Annual status report 2007

Queensland Marine Specimen Shell Collection Fishery

Queensland Government
Department of **Primary Industries and Fisheries**

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The Department of Primary Industries and Fisheries (DPI&F) seeks to maximise the economic potential of Queensland's primary industries on a sustainable basis.

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Introduction

The Queensland Marine Specimen Shell Collection Fishery (MSSCF) harvests from a broad range of animals from the phylum Mollusca.[1] These are collected by commercial and recreational fishers for the purpose of display, collection, classification, research or sale (domestically and internationally). Shells are also collected by Indigenous fishers for food, artwork and tools. The fishery area comprises all of Queensland waters within the boundary of the Offshore Constitutional Settlement (Figure 1).

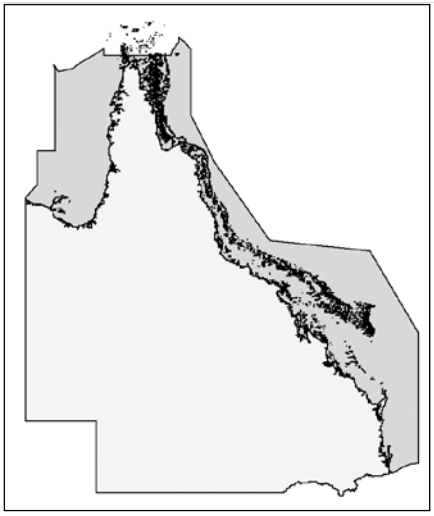

Figure 1: Area of the Queensland Marine Specimen Shell Collection Fishery.

Specimen shell molluscs may be alive or dead at the time of collection. The MSSCF includes the collection of beach-washed shells, but not the collection of fossilised shells. Other commercial fisheries (e.g. the East Coast Otter Trawl Fishery) cannot retain specimen shells.

This report describes the MSSCF for the 2006 calendar year.

Fishery profile 2006

Total harvest from all species: 812 individual shells

Commercial harvest: 0 individual shells (no commercial activity in 2006)

Recreational harvest: maximum estimated 812 individual shells taken by members of malacological societies (549 live, 263 dead)

Indigenous harvest: no estimate of level of harvest for 2006

Charter harvest: not applicable to the fishery

Commercial Gross Value of Production (GVP): no estimate available

Number of authorities: 3

Commercial boats accessing the fishery: 0

Fishery season: all year

Description of the fishery

Fishing methods

Shells are generally collected by hand or by using hand-operated shell dredges.

Fishery area

The fishery area comprises all of Queensland waters within the boundary of the Offshore Constitutional Settlement. Operators in the MSSCF are permitted to harvest specimen shells in areas that are not closed through general fisheries closures or marine parks zoning. The majority of commercial shell collecting occurs in coastal and reef waters of northern Queensland.

1 Does not include oysters, pearl oysters, trochus, giant clams, cephalopods and scallops. These are managed under separate arrangements.

Main management methods used

The MSSCF is managed under the Queensland Fisheries Regulation 1995 as part of the legislative framework of the Queensland *Fisheries Act 1994*. The fishery has been subject to a limited entry policy (no new licences issued) since 1997. Fisheries management focuses on the shell species that require particular attention, including endemic, rare or most commonly traded species.

A variety of input and output controls are used to manage harvest in the MSSCF, including:

- limited entry, gear restrictions (type and dimensions), spatial closures, possession limits and species restrictions for commercial operators
- possession limits, spatial closures and species restrictions for recreational fishers.

During the reporting period, two types of authorities allowed fishers to take specimen shells for commercial trade: a shell fishery authority and a shell endorsement attached to a commercial fishing boat licence. Conditions on a shell fishery authority do not limit the total number of shells that can be collected but restrict the collection of live shells to ten individuals per species annually. Shells taken under this type of authority can be sold to anyone. Conditions on a shell endorsement attached to a boat licence set a limit of 50 shells in possession with no additional limits on the number of live shells taken annually. Shells taken under this type of authority can be sold only to holders of Buyer Licences.[2]

DPI&F issues permits for the collection of marine shells for scientific research or display purposes, and for genuine shell collections which are comprised of cleaned, preserved and labelled specimens. Collection for these purposes is not limited in the same way as recreational collection; however, permit conditions may impose restrictions.

