

Annual Status Report

Moreton Bay Bêche-de-mer Fishery

2007



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Introduction

The Moreton Bay Bêche-de-mer¹ (BDM) Fishery has been a single-operator, developmental fishery since 2003. It operates within a Queensland Marine Park (Moreton Bay) and stringent harvest controls have been applied to the operator permit to maintain access to the area. The conservative and precautionary harvest controls are based on regular and thorough sea cucumber resource assessments. Two species of sea cucumber are permitted for harvest, *Holothuria scabra* (sandfish) and *Stichopus horrens* (peanutfish). Peanutfish are not currently harvested in this fishery. The majority of product is exported to China and other Asian nations for consumption and for use in traditional Chinese medicines.

This report covers the 2006 calendar year.

Fishery profile 2006

Commercial harvest of sandfish: 19.83 t

Recreational harvest: nil

Indigenous harvest: considered negligible

Charter harvest: nil

Commercial Gross Value of Production (GVP): Approximately \$200 000

Number of permits: one

Commercial fishing boats accessing the fishery: three (two on a full-time basis and one used occasionally for transporting sea cucumbers)

Fishery season: 1 January–31 September; 1 December–31 December

Description of the fishery

Fishing methods

Sandfish and peanutfish are permitted to be harvested by hand using only free-diving methods (usually wading or snorkelling), without the aid of hookah apparatus or SCUBA, within the three defined fishing zones of Moreton Bay (Figure 1). Fishing involves small (5 m) outboard-powered vessels (NN1 and NN2), with trip duration typically less than eight hours.²

Fishing area

Harvest of sea cucumber is confined to a limited area between Moreton Island and North Stradbroke Island (Figure 1).

The Moreton Bay BDM Fishery area is split into three zones within Moreton Bay (excluding any waters within a licensed Aquaculture Oyster Area):

- Moreton—Zone 1
- Amity—Zone 2, and
- North Stradbroke—Zone 3.

¹ Bêche-de-mer (or trepang) is the term referring to the commercial product produced by processing (gutting, boiling and drying) the body of sea cucumbers or holothurians.

² W Sumpton & M McLennan, *Moreton Bay Developmental Bêche-de-mer Fishery Observer Report 2004/05*, Department of Primary Industries and Fisheries, Brisbane, Australia, 2005.

