

TORRES STRAIT PRAWN MANAGEMENT ADVISORY COMMITTEE	Meeting No. 16 23-24 June 2015
MANAGEMENT ABARES comments on options for improving the economic performance of the TSPF	Agenda Item No. 4.1.1 FOR DISCUSSION

RECOMMENDATION

4.1.1.1 That the Torres Strait Prawn Management Advisory Committee note ABARES comments on the options for improving the economic performance of the TSPF (TSPMAC).

BACKGROUND

The Torres Strait Prawn Fishery (TSPF) is managed through a set of input controls that restrict effort in the fishery to meet the objectives of the *Torres Strait Fisheries Act 1984* and *TSPF Management Plan 2009*. Managing the TSPF is a complex balance between many differing objectives, ranging from ensuring optimum utilisation and economic efficiency in utilising fishery resources, to ensuring that the way of life and livelihood of traditional inhabitants are protected.

Each input control has a different (and compounding) effect on the economic viability of the fishery. As defined in the TSPF objectives, the management system is obliged to pursue maximum economic efficiency and utilisation of the fishery resource while upholding the other objectives.

DISCUSSION

Current Management Arrangements

The following management arrangements are currently in place for the TSPF.

Spatial management

Spatial closures in the TSPF are used to achieve different types of management objectives from protecting juvenile growth of a target species, to protecting important habitats for traditionally significant species.

West of warrior reef exclusion zone

This closure, as well as providing some protection for smaller prawns, was introduced taking into consideration that most of the inhabited islands are in this region and that a significant concentration of traditional fishing for tropical rock lobster occurs in this area.

Darnley Island Exclusion zone

The Darnley Island exclusion zone was introduced in response to traditional inhabitants concerns in relation to the potential for trawling to damage pearl shell beds in the area.

Deliverance, Kerr and Turu exclusion zones

In May 2008 the PZJA agreed to implement exclusion zones under the Plan around Deliverance Island, Kerr Islet, and Turu Cay. These areas have been excluded from the fishery in response to concern about the important nesting areas for Green and Flatback turtles.

East of Warrior Reef seasonal closure 1 December in any year and ends at 1700 hours local time on 31 July

This closure was introduced following a request from industry with the aim of improving the economic yield from the prawns harvested in this area by protecting juvenile prawns.

Temporal management

The TSPF has a seasonal closure from 1 December to 1 March each year. This closure was implemented for social reasons, as communities wanted a period of time absent of TSPF boats.

Limited entry policy

There is a limit of 61 licences and 9,200 units of fishing capacity (6,867 units for Australia and the remainder for PNG) in the TSPF.

Harvest Strategy

The 9,200 units are converted annually into a use entitlement for each licence holder depending on how many units they hold. The current conversion is 1 day for 1 unit. This conversion is based on the TSPF harvest strategy, which sets the annual total allowable effort limit at the level of effort associated with maximum sustainable yield of tiger prawns. The Harvest Strategy also has a long term target of maximum economic yield, however PZJA agencies are now considering the suitability of MEY for the TSPF.

Minimum day holding

Each licence holder must hold a minimum of 34 days since the effort reduction in 2006. A 50 day minimum was in place before 2006. The minimum holding aims to encourage investment in the fishery.

Boat and gear restrictions

Licence holders are entitled to fish with up to 88m of headrope length across all nets and boats up to 20m. There are a few boats greater than 20m remaining under the grandfather clause before this restriction came into place.

Licensing leasing

Boats are entitled to lease licences for one fishing season at a time. They are also entitled to lease units of fishing capacity to people who hold a licence. This arrangement aims to improve flexibility for people not currently fishing and encourage trade amongst licence holders.

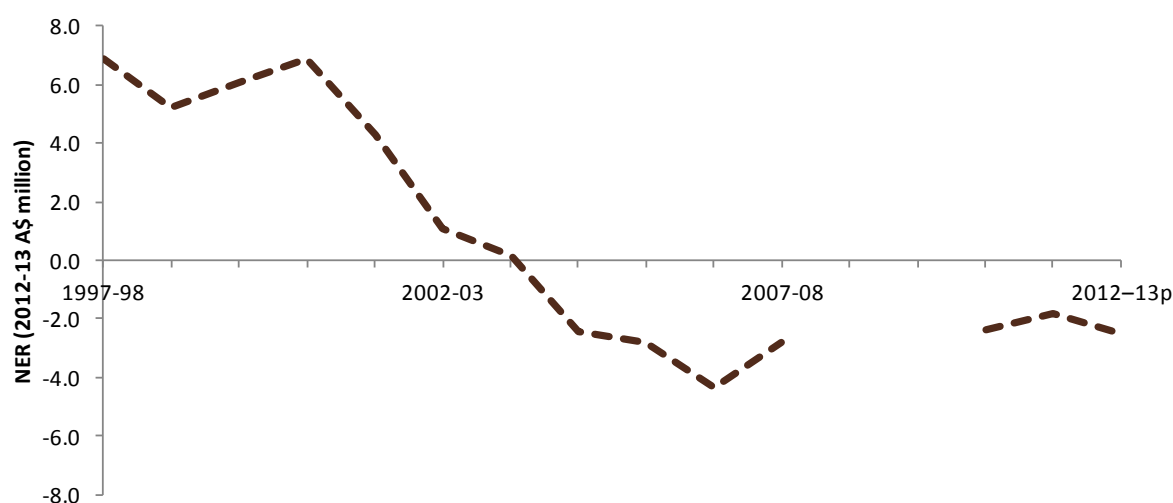
Bycatch limits

Species	Maximum quantity/ size
Mackerels	Total of 20kg combined in any form
Finfish	Total of 20kg combined in any form including mackerels
Shark, TRL, pearl shell, turtle, coral	NIL
Moreton Bay Bug	No quantity limit. 75mm min carapace width.