Although not required by current formal management arrangements, DPI&F has committed to monitor the take of groups of mollusc species that may require greater management attention. The species groups are based on factors such as vulnerability of life history, rarity, high market value and high level of demand.[3],[4] Species with similar conservation and management requirements have now been classified into the following four groups:

Group 1 — very common species and limited trading that are considered appropriately managed

Group 2 — selected species identified as requiring greater management focus and catch monitoring

Group 3 — rare, valuable or high demand species requiring greater management focus

Group 4 — species whose collection is prohibited under the *Fisheries Act 1994*.

Groups 2 and 3 are being monitored for changes in catch trends to determine if trade is harmful to ecological sustainability. Catches of these groups are summarised in Tables 1 and 2.

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2 Licensing changes implemented on 1 July 2006 provide for transfer of shell fishery symbols between commercial fishing boat licences and commercial harvest fishery licences (formerly Authorities to Take Fish for Trade or Commerce, referred to within text as shell fishery authorities). Conditions relating to catch and possession limits will remain attached to a particular symbol rather than relating to the type of licence to which the symbol is attached. However, regulations relating to the sale of shells will be relevant to the type of licence.

3 WF Ponder & JE Grayson, The Australian marine molluscs considered to be potentially vulnerable to the shell trade, Environment Australia, 1998.

4 A Weis, P Gaffney, & M Dunning, Ecological assessment of the Queensland Specimen Shell Collection Fishery: a report to AGDEH on the ecologically sustainable management of a highly selective hand and shell dredge collection fishery, Department of Primary Industries and Fisheries, Brisbane, 2004.

A conservative recreational bag limit of 50 shells in possession (live or dead) remains in place across Groups 1, 2 and 3 while further investigations are conducted into the appropriateness of current management controls.

Approximate allocation between sectors

There are more recreational collectors compared to commercial collectors in the state. Consequently more specimen shells were collected recreationally than commercially in 2006 (see the following section on catch statistics for more information).

Collection of shells for food, artwork and tools is an important cultural activity for Indigenous people in many coastal communities. There are no reliable estimates of the level of shell harvest for cultural purposes, but the total take could be substantial. There is likely to be minimal overlap between the species collected by Indigenous harvesters and those sought by commercial and recreational collectors.

Fishery accreditation under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)

The MSSCF was granted a five-year exemption from export controls under the EPBC Act on 1 December 2004. This exemption acknowledges that the fishery is being managed in an ecologically sustainable manner. The exemption expires on 1 December 2009.

Catch statistics

Commercial

There was no collecting effort in the MSSCF in 2006 and no shells collected (Figure 2).

Commercial harvest effort in the MSSCF is highly variable between years and the catch data show no real trends. This is a low value fishery with only a few commercial operators who harvest shells opportunistically (e.g. when the weather is good for boating) rather than as a regular activity. The variable data reflects this sporadic collection activity.