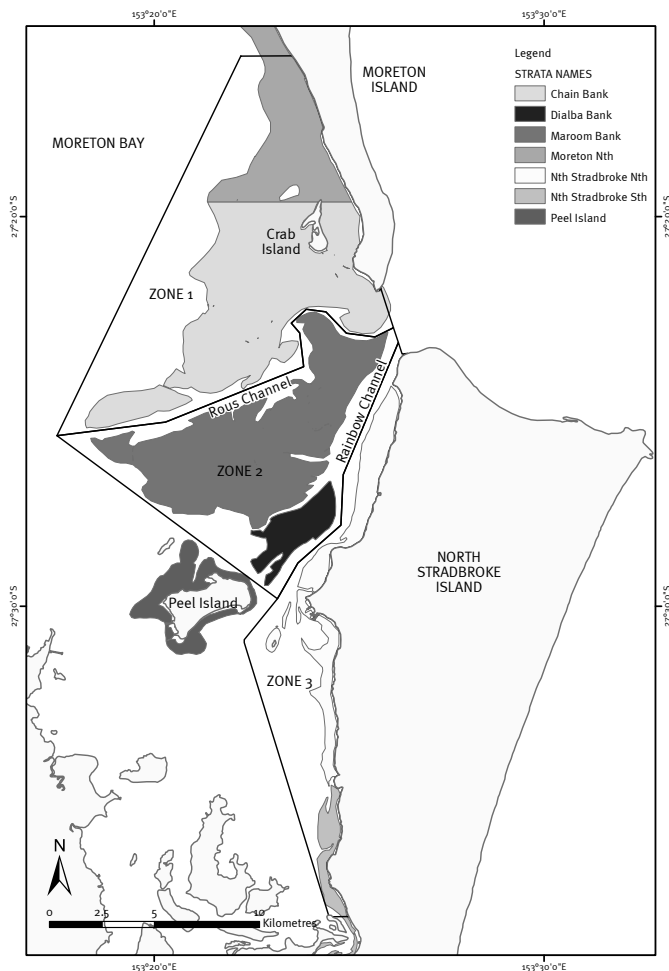


Figure 1: Developmental Moreton Bay Bêche-de-mer Fishery zone boundaries.

Main management methods used

A series of input and output controls are used to manage this fishery, including:

- commercial total annual catch (TAC)—a maximum of 45 t of gutted wet weight of sandfish and a maximum of 25 t of gutted wet weight of peanutfish in any calendar year
- zonal trigger limits—sandfish: a maximum of 25 t from Moreton (1), 16 t from Amity (2) and 14 t from North Stradbroke (3); peanutfish: total of 25 t from Moreton (1) only
- a seasonal closure—the fishery is closed between 1 October and 30 November (inclusive) each year
- limited entry—only one permit was issued to the Nunukul Ngugi Cultural Heritage Corporation (NNCHC)
- vessel restrictions—a maximum of three boats, less than 7 m in length³
- gear restrictions—harvesting by hand collection only without the use of hookah apparatus or SCUBA
- closed areas—within Moreton Bay all areas outside the three designated fishing zones (Figure 1) are closed to commercial harvest
- number of operators—no more than three persons acting under the permit holder may collect sea cucumber at any one time from the one boat; one person must remain in each boat; and
- rotational harvesting—harvesting only occurs in one zone on any given day and no zone is fished for more than six consecutive weeks in a 12-week period.

³ Currently only two boats are being used on a full-time basis, with a third boat occasionally used for transporting sea cucumber.

Approximate allocation between sectors

The Moreton Bay BDM Fishery is solely a commercial fishery. The Indigenous harvest of sea cucumber within the region is unknown but is considered to be negligible. The recreational take of sea cucumber in Queensland is limited to waters north of 20° south and east of 143° east, which excludes Moreton Bay. There is no evidence to suggest that sea cucumber have been illegally harvested within Moreton Bay by the recreational sector.

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

The developmental Moreton Bay BDM Fishery was granted a Wildlife Trade Operation (WTO) approval under Part 13A of the Australian Government EPBC Act on 24 November 2004. The WTO approval acknowledges that the fishery is being managed in an ecologically sustainable manner and allows the continued export of sea cucumber caught in Moreton Bay. The approval expires on 16 November 2007.

Representatives of the Department of Primary Industries and Fisheries (DPI&F), the Queensland Parks and Wildlife Service (QPWS) and the Commonwealth Scientific and Industrial Research Organisation (CSIRO) recommended, at the meeting of the Management and Scientific Advisory Committee (MSAC) held on 15 December 2005, that the 'developmental' status of the fishery should be extended for at least one year to ensure that sufficient data have been collected to make a proper assessment of the fishery. This permit also expires on 16 November 2007.

Catch statistics

Commercial

The total harvest of sandfish from Moreton Bay in 2006 was approximately 20 t (wet gutted weight) of an allowable 45 t (Table 1). The total catch per zone in 2006 has decreased in all three zones, although the majority of the catch continued to be harvested from the Amity (2) and North Stradbroke (3) zones (Table 1).

Table 1: Total catch and (quota) of sandfish in kilograms for each zone of the fishery, 2003–06 (Source: DPI&F CFISH database, 19 June 2007).