ABARES economic and financial survey of the fishery

ABARES has undertaken financial and economic surveys of the fishery since the early 1990s. These surveys show that the TSPF has been operating at a negative net economic return, since 2004-05, and simultaneously operating well below the current levels of effort limits (Units of Fishing Capacity, or UFCs) imposed by the management authority. This suggests that fishing under existing management arrangements in the current market settings does not provide a return worth expending further effort. While market forces cannot be controlled, management arrangements can be adjusted from time to time if such adjustment provides benefits that are greater than costs.

Figure 1. Net Economic Returns (NER) for the TSPF (financial years)



Future Management Options

In order to improve participation in the fishery and thereby fishery economic returns, the current set of management arrangements applying to the fishery need to be assessed for their impact on the economic returns to operators. In this assessment it should be recognised that management arrangements by their nature are instruments intended to manage the costs (or “externalities”) imposed on the local and broader Australian community, the environment and other fishers by fishing activity (here by managing the fishery in alignment with the objectives of the *TSPF Act 1984* and *TSPF Management Plan 2009*). In pursuing the objective of minimising the external costs of fishing activity it should also be recognised that each management arrangement will have a varying impact on the economics of operating in the fishery, with some more significant than others. This is why one of the objectives of the Plan is to ensure cost effective management and economic efficiency of the TSPF, as it puts a focus on using management arrangements that minimise the costs while maximise economic efficiency and returns. There is also a possibility that different management arrangements combine to have a disproportionate impact on the economics of the fishery. From a preliminary assessment of the current management arrangements ABARES assesses that the arrangements that may negatively impact most on the economics of the fishery are gear/boat size restrictions, spatial arrangements, temporal arrangements, effort arrangements.

Gear/Boat Size

Current gear and boat size restrictions may be reducing economic returns from the fishery in two main ways.

Firstly, restrictions may reduce the capacity for fishers to adopt the most efficient fishing methods. This is particularly likely with regard to the boat length restriction which imposes considerable constraints in an isolated fishery like the TSPF which is relatively far from the home ports of the vessels, and where the ability to stay at sea longer without mothership support is more valuable. It is also noted that the current restriction on vessel size in the TSPF alters the economics of operating in the NPF for dual endorsed vessels. In the NPF vessels are typically longer than 20 meters.

Secondly, it excludes many of the vessels operating in the adjacent Northern Prawn Fishery, who could plausibly fish profitably by extending their existing fishing businesses into the TSPF if dual endorsements are held. Allowing these fleets to use their existing economies of scale and sharing fixed costs across both fisheries could increase economic returns in the TSPF. Existing fishing activity is well below Maximum Sustainable Yield (MSY) and Total Allowable Effort (TAE) levels so the entry of larger vessels is unlikely to drive out existing operators, but it may increase the value of the UFCs they own.

The existing gear and boat restrictions are maintained due to community concerns about pollution, increased bycatch, potential to interfere with the Tropical Rock Lobster Fishery and habitat damage. Any relaxation of these restrictions must take these potential costs into account.

Increase in Spatial Arrangements

Whilst various parts of the fishery are closed to fishing, allowing greater access to them is unlikely to increase economic returns. The high latency in UFCs and existing yields well below yields at MSY or even at (Maximum Economic Yield (MEY) imply existing areas can still provide considerable increases in yield, and thus new areas are unlikely to increase returns, especially where they are more distant from port than existing underfished areas. Furthermore, relaxation of spatial arrangements in some areas have the potential to lower economic returns (for example by damaging juvenile populations in the East of Warrior Reef closure) or result in costs to communities, habitats and other species.

Review of Temporal Arrangements

One option is to shorten the seasonal closure to allow more fishing effort. However the low UFC use and yields in the existing season suggest that existing operators have already deemed returns too low to justify expanding operations. However, because the existing season is largely concurrent with the Banana and Tiger prawn seasons in the neighbouring NPF, expanding the TSPF season could potentially allow NPF vessels to operate when the NPF is closed, whilst sharing many of the fixed costs with the NPF. This, however, may require a relaxation of gear and vessel restrictions as described above, and would need to consider any reduction in social amenity for the local community.

Reducing permit trading transaction costs

At present there is little temporary trade effort permits in the TSPF due to high transaction costs relative to the value of the permits. The small size of the fishery means sales agents, as arise in other markets, do not exist and potential buyers and sellers need to find each other. This restricts movement of permits to more efficient fishers who potentially can use them for higher economic returns. The management

authority could investigate its capacity to facilitate trade and make it easier for potential buyers and sellers to find each other.

Framing option

A last option -- that is not conventionally economic in nature and is harder to assess - would be to replace the TAE limit with a TAC limit. Speculatively, by framing the limits in terms of a yield rather than expenditure, operators might be more inclined to increase effort rather than leave catch "on the table". However this does not address the low economic returns that are presumably the cause of low effort levels.

Glossary

Maximum economic yield (MEY) – The sustainable catch level for a commercial fishery that allows net economic returns to be maximised. This is usually a lower level than Maximum sustainable yield (MSY).

Maximum sustainable yield (MSY) – The maximum average annual catch that can be removed from a stock over an indefinite period under prevailing environmental conditions.

Total allowable effort (TAE) – An upper limit on the amount of effort allowed in a fishery.

Unit of Fishing Capacity (UFC) – a standard unit representing an amount of fishing effort (for instance one night) attributed to a licence holder, describing how much effort they may exert in a fishery. The total number of UFCs in a fishery should equal total allowable effort.