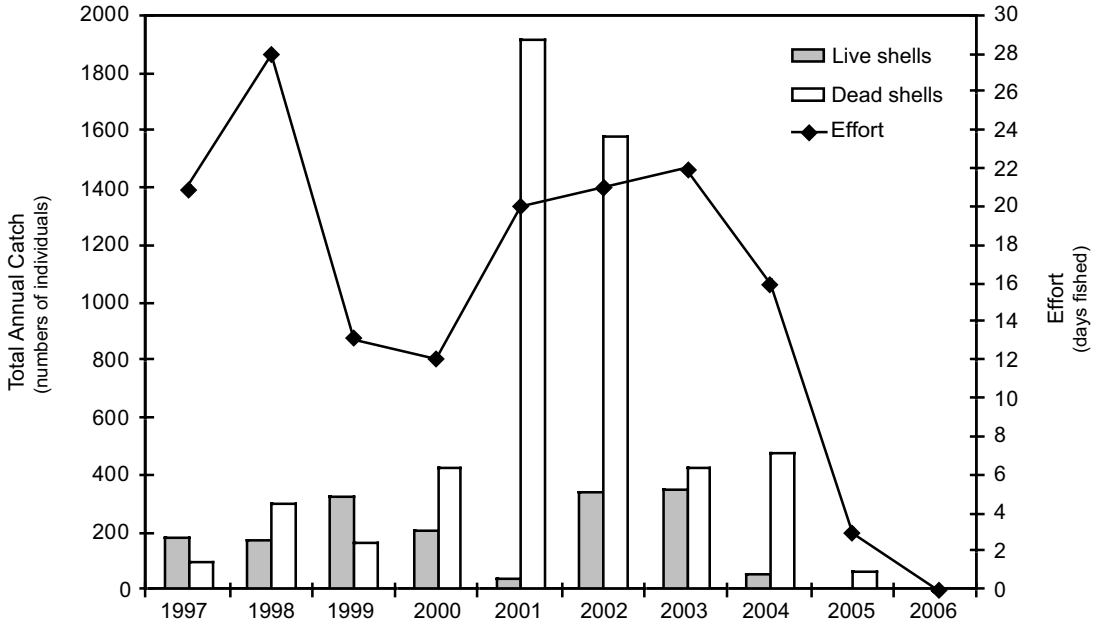

Figure 2: Commercial catch and effort for the MSSCF (Source: DPI&F CFISH database. 1 November 2007).

Recreational

Members of malacological societies are likely to constitute a significant proportion of the total number of recreational shell collectors in Queensland. Society members were surveyed by DPI&F in 2005 and again in 2006 to help quantify the recreational take of specimen shells. Society members were able to supply accurate collection data, including shell numbers, species and collection locations.

The survey estimated that a maximum total of 812 individual shells (comprising 549 live and 263 dead shells) were collected from Queensland waters in 2006. This was a lower total compared to 2005 (1054 comprising 702 live, 352 dead). Shell collection effort by malacological society members appears to be fairly evenly spread along the Queensland east coast. August was the most popular month for collecting in 2006. Weather conditions were not ideal for boat based activities along the Queensland coast in 2006 which probably contributed to the lower collection numbers.

Of the total number of shells collected, a maximum of 102 (154 in 2005) individual live shells were from Group 2 species and 24 (46 in 2005) from Group 3 species. These totals are very low. Both recreational and commercial collection of Group 2 and Group 3 shells will continue to be monitored to ensure that take is sustainable.

Indigenous

Shells are culturally important as food (e.g. mud clams), for adornment and for tools. The level of take of marine shells for these purposes may be quite substantial in coastal Indigenous communities, especially in north Queensland. Unfortunately, no accurate estimates of Indigenous take have yet been made.[5] The take of marine specimen shells by Indigenous people in accordance with their culture and tradition is not restricted by possession limits.

Spatial issues/trends

There were no spatial trends in catch and effort information to report in 2006. Commercial and recreational catch data suggest that there are no unacceptable local concentrations of effort occurring.

Socio-economic characteristics and trends

There are currently three commercial marine specimen shell fishery authority holders in Queensland.

There are no Gross Value of Production (GVP) estimates for the fishery. The small size of the fishery and variations in market prices make it impossible to accurately estimate GVP.

5 National Oceans Office 2004, *Description of key species groups in the Northern Planning Area*, National Oceans Office, Hobart, Australia.

Fishery performance

Appraisal of fishery in regard to sustainability

Catch and fishing effort data from commercial fisher logbooks suggest that the MSSCF continues to be managed by DPI&F in a sustainable manner. There was no commercial harvest of live shells in 2006 and recorded recreational harvest was also low. Commercial collecting effort in 2002 and 2003 appeared to focus on the collection of dead shells (evident in the large increase in catch) (Figure 2). This activity is likely to have less ecological impact than the removal of live animals.

Progress in implementing Department of Environment and Water Resources (DEW) recommendations