Year	Zone 1 Moreton	Zone 2 Amity	Zone 3 North Stradbroke	Total
2003	2693 (21 000)	13 330 (13 000)	8721 (11 000)	24 745 (45 000)
2004	3840 (25 000)	13 530 (16 000)	9370 (14 000)	26 740 (45 000)
2005	4471 (25 000)	17 220 (16 000)	14 583 (14 000)	36 274 (45 000)
2006	1547 (25 000)	9353 (16 000)	8926 (14 000)	19 827 (45 000)

Monthly catches and, in some cases, catch rates were generally lower in 2006 than those observed for the 2005 season (Figure 2). The catch rates (wet weight (kg)/hour fished) in 2004–06 were generally lower in winter months. Scientific observations and anecdotal evidence from fishers and processors have shown that the relative body wall weight of sandfish reduces during winter⁴ and an equal number of specimens may weigh less in winter than in summer months. Also, sandfish tend to bury in the sediment more often and for longer periods during the winter months,⁵ which has been found to reduce catch rates.

⁴ T Skewes, D Dennis & A Donovan (unpublished report), 'Research for the sustainable use of *Holothuria scabra* (sandfish) in Moreton Bay: 2004 relative abundance survey', CSIRO Division of Marine Research Final Report, Queensland, Australia, 2004.

⁵ T Skewes (Commonwealth Scientific and Industrial Research Organisation), email, June 2006.

Data variability is to be expected, given the developmental status and relatively short history of the fishery and the variability in winter temperatures. For this reason, a longer time series of data would be required to detect general trends in catch rates for the fishery.

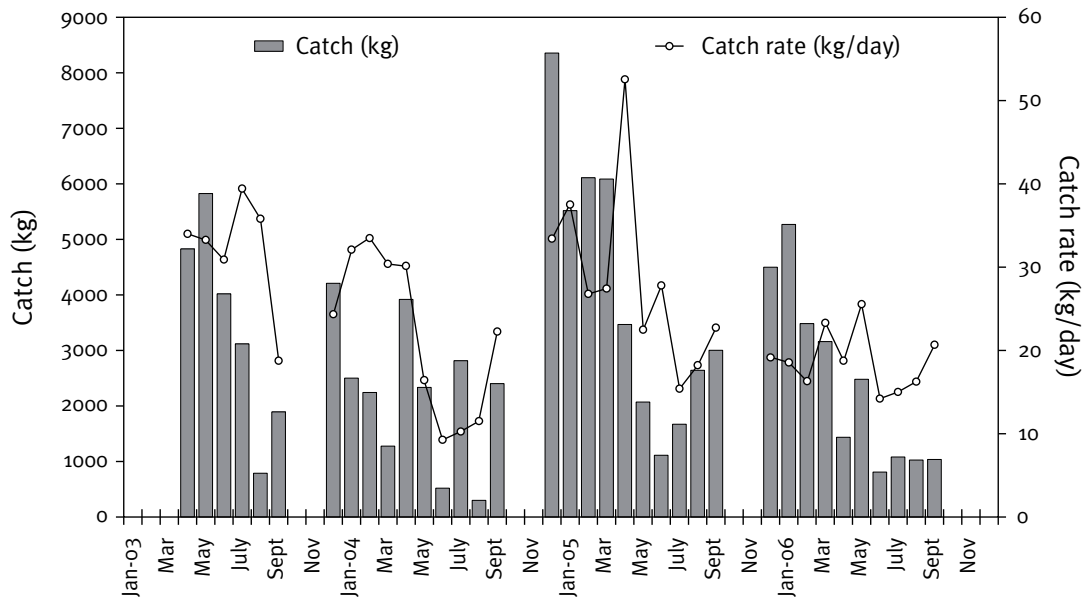


Figure 2: Monthly catch weights (kg) and catch rates (kg/hour fished) of sandfish, 2003–06 (Source: DPI&F CFISH database, 19 June 2007).

