Queensland Spanner Crab Fishery
2011
Progress against SEWPaC recommendations
Progress in implementing Department of Sustainability, Environment, Water, Population and Communities (SEWPaC) recommendations for the Queensland Spanner Crab Fishery.

SEWPaC made a range of recommendations to Fisheries Queensland, part of the Department of Employment, Economic Development and Innovation during its second assessment of the Queensland Spanner Crab Fishery in 2007, in order to address perceived risks or uncertainties. Details of the progress Fisheries Queensland has made in relation to the current recommendations as of June 2011 are outlined in this document.

The fishery is due to be reassessed in February 2012.

Recommendation 1:
Fisheries Queensland to inform SEWPaC of any intended amendments to the management arrangements that may affect sustainability of the target species or negatively impact on by-product, bycatch, protected species or the ecosystem.

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<th>Progress: Ongoing</th>
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<td>There were no changes to management arrangements for the Spanner Crab Fishery during 2010.</td>
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Recommendation 2:
Fisheries Queensland to ensure that management arrangements for the shared spanner crab stock with NSW take account of the results of the collaborative monitoring project, once available.

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<td>Fisheries Queensland fishery independent monitoring continues to maintain collaborative monitoring of spanner crab stocks that have included a monitoring site in New South Wales waters. The combination of Queensland and New South Wales data provides an enhanced fishery independent reference for inclusion with the Queensland commercial logbook data in routine assessment of the Spanner Crab Fishery Total Allowable Catch (TAC) and status of the stock across both states, ensuring that spanner crabs continue to be harvested sustainably.</td>
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Recommendation 3:
By the end of 2007 Fisheries Queensland to develop a compliance strategy for the Spanner Crab Fishery addressing high risks identified in the compliance risk assessment, particularly those relating to data reliability.

Progress: Complete
A compliance risk assessment (CRA) was conducted for the Queensland Spanner Crab Fishery in March 2006. Detailed strategies to address the risks identified by this assessment were developed through the Queensland Boating and Fisheries Patrol (QFBP) strategic and operational planning processes and were first implemented in July 2006. Through identification and prioritisation of compliance risks associated with the fishery, planning and operational processes at the district level have been improved and risks mitigated.

The initial compliance risk assessment for the Spanner Crab Fishery has since been reviewed in February 2009 to re-determine compliance priorities and allow the most effective use of QFBP resources. The assessment identified the following activities in the Spanner Crab Fishery as having the highest level of risk. The QFBP will therefore direct their compliance resources to addressing:
- Continuing to fish once the ITQ has been used in Managed Area A
- Misreporting of catch amount for ITQ deduction
- Interference with fishing apparatus.

During the CRA workshops data reliability issues for the Spanner Crab Fishery were deemed negligible. Fisheries Queensland will continue to monitor data related issues in future assessments. The CRA will be reviewed every three to five years or earlier if there are major changes to the management arrangements for the fishery.

Recommendation 4:
By the end of 2008, Fisheries Queensland to develop an improved method of estimating abundance of the spanner crab stock that takes into account relevant information on the biological characteristics of spanner crabs, changing fisher behaviour and increased effort in the fishery.

Progress: Complete
The FRDC project 'Reducing uncertainty in the assessment of the Australian Spanner Crab Fishery' (FRDC Project 2003/046) has been completed and finalised by Agri-Science Queensland’s Dr Ian Brown. It resulted in the adoption of a unified set of monitoring protocols across the New South Wales and Queensland spanner crab stock, and led to the development of a new system of spanner crab stock assessment and TAC setting. For the first time there is a formal use of fishery independent data from Fisheries Queensland annual spanner crab surveys, in addition to the conventional fishery dependent logbook catch and effort statistics, in the decision rule-based procedure for setting the total allowable catch. The work also contributed to initiating a major project (FRDC 2007/033) evaluating a new approach to age-determination in a range of invertebrates species including spanner crabs, being run by Fisheries Queensland’s geneticist Dr Jennifer Ovenden.

Further to this, quantitative analyses have recently been completed by Fisheries Resource Assessment staff to revise the TAC rules and to develop improved abundance measures for the Spanner Crab Fishery. A number of Scientific Advisory Group (SAG) documents have been produced and two papers (O’Neill et al. 2010 and Dichmont and Brown 2010) have been published on the revised rules.

