition, several hundred captive-bred live specimens were reported by importing countries during each of the years 1999-2003, jumping to 2091 in 2004. Nichols (1991) noted that giant clams were collected by coastal villagers for subsistence use as food and also that there was a large amount of poaching, with illegal trade occurring.

Palau took a reservation on the listing of *T. derasa* when it joined CITES in 2004, with the effect that it is treated as a non-Party with regard to the trade in this species. However, Title 24: Environmental Protection, Chapter 12: Protected Sea Life, Subchapter VI of the Palau National Code prohibits commercial export of all species of clam. An exemption for aquaculture-produced clams is allowed under Section 1008 of the Endangered Species Act. Violations attract a fine of US$500-2,000 and/or 12 months in jail (Nichols, 1991).

Mariculture: Palau has the only viable commercial giant clam hatchery of the South Pacific (Raymakers *et al.,* 2003). It produces *T. derasa*, amongst other species, as seeds for other countries' enhancement programmes (e.g. Fiji, Federated States of Micronesia, Guam, Marshall Islands and Solomon Islands), as ornamental invertebrates for the aquarium trade and as food for restaurants (Anon., 1998), particularly as sashimi in Japan (Shang *et al*., 1992).

It is unclear if sufficient information was available for the Palau Authorities to ensure that exports are maintained within sustainable levels. Because of this, and earlier indications of stock declines in giant clams, *T. derasa* in Palau is considered to be of Possible Concern.

Papua New Guinea

Status:

Northern Papua New Guinea was considered a confirmed centre of abundance, but this species is not generally found near the mainland (Wells, 1997).

Management and trade:

During the review period the only reported trade of *T. derasa* was exports of 7500 kg of meat in 1999. There have been anecdotal reports of substantial amounts of clam (species not known) being caught in waters of Papua New Guinea, transferred by land across the border to West Papua (former Irian Jaya, Indonesia) and sold on Indonesian markets and hence not appearing in trade statistics.

Giant clams are harvested in Papua New Guinea for subsistence purposes (Munro, 1989). The number of fishermen involved is unknown, but the main domestic use is meat. A representative of the Papua New Guinea National Fisheries Authority stated that it was difficult to estimate both the annual harvest of giant clams and the amounts exported (CITES Management Authority Papua New Guinea, 2002).

Export of wild giant clam products was banned between 1988 and 1994; the ban was reinstated in 2000 and is believed to still be in place. Fishing for subsistence purposes by villagers is allowed (Kinch, 2002).

No information was available regarding current population abundance and/or stock assessments and, as of 2002 no scientific or conservation projects for Tridacnidae species were known to be being developed or undertaken in Papua New Guinea (CITES Management Authority Papua New Guinea, 2002). In 2002 there was no monitoring of populations taking place, and no restrictions regarding fishing seasons, fishing gear and size limits.

Mariculture: There were no giant clam mariculture operations in Papua New Guinea as of the mid-1990s, although research had been carried out in the past (Wells, 1997).

The ban on exports imposed in 2000 appears to have been successful in stemming legal exports of *T. derasa*. There have been no recorded exports since 1999. Given this, it is recommended that international trade in *T. derasa* be classified as of Least Concern and that attempts be made to ascertain the nature and extent of any trade in the species that may be bypassing official channels.

Tonga (Not a CITES Party)

Status:

Overfished especially near population centres (Anon, 1995; Wells, 1997).

Management and trade:

Since Tonga is not a CITES Party, all reported trade is based on records from importing Parties only. The ability of CITES data to support assessment of the potential impacts of recent trade levels on wild populations is hindered further by the failure to report some imports to the species level: significant quantities of giant clams imported from Tonga have been reported simply as “Tridacnidae spp.” In addition, the majority of trade in meat, which is typically reported by weight, was reported without any units attached - between 1999 and 2003 imports from Tonga of “Tridacnidae” meat was between 4,500 and 8,000 annually. It is assumed that this represents the number of specimens rather than the total weight of the shipments.

Substantial imports of *T. derasa* from Tonga were reported during the period, comprising largely live specimens from both wild and captive-bred sources. Reported imports of live wild specimens peaked at

4,232 in 1996 and averaged around 1,000 from 1997 to 2002, before falling to 346 in 2003. Reported imports of live, captive-bred specimens peaked at 1,979 in 2001 but had fallen to 340 in 2003. In addition, 11,000 kg of *T. derasa* shell (W) was exported in 2001. Both live and shell product is variously reported in kg and numbers of specimens. Substantial imports of "Tridacnidae" meat have been seized in New Zealand, primarily items carried as personal effects from Tonga by people visiting relatives. It is not known whether this includes specimens of *T. derasa*.

A representative of the Ministry of Fisheries estimated that 20-50 fishermen were engaged in giant clam harvesting for domestic use (Raymakers *et al.,* 2003), but local demand for clam meat as a food source is relatively limited (Tacconi and Tisdell, 1992).

Tridacnidae were protected under the Fisheries Act 1989 because of concern about over-fishing (Anon., 199l). More specific legislation covering harvest and sale of, as well as domestic/international trade in Tridacnidae products, is the Fisheries (Conservation and Management) Regulation, 1993, which came into force in 1994. Harvesting of wild giant clams for commercial export is banned, but local consumption and the souvenir trade is permitted. Clams produced on farms may be exported. There are limitations regarding the types of fishing gear used. Use of scuba and hookah is prohibited when harvesting *T. derasa.* There is also a minimum size shell length of 260 mm. There are no harvest and/or export quotas for Tridacnidae. Enforcement is the responsibility of the Ministry of Fisheries which does not consider poaching to be a problem, although there are indications that measures should be strengthened.