Spatial issues/trends

The Amity Zone (2) has consistently been the most heavily fished (Figure 3) over the four-year history of the Moreton Bay BDM Fishery. In 2005 and 2006, high levels of effort were also expended in the North Stradbroke Zone (3). The Moreton Zone (1), which has the highest zonal trigger weight, has had low total catch and low fishing effort since 2003. The North Stradbroke (3) and Amity (2) zones are the easiest to fish and the most accessible during poor weather conditions, being somewhat protected from SE winds, whereas the Moreton Zone (1) is more remote from the fishing base and is often influenced by prevailing winds.⁶ Low water visibility at certain times throughout the year also limits effort in the North Stradbroke Zone (3).⁷

⁶ T Skewes, 'Research for the sustainable use of *Holothuria scabra* (sandfish) in Moreton Bay: 2006 relative abundance survey' (draft), 2006.

⁷ *ibid.*

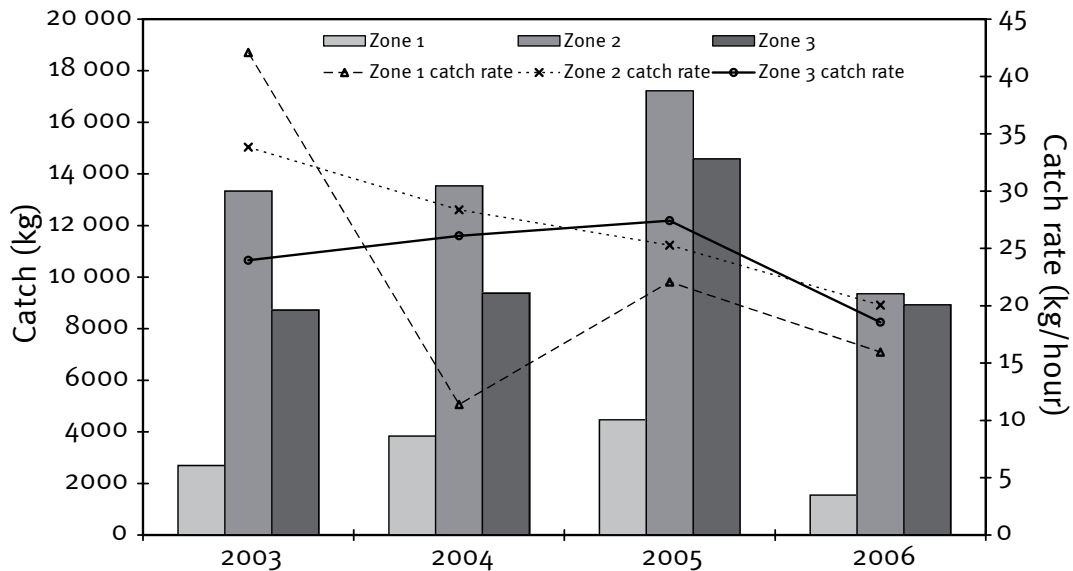


Figure 3: Catch (kg) and catch rates (kg/hour) of sandfish for each zone, 2003–06 (Source: DPI&F CFISH database 19 June 2007).

Socio-economic characteristics and trends

Sea cucumbers were sold in two product forms in 2006: wet gutted and dried. Wet gutted product earned approximately \$10/kg, while further processing to a dried product realised between \$115/kg and \$120/kg. On average, 10 kg of wet gutted product equates to 1 kg of dried product, depending on grading.

Based on unprocessed product harvested in 2006, the annual GVP was estimated at approximately \$200 000. The observed decrease in GVP from \$300 000 in 2005 is mirrored by the decrease in total annual harvest of sea cucumber, from 36 t in 2005 to 20 t in 2006.

Fishery performance

Appraisal of fishery in regard to sustainability

The Moreton Bay BDM Fishery is monitored closely through annual biomass assessments undertaken for the permit holders by CSIRO, the Fisheries Observer Program and commercial logbook data. Regular evaluation of these data will ensure that management actions are taken to maintain stocks at sustainable levels.