Recommendation	Progress	Improvements to management regime
DPI&F to inform DEH of any intended amendments to the management arrangements that may affect sustainability of the target species or negatively impact on protected species or the ecosystem.	*Ongoing* There have been no management changes during the reporting period.	N/A
By December 2005, DPI&F to develop fishery specific objectives linked to performance indicators and performance measures for species representative of those listed in Groups 1–3 (Table 2 of the report *Ecological assessment of Queensland's Marine Specimen Shell Collection Fishery*, July 2004) including, but not necessarily limited to, most commonly caught species in the fishery.	*In progress* Performance Measurement System (PMS) was developed following the outcomes of the ecological risk assessment conducted in 2005. The PMS is awaiting HarvestMAC endorsement and final DPI&F implementation.	N/A
DPI&F to monitor the status of the fishery in relation to the performance measures, once developed. Within three months of becoming aware of a performance measure not being met, DPI&F to finalise a clear timetable for the implementation of appropriate management responses.	*In progress* Performance measures developed—MSSCF fishery performance for 2007 collecting year will be measured against PMS.	N/A
DPI&F to conduct, within 12 months, a compliance risk assessment to determine the most effective use of resources and to specify the measures needed to ensure adequate compliance with the management regime. Within two years, DPI&F to develop and implement a compliance strategy for the fishery that includes clear management actions to address compliance risks.	*Completed* A compliance risk assessment (CRA) was completed in June 2005. Detailed strategies addressing the identified risks have been developed and are being implemented through the Queensland Boating and Fisheries Patrol (QBFP) operational plans.	A CRA is used by the QBFP in undertaking operational planning activities associated with management the fishery. Through identification and prioritisation of compliance risks associated with the fishery, planning and operational processes at the district level may be improved and risks mitigated.

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Recommendation	Progress	Improvements to management regime
From 2005, DPI&F to report publicly on the status of the fishery on an annual basis, including explicit reporting against each performance measure, once developed. Research strategy to address identified priority areas and explore ways to cooperatively share in or take advantage of research done in other specimen shell fisheries.	*Ongoing* This annual status report is the second to be completed.	Public reporting on the status of Queensland's fisheries is an important aspect of managing fisheries on behalf of the Queensland community. These reports provide an important catalogue of historical information on the status of Queensland fisheries, links to ecological assessments demonstrating to the Australian Government that fisheries meet sustainability guidelines, and the most up-to-date information on Queensland's fisheries.
DPI&F to review the research information needs and priorities to meet the management information and performance measurement needs of the fishery. Analysis of research needs should take into account any gaps in the basic biological parameters required for the ecologically sustainable management of specimen shell species. DPI&F to develop a research strategy to address identified priority areas and explore ways to cooperatively share in or take advantage of research done in other specimen shell fisheries.	*Not started* DPI&F plans to complete this task by the due date (end of 2009), taking into account any research activities undertaken in other jurisdictions (especially in the Northern Territory and Western Australia).	N/A
DPI&F to ensure that reliable estimates of recreational harvest of specimen shells are obtained and factored into the assessment and management of the MSSCF.	*In progress* DPI&F surveyed Queensland's malacological societies for harvest estimates of specimen shells in 2005 and 2006. Results have been provided in the annual status reports for the fishery.	Conducting these recent surveys has provided DPI&F with a more complete picture of the total number of removals by this fishery. The survey results confirm that only small numbers of specimen shells are being collected by enthusiasts which helps provide greater public confidence that the MSSCF is being managed for sustainability.

Management performance

A Performance Measurement System (PMS) has been developed for the MSSCF. DPI&F is waiting for the Harvest Fishery Management Advisory Committee (HarvestMAC) to endorse the PMS before implementing it. Fishery performance against the indicators will be reported in the annual status report for the 2007 collection year.

Resource concerns

There are no resource concerns in this fishery at the current participation levels and with the management controls that are in place.

Ecosystem

Non-retained species/bycatch

There is no bycatch or by-product from this fishery due to the highly selective harvesting methods used.

Interactions with protected species

The operations of the very small numbers of commercial operators are considered to pose a negligible risk to protected species and they are not required to fill in a Species of Conservation Interest logbook.

Fishery impacts on the ecosystem

The physical impact on the broader ecosystem is considered to be negligible because of the selective harvesting methods and the small number of specimen shells collected relative to the available resource.

The MSSCF is primarily based on the collection of dead shells through hand harvesting, with some collection of live shells. The fishery is likely to have minimal effect on mollusc populations and general ecosystem health.

Research and monitoring

Recent research and implications

Little research effort has been focused on the MSSCF due to the very small size of the commercial fishery and the strict limits on both commercial and recreational take of individual shells. A summary of recent research is contained in the ecological assessment of the MSSCF prepared by DPI&F and submitted to the Australian Government Department of the Environment and Heritage in 2004.[6]

The FRDC CRC Reef Great Barrier Reef Seabed Biodiversity Mapping project, which comprehensively sampled inter-reefal habitats using sleds at about 1200 sites between 2003 and 2005, provides some information on the distribution and relative abundance of specimen shells. A final report on this project was completed in late 2007.