Protected areas in Ha'atafu, Pangaimotu, Hakautapu and Malinoa and other sanctuary areas have been established since 1988, and provide suitable habitat for Tridacnidae, but poaching has been reported (Chesher, 1993).

Wild Tridacnidae populations are not currently monitored.

Mariculture: Although there is no commercial "mariculture operation" in Tonga, commercial imports of live clams from Tonga have been reported that have been declared as either captive-born (F) or captive-bred (C). The juvenile giant clams are first generation specimens (i.e. 'F') born in a State-owned hatchery run for a conservation programme that is being carried-out to restock Tongan waters (CITES Management Authority Tonga, 2002). The Ministry of Fisheries has stated that:

1. There is a giant clam sanctuary: Some large clams were collected and placed in a protected area in the hope that it will increase the chance of natural reproduction.

2. Artificial seed production of giant clam ("ranching"): juvenile clams are protected by coastal village communities until they reach marketable size. Some of these clams are already 10 years old and are sexually mature. Some communities are using these as an attraction for tourists.

Reported imports of specimens declared as being of wild origin continue despite the 1993 ban on exports of *T. derasa* from wild stocks, with additional reported imports of clams declared as captive-born or bred although available information indicates that there is currently no commercial clam breeding facility operating in Tonga. As available information indicates that the species is overfished, trade from Tonga has been categorized as Urgent Concern.

Vanuatu

Status:

T. derasa is believed to be extinct, having been previously reported from the Maskelyne Islands, southeast of Malakula (Anon., 2000); this species was always very rare in Vanuatu (Wells, 1997).

Management and trade:

Between 1994 and 2003 small quantities (maximum of 905) of live product from the wild and insignificant quantities of shells were exported from Vanuatu. There has been no reported trade since 2001 when an export ban was introduced.

All Tridacnidae species occurring in Vanuatu are prized subsistence foods for the local Ni-Vanuatu population (Zann and Ayling, 1988).

An export ban on giant clams was declared in 2001, but harvest for domestic use is still legal and is believed to still occur. A protected area has been established for giant clams around the island of Efate and its offshore islands, which has been closed to giant clam fishing since 2000.

No information was available on population monitoring.

Mariculture: In 2001 it was reported that there was no commercial aquaculture in Vanuatu, although giant clam artificial breeding started in the late 1990s (Adams *et al*., 2001), with the potential to re-introduce species that are considered extinct such as *T. derasa*.

Since there has been no reported international trade in *T. derasa* from Vanuatu since the export ban was imposed in 2001, trade from this country is regarded as Least Concern. However, given the low estimated population, the situation should be reviewed if any increase in international trade is noted.

PROBLEMS IDENTIFIED THAT ARE NOT RELATED TO THE IMPLEMENTATION OF ARTICLE IV, PARAS 2(a), 3, or 6(a)

As noted above, the ongoing reporting of trade in giant clam species to the genus (e.g. *Tridacna*) or family level (Tridacnidae spp.) (see Annex) prevents a full assessment of trade levels, and therefore of the potential impact of international trade on wild populations. However, it is important to note that the quality of reporting by some countries has improved significantly, e.g. Indonesia, Viet Nam and Philippines. Reporting of trade from Cook Islands, Fiji, French Polynesia, Tonga, Vanuatu, Samoa and Solomon Islands continues to contain significant information only at the genus or higher level, often in conjunction with reporting by importing Parties. Reporting of trade at the species level would facilitate more accurate analysis of the impact of trade on specific species. Additional reporting problems that hinder accurate aggregation of data across years and species include: variations in the unit of measurement cited; difficulty in estimating the number of specimens involved when reports are made in "kg", which is common in the case of meat and shells; inconsistencies between records provided by importing and exporting countries.

Concerns regarding illegal trade in Tridacnidae have been noted, from Indonesia, and merit further review.

Trade from the Solomon Islands (not a Party and not selected for review) continues to be of concern. The entire family Tridacnidae was included in Phase 3 of the Review of Significant Trade review. Recommendations concerning export from the Solomon Islands were made in 1996, at which time the Secretariat's policy was to recommend against accepting export permits issued by the Solomon Islands. In July 1996 the Minister for Agriculture and Fisheries in the Solomon Islands explained by letter that the country prohibited the export of wild clams, and that those exported were cultured clams produced by a number of village-based farms from clams supplied by an ICLARM (now WorldFish Center) hatchery, which the Minister considered met the CITES definition of bred in captivity. In view of this, the Secretariat considered its recommendation to be no longer applicable. However, more recent sources, including the Food and Agriculture Organization of the United Nations (FAO) (Anon. 2002) and the South Pacific Commission, through its aquaculture portal (http://www.spc.org.nc/aquaculture, viewed March 3rd 2006) note that aquaculture activity had ceased by 2000 at the latest owing to civil unrest. Since then, Parties have recorded imports from the Solomon Islands of specimens of wild origin of all of the species of giant clam under review here. The nature of the specimens currently in trade from the Solomon Islands should be verified.

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