O’Neill et al. (2010) details the development of a new management procedure, which readily accounts for varying catch rates and strong trends in fisheries data. This method employs the use of fishery dependant and fishery independent standardised catch rates to identify precautionary levels of quota.
Dichmont and Brown (2010) attribute the success of the TAC to the use of simple decision rules, developed in accordance with the size of the fishery and knowledge of the resource. The management system has been designed to be adaptive over time as more is learnt about the biology of the spanner crab and how the harvest strategies affect the management of the fishery. Both papers note that the data-based procedures are simple to follow, flexible for change in fishery conditions and adaptable for use in many fisheries. Processes not only rely on scientific advances, but the knowledge of the experts (scientists, industry and management) in a cooperative environment.

**Recommendation 5:**
Fisheries Queensland to undertake an assessment of the impact of operations under General Fisheries Permits (GFPs) that takes into account the impact of the operations on the target species and broader ecosystem and cumulative impacts of the permits issued, and incorporate this as part of the next review of the Spanner Crab Management Plan.

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Progress: Complete

The Fisheries (Spanner Crab) Management Plan 1999 was repealed in March 2010. All relevant legislation from the Plan was moved into the Queensland Fisheries Regulation 2008. General Fisheries Permits (GFPs) issued for use in the Spanner Crab Fishery entitle the holder to use more than 45 dillies. Before granting the entitlement, GFP applications are rigorously assessed, taking into consideration the impact of excess gear use on the target species, bycatch and broader ecosystem as well as the cumulative pressures associated with the operation. The Spanner Crab Fishery is managed by an output controlled Total Allowable Catch (TAC) with inbuilt individual operator quotas. During any quota year operators are capped by the set fishery based TAC as well as the restrictions of their individual quotas. The GFP entitlement in the Spanner Crab Fishery does not increase the capacity of an operator to harvest more spanner crabs—as they are limited to an individual quota—rather it increases the efficiency of the activity.

An initial short study was conducted on the impact of GFPs on catch rates and investigating changes in fishing operations. No negative impacts were found to exist as a result of the issue of the GFPs. The results have been used in evaluating various management strategies for the Spanner Crab Fishery. Currently the impact on target species resulting from the use of the GFP entitlement is monitored through the TAC Review process. All commercial catch and effort data including the additional pressure resulting from the use of the GFPs is incorporated into the commercial component of the TAC setting process which involves the standardisation and calculation of indexes using commercial logbook data. This process accounts for varying catch rates, strong trends in fisheries data and allows flexibility when fishery conditions change. The spanner crab TAC is precautionary in nature and has not been reached at any time during the past decade.

The impact of the fishery (including the issue of any GFPs) on the ecosystem is considered to be very low. The fishing apparatus used (dillies) has little impact on the physical environment as they are lightweight and stable and generally deployed on open sandy substrates.

Fisheries Queensland is satisfied that the GFP application process and TAC setting process adequately takes into account any extra pressure exerted by the GFPs on the Spanner Crab Fishery. Future review of management arrangements for the Spanner Crab Fishery will continue to take into consideration the impact of GFPs.
**Recommendation 6:**

By mid 2008, Fisheries Queensland to implement management responses for risks ranked as ‘moderate’ or above in the Spanner Crab Ecological Risk Assessment.

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| The Ecological Risk Assessment (ERA) for the Spanner Crab Fishery applied the Commonwealth Scientific and Industrial Research Organisation (CSIRO) Ecological Risk Assessment for the Effects of Fishing (ERAEF). A Level One Scale, Intensity and Consequence Analysis (SICA) was conducted for fishing activities associated with target and bycatch species and community categories in the Spanner Crab Fishery. The assessment assigned consequence scores to each activity. One activity was assigned a moderate consequence score, fishing on target species. Expert and stakeholder opinion determined that this fishing activity did not warrant progression of the assessment through to the Level Two Productivity and Susceptibility Analysis; this is a more detailed process used to determine the level of risk.

Fisheries Queensland remains committed to seeking solutions to reduce the consequences of fishing on target species. The current management arrangements are precautionary in nature, ensuring sustainable use of spanner crab populations. At current fishing levels the resource is considered not to be fully exploited or to adversely affect the long term recruitment dynamics of spanner crabs and so no management response is currently required. The response time to any changes in fishing pressure is rapid due to the biennial review of the commercial TAC.

The Ecological Risk Assessment for the Spanner Crab Fishery is scheduled for review during 2011.

**References**