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6 A Weis, P Gaffney, & M Dunning, *Ecological assessment of the Queensland Specimen Shell Collection Fishery: a report to AGDEH on the ecologically sustainable management of a highly selective hand and shell dredge collection fishery*, Department of Primary Industries and Fisheries, Brisbane, 2004.

Monitoring programs and results

Compulsory logbook program

Logbook data provide DPI&F with detailed information on catch trends in the commercial fishery. The most recent catch data are presented in Figure 2 and Tables 1 and 2. DPI&F undertakes no independent monitoring for the fishery.

Commercial catches of groups of specimen shells with similar conservation and management needs are monitored each year for changes in catch and trade trends that could harm their sustainability (Tables 1 and 2). Only very low numbers of shells from Groups 2 and 3 were collected in 2005 and none in 2006.

Summaries of logbook data are provided to HarvestMAC for consideration by representatives from industry, science and government. Data will be assessed further, if required, by the DPI&F Harvest Fishery Scientific Advisory Group (Harvest SAG).

Table 1: Numbers and species of Group 2 marine shells collected by commercial operators between 1997 and 2005 (Source: DPI&F CFISH database. 1/11/2007).

Year	Group 2 species	
	Live	Dead
1997	29	36
1998	17	41
1999	40	14
2000	45	102
2001	4	357
2002	33	494
2003	26	31
2004	4	29
2005	1	4
2006	0	0

Table 2: Numbers and species of Group 3 marine shells collected by commercial operators between 1997 and 2006 (Source: DPI&F CFISH database. 1/11/2007).

Year	Group 3 species	Live	Dead
1997	*Cypraea cribraria*	6	-
	Melo umbilicatus	1	-
	Syrinx aruanus	2	4
	Total	**9**	**4**
1998	*Cypraea cribraria*	2	8
	Melo umbilicatus	2	1
	Syrinx aruanus	1	1
	Total	5	10
1999	*Melo amphora*	2	4
	Total	**2**	**4**
2000	*Melo amphora*	1	14
	Melo umbilicatus	2	8
	Syrinx aruanus	2	3
	Total	**5**	**25**
2001	*Melo amphora*	-	51
	Melo umbilicatus	1	3
	Syrinx aruanus	1	31
	Total	**2**	**85**
2002	*Cypraea cribraria*	1	1
	Melo amphora	-	28
	Syrinx aruanus	-	25
	Total	**1**	**54**
2003	Baler shell	244	171
	Melo amphora	-	15
	Syrinx aruanus	2	21
	Total	**246**	**207**
2004	Baler shell	24	-
	Melo amphora	-	23
	Syrinx aruanus	-	17
	Total	**24**	**40**
2005	*Melo umbilicatus*	-	1
	Total	-	**1**
2006	***No collection***	-	**0**

Fishery management

Compliance report

Compliance and enforcement in the MSSCF are the responsibility of the DPI&F Queensland Boating and Fisheries Patrol (QBFP).

During 2006, one recreational fishing vessel was inspected in the fishery, with no offences detected. This is a very minor and low impact fishery with minimal organised participation and few issues.

A compliance risk assessment was conducted for the MSSCF in June 2005 in order to determine compliance priorities and allow the most effective use of QBFP resources. The risk assessment identified taking protected species of shells; exceeding the catch limit; use of unauthorised gear; retaining molluscs taken by other fishing methods; and taking molluscs from within an egg mass or those depositing an egg mass, as the highest priorities for enforcement and compliance in the fishery. There were also a number of activities rated as having a moderate risk, which are also being addressed.

Changes to management arrangements in the reporting year

No changes were made to management arrangements in the reporting year.

Consultation, communication and education

Consultation with stakeholders in the MSSCF mainly occurs through Harvest MAC. Two meetings were held in 2006. Harvest MAC provides advice to DPI&F on management measures for the MSSCF.

Complementary management

There were no complementary management issues in the reporting period.

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Acknowledgements

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Front cover image

Spider shell (*Lambis* sp.*)*