Declines in sandfish density have been observed in the CSIRO annual monitoring surveys—sandfish were observed at fewer sites in 2006 than in previous years and the estimated sandfish density has declined, with the most recent survey in 2006 finding an average density less than half the pre-fishery estimate (see Monitoring programs and results).⁸

⁸ *ibid.*

The reasons for these declines have not yet been confirmed. Skewes (2006) indicated that the most extreme estimates of fishery impact would not account for the decline in density observed during the annual surveys. There is evidence to suggest that the decline is not primarily a fishery effect and may be a sampling artefact or a result of other non-fishery influences. Further data are required before the causes of the decline can be ascertained. A full-scale resurvey of the population is being planned to commence after the permit expires in 2007. The results of this survey, together with the initial full-scale survey, the annual monitoring surveys and the fishery logbook data, should provide adequate information on which to base a reliable assessment of the sustainability of the fishery, and for formulating future management arrangements. Investigations into external influences on bêche-de-mer abundance are being assessed through ongoing research by the CSIRO.

A seasonal closure is enforced in the fishery between 1 October and 30 November. The closure, along with zonal restrictions, is designed to protect the breeding populations of sandfish during spawning periods and provide refuge areas for sandfish populations that are closed to fishing. A significant proportion of the sandfish population in Moreton Bay (approximately 40%) occurs in these areas.⁹ Input and output controls in the Moreton Bay BDM Fishery assist in protecting the fishery resources from increases in effort.

The virgin biomass of sandfish was initially estimated at 951 t \pm 414 t (90% Confidence Interval (CI)).¹⁰ The 2006 total harvested weight of sandfish therefore represents between 1.5% and 3.7% (90% CI) of the total estimated virgin biomass of sandfish. The fishery is regarded as being managed in a precautionary manner, and with further research into the status of the stock, it is unlikely to become unsustainable.

⁹ TD Skewes, DM Dennis, T Wassenberg, M Austin, C Moseneder & A Koutsoukis, *Surveying the distribution and abundance of Holothuria scabra (sandfish) in Moreton Bay*, CSIRO Division of Marine Research Final Report, Queensland, Australia, 2002.

¹⁰ *ibid.*

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

Recommendation	Progress	Improvements to management regime
<p>DPI&F to inform DEW of any intended amendments to the management arrangements that may affect sustainability of the target species or negatively impact on bycatch, protected species or the ecosystem.</p>	<p><i>Ongoing</i></p> <p>DPI&F advised DEW of the resolution to re-issue the permit following its initial expiry on 31 March 2006. DEW supported the re-issue of the permit until 16 November 2006.</p> <p>DPI&F sought comments from DEW on a proposal to transfer the seasonal closure from October–November to July–August. DEW advised that such a change might affect the WTO declaration for the fishery unless it was supported by scientific studies on spawning periods of sea cucumber in Moreton Bay. As such studies were not available and not readily achievable, therefore DPI&F did not progress the proposed change.</p>	<p>N/A</p>
<p>DPI&F to develop fishery-specific objectives for each of the target species and for fishery impacts on the ecosystem. DPI&F to ensure that the target species objectives are linked to performance indicators and performance measures.</p>	<p><i>In progress</i></p> <p>A workshop to develop a Performance Measurement System (PMS) was held in July 2007. DPI&F plans to finalise and implement the PMS in late 2007/early 2008.</p>	<p>A PMS is developed to measure the effectiveness of fisheries management in ensuring the sustainable use of sea cucumber stocks and minimising any impacts on the broader ecosystem.</p>
<p>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).</p>	<p><i>Ongoing</i></p> <p>The 2007 Annual Status Report will be the third to be completed for the Moreton Bay Bêche-de-mer Fishery.</p>	<p>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.</p>
<p>DPI&F to cooperate with other jurisdictions in efforts to undertake research on key gaps in bêche-de-mer biology and ecology.</p>	<p><i>Ongoing</i></p> <p>DPI&F has highlighted interest in collaborative sea cucumber research at the Australian Fisheries Management Forum and continues to identify it as a priority for research procedures through the Queensland Fishing Industry Research Advisory Committee (QFIRAC).</p>	<p>A greater understanding of sea cucumber biology and ecology will assist DPI&F in determining future management strategies for the fishery.</p>

Recommendation	Progress	Improvements to management regime
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.	<i>Not started</i> Performance measures will be regularly assessed and reported against in the time frames specified with the PMS itself.	N/A
DPI&F to ensure that zonal TACs take into account the stock status of sandfish in each zone and potential vulnerability to localised depletion of sandfish to ensure that TACs provide for individual species to be harvested within ecologically sustainable limits.	<i>In progress</i> Existing zonal trigger limits take stock status and the different observed densities of sandfish in the zones into account. Logbook catch and effort records and results of annual abundance surveys are reviewed regularly by the MSAC.	Spatial effort controls such as zonal TACs provide insurance against localised depletion, which is particularly important because of the density-dependent reproductive characteristics of sea cucumber.

Management performance

To date, performance measures have not been developed for the Moreton Bay BDM Fishery. DPI&F conducted a workshop to develop draft performance measures in July 2007 and will seek endorsement from the Harvest Management Advisory Committee (Harvest MAC) by November 2007. During the workshop, performance measures for target species and the impacts on the ecosystem were developed. Industry consultation will be important to the outcomes of this process.

Resource concerns

Resource concerns relevant to the Moreton Bay BDM Fishery were noted in the annual abundance surveys, in the Fisheries Observer Program and through the analysis of logbook data. Concerns raised through these processes were brought to MSAC meetings, which include the permit holder, and to the HarvestMAC. Sea cucumber stocks are susceptible to overexploitation due to their reliance on maintaining population densities at a sufficient level to ensure reproductive success and because they are relatively easy to collect. As a result, some species of sea cucumber have displayed slow recovery from overfishing in the past.

Concerns noted in the MSAC (17 January 2006):

- The permit holder did not organise a survey for the 2006 season. The permit holder is actively seeking funding to assist with conducting a full-scale abundance survey in time for the 2007 survey.
- Concerns were raised that trawlers may be removing sea cucumber from the deeper waters that may provide recruits to the fishery; DPI&F continues to monitor bycatch in the trawl fishery.

Ecosystem

Non-retained species / bycatch

Sea cucumber can only be harvested by hand in the Moreton Bay BDM Fishery. This highly selective fishing method produces no bycatch or by-product from the fishery.

Interactions with protected species

Highly selective fishing methods limit the potential for the interaction of operators in the Moreton Bay BDM Fishery with endangered, threatened or protected species. The only potential for negative interaction is damage caused to seagrass beds and the sea floor as a result of anchoring the small vessels from which divers operate.¹¹

The Moreton Bay BDM Fishery operates in a turtle protection zone where measures such as speed limits have been put in place to reduce the interaction between turtles and vessels operating in the region. Vessel operators in the Moreton Bay BDM Fishery are required to comply with these regulations. Observer reports indicate that compliance with these regulations is very high within the fishery.¹² Anecdotal evidence from fishers and reports from observers indicate that there are no fishery interactions with dugongs.

Fishery impacts on the ecosystem

Hand collection methods employed in the Moreton Bay BDM Fishery have virtually no detrimental effect on the environment, apart from minor damage caused to seagrass beds and the sea floor resulting from anchoring the two to three small vessels from which divers operate.¹³

Limited available research suggests that sea cucumbers are an important component in the natural nutrient recycling pathways of benthic environments.¹⁴ Preliminary findings of a joint CSIRO/Institute for Biodiversity Research (Germany) research project (see Recent research and implications) have found that removal of *H. scabra* may have a significant role in the ecology of seagrass bed ecosystems; these results require ongoing repeated experiments before any conclusions can be drawn regarding the ecological impact of harvesting sandfish in Moreton Bay.¹⁵

Research and monitoring

Recent research and implications

A joint research project between CSIRO Marine and Atmospheric Research (CMAR) and the German Institute for Biodiversity Research is currently being undertaken by Svea Mara Wolkenhauer as part of a PhD thesis titled 'Impacts of Removal—A Case Study on the Ecological Role of the Commercially Important Sea Cucumber *Holothuria scabra* in Moreton Bay'. Preliminary results indicate that sandfish have a distinct diurnal burying and feeding cycle, with periods of burying increased with decreasing temperature. Knowing when and how long sandfish bury and are not visible is crucial for population surveys conducted for conservation and fishery research on this species.¹⁶ Sandfish were also shown to play a role in recycling inorganic nutrients within subtropical seagrass beds.¹⁷

¹¹ W Sumpton & M McLennan, *Moreton Bay Developmental Bêche-de-mer Fishery Observer Report 2003*, Department of Primary Industries and Fisheries, Brisbane, Australia, 2005.

¹² *ibid.*

¹³ C McCormack, *2004 Annual Status Report: Moreton Bay Bêche-de-mer Developmental Fishery*, Department of Primary Industries and Fisheries, Brisbane, Australia, 2005.

¹⁴ B Young & S Ryan, *Ecological assessment of the Developmental Moreton Bay bêche-de-mer fishery: a report to the Australian Government Department of the Environment and Heritage on the ecologically sustainable management of a highly selective dive fishery*, Department of Primary Industries and Fisheries, Brisbane, Australia, 2004.

¹⁵ S-M Wolkenhauer, S Uthicke, T Skewes & R Pitcher, 'Sea cucumber removal and its consequences for seagrass growth: a case study on commercially important sandfish *Holothuria scabra* in shallow seagrass beds of Moreton Bay, Queensland', *Australian Marine Science Bulletin*, 169: 36, 2005.

¹⁶ S-M Wolkenhauer & T Skewes, *Burying and feeding activity of adult *Holothuria scabra* (Echinodermata: Holothuroidea) in a controlled environment*, *Memoirs of the Queensland Museum*, accepted May 2007.

¹⁷ S-M Wolkenhauer, S Uthicke, C Burridge, T Skewes & R Pitcher, 'Does the removal of sea cucumbers *Holothuria scabra* (Echinodermata: Holothuroidea) alter seagrass and benthic microalgae communities?', draft, submitted to *Marine Ecology Progress Series*, July 2007.

This research will provide useful information on the biology and ecosystem functions of holothurians, as well as an increased knowledge of the environmental impacts associated with the removal of holothurians from associated food webs. Results from this research, combined with previous CSIRO relative abundance studies, will better inform managers of the potential ecosystem impacts of this developmental fishery.

Monitoring programs and results

There are several monitoring programs for the Moreton Bay BDM Fishery, including:

- collection of daily catch and effort data through the DPI&F compulsory logbook program
- monitoring of the fishery and resource through the DPI&F Fishery Observer Program
- annual surveying of the stocks of sea cucumber and associated ecological values in Moreton Bay by a scientific organisation engaged by NNCHC.

Fisheries Observer Program

The Fisheries Observer Program (FOP) was introduced into the developmental Moreton Bay BDM Fishery in 2003 as part of the permit conditions for the permit holder. During 2006 a DPI&F observer accompanied NNCHC fishers on four separate occasions, which is considered appropriate for a single-licence fishery.

The aims of the FOP within the developmental Moreton Bay BDM Fishery are to independently observe the fishing operations and report to management on the sites visited, techniques and equipment used and observed catch (total weight and individual lengths), as well as any interaction with species of conservation interest (SOCI).

During these trips, the only retained species was sandfish (*H. scabra*). Average recorded length was 179.8 mm, with a maximum length of 260 mm and a minimum of 131 mm. While the minimum size documented on the permit is 170 mm, there have been misunderstandings as to how the standard length is to be measured. This has been amended in the current permit, with clear direction provided to the holder.

There have been no recorded interactions with any SOCI to date. Fishing operations were observed in Zones 2 and 3 (see Figure 1), and involved harvesting by collectors using mask and snorkel, generally in a maximum depth of 2 m of water.

Annual assessment of stocks

As a subsection of the permit conditions, NNCHC is required to engage a scientific organisation to conduct an annual survey of the stocks of sea cucumber and associated ecological values in the area of the developmental fishery. CSIRO undertook a large-scale survey of the geographical extent and the relative abundance of the resource in 2001, before fishing in the Moreton Bay BDM Fishery commenced. Subsequent smaller-scale surveys were conducted in 2004, 2005 and 2006.

Fieldwork was carried out over two days in early February 2006. Outcomes from the Skewes (2006) annual monitoring survey include:

- spatial distribution of sandfish at the 44 repeated sites during the 2006 survey was similar to that recorded in previous surveys
- sandfish were observed at fewer sites in 2006 than in previous years

- sandfish density has declined, with the most recent survey in 2006 having an average density less than half the pre-fishery estimate
- the average size of individuals observed during the 2006 survey was relatively small compared with previous surveys; and
- the Amity (2) and North Stradbroke (3) zones have experienced the greatest decline in average density.

Given the initial estimates of the population in the survey area, even the most extreme estimates of fishery impact would not account for the decline in density observed during the annual surveys.¹⁸ The observed declines could be the result of fishing and natural mortality combined with very low recruitment, or other factors yet to be determined, such as the visibility of sea cucumbers—the estimated average density of peanutfish was low, and this species has not been fished.¹⁹

This uncertainty will be addressed by a full-scale survey which is planned to be undertaken at the conclusion of the developmental fishery permit. The results of this survey, along with the initial pre-fishery survey, the annual monitoring surveys and the fishery data, should provide adequate information on which to base a reliable assessment of the status of the population and the overall sustainability of the fishery.

Collaborative research

No collaborative research is currently being undertaken for the Moreton Bay BDM Fishery.

Fishery management

Compliance report

The Queensland Boating and Fisheries Patrol reported that there were no breaches detected during 2006.

In general, compliance with permit requirements relating to prior reporting and other matters has been good. No complaints have been received regarding the activities of collectors, and overall compliance in the fishery remains high.

Inaccurate reporting of catch, effort and protected species interactions, non-compliance with minimum size limits, violation of closures and non-compliance with gear, vessel and operator restrictions have been identified as the highest priorities for enforcement and compliance in this fishery.

Changes to management arrangements in the reporting year

The Moreton Bay BDM Fishery is closely monitored and management measures can be adjusted to maintain sustainability and performance in accordance with developmental fishery guidelines. There were no changes to management arrangements in the reporting year.

¹⁸ T Skewes, 'Research for the sustainable use of *Holothuria scabra* (sandfish) in Moreton Bay: 2006 relative abundance survey' (draft), 2006.

¹⁹ *ibid.*

Outcomes of review processes

There is no specific management plan for the Moreton Bay BDM Fishery. Should the results of future abundance surveys support the continuation of the fishery after the expiry of the permit, DPI&F will undertake a review of the current management arrangements in light of all the available information. Once the DPI&F has a high level of confidence that the fishery is sustainable and viable, a process will be initiated to promote the fishery to developed status and legislation will need to be amended accordingly.

Consultation/communication/education

Promotion of regulations applying to both commercial and recreational fishers, including those relating to sea cucumbers, is an ongoing role for DPI&F.

Consultation with stakeholders in the fishery mainly occurs through the MSAC, with meetings generally held twice a year. The MSAC provides advice to DPI&F on management measures for the fishery.

Complementary management

The Moreton Bay BDM Fishery is managed by DPI&F in consultation with QPWS Moreton Bay Marine Park managers (complementary permits are issued by QPWS for this fishery).

Information compiled by

Fiona Hill

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Image

Sandfish (*Holothuria scabra*)

