



Australian Government

Department of the Environment

Assessment of the Northern Prawn Fishery

December 2013

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Disclaimer

This document is an assessment carried out by the Department of the Environment of a commercial fishery against the Australian Government *Guidelines for the Ecologically Sustainable Management of Fisheries – 2nd Edition*. It forms part of the advice provided to the Minister for the Environment on the fishery in relation to decisions under Part 13 and Part 13A of the *Environment Protection and Biodiversity Conservation Act 1999*.

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TABLE 1: SUMMARY OF THE NORTHERN PRAWN FISHERY

<p>Publicly available information relevant to the fishery</p>	<ul style="list-style-type: none"> • Commonwealth <i>Fisheries Management Act 1991</i> • Fisheries Management Regulations 1992 • Northern Prawn Fishery Management Plan 1995 • Australian Fisheries Management Authority – Harvest Strategy for the Northern Prawn Fishery under Input Controls 2012 • Australian Fisheries Management Authority – Ecological Risk Management – Report for the Northern Prawn Fishery Tiger and Banana Prawn Sub-fisheries – January 2012 • Australian Fisheries Management Authority – Northern Prawn Fishery Bycatch and Discarding Workplan: January 2012 – January 2014 • Australian Bureau of Agricultural and Resource Economics and Sciences – Fishery status reports 2012 (Northern Prawn Fishery)
<p>Area</p>	<p>The Northern Prawn Fishery (Figure 1, page 7) extends from the low water mark (in state waters) to the outer edge of the Australian Fishing Zone (Commonwealth waters) along approximately 6000 kilometres of coastline from Cape York in Queensland, westward to Cape Londonderry (the northernmost point of Western Australia).</p> <p><i>(Under an Offshore Constitutional Settlement agreement between the Australian Government and the Western Australia, Northern Territory and Queensland governments, prawn trawling in the area of the Northern Prawn Fishery to low water mark is the responsibility of the Commonwealth.)</i></p>
<p>Target species and stock status</p>	<p>The Northern Prawn Fishery is a multi species fishery, with four prawn species groups targeted – tiger prawns, banana prawns, endeavour prawns and king prawns. White banana prawns and two species of tiger prawns account for between 80 per cent and 90 per cent of the annual catch from the fishery.</p> <p>Prawns are fast growing species. They reach maturity at approximately six months of age yet can live for up to two years. Banana prawns inhabit sand or mud bottoms during adulthood and use mangrove-lined creeks and rivers as nursery habitats. Tiger prawns use estuarine seagrass beds as nursery habitats. More information on the biology and distribution of these species can be found in Flood et. al. (2012).</p> <p>Five of the six key target prawn species stocks are considered not overfished and not subject to overfishing. Red endeavour prawns are classified as having uncertain status (the stock status has not been determined) (Woodhams and George 2013).</p>

<p>Byproduct species</p>	<p>Species which are incidentally caught in trawling operations and which are retained because of their commercial value include:</p> <ul style="list-style-type: none"> • two species of slipper lobster (bugs) (<i>Thenus indicus</i> and <i>T. orientalis</i>) - also referred to as bay lobster - are exploited in areas where prawns are targeted • delicate saucer scallop (<i>Amusium pleuronectes</i>) - taken incidentally in coastal waters from around Melville Island (north of Darwin) to west of Karumba in the Gulf of Carpentaria and an area around Weipa (Cape York) • squid, cuttlefish, mud crabs and tropical rock lobster, and • some larger fish species such as emperors, mackerels and snappers. <p>Byproduct limits or other management measures are in place for a large range of byproduct species. (A complete list of these can be found in the <i>Harvest Strategy for the Northern Prawn Fishery under Input Controls 2012.</i>) Byproduct limits are implemented through Directions made under the <i>Fisheries Management Act 1991</i>.</p> <p>Milton et.al. (2010) developed harvest strategies for byproduct species and calculated Allowable Biological Catches (ABCs) for major byproduct species as part of the project 'Biology, dynamics and management strategy evaluation for byproduct species in the NPF'. The harvest strategy document for the Northern Prawn Fishery was amended, in consultation with the fishery's resource assessment group and management advisory committee, to incorporate harvest strategies for byproduct species when these became available, most recently in 2011. The Australian Fisheries Management Authority has advised that these harvest strategies are scheduled to be reviewed prior to the 2015 fishing season, as part of implementing long term management arrangements for the fishery under input controls.</p> <p>Scampi (<i>Metanephropsis</i> sp.) – a type of lobster – is taken from a deep water area on the edge of the Australian Fishing Zone to the north of Melville Island. Scampi is targeted by a few trawlers during prawn trawling closure periods but due to the high cost associated with travel to and from the scampi grounds, and the restricted market opportunities for sale of the catch, scampi catches from 2005 to 2009 averaged only 12 tonnes per annum. There is no current formal stock assessment for scampi, but given the low catches the species is considered by the Australian Fisheries Management Authority to be ecologically sustainable.</p>
<p>Gear</p>	<p>Otter (prawn) trawl nets are the permitted fishing method.</p> <ul style="list-style-type: none"> • gear statutory fishing rights limits the amount of net a fisher can use. • inclusion of an approved turtle excluder device and bycatch reduction device in all trawl nets has been mandatory since 2001. • vessel monitoring systems are required on all vessels operating in the fishery.
<p>Season</p>	<ul style="list-style-type: none"> • banana prawn season – April to June • tiger prawn season – August to November

Commercial harvest 2012	<ul style="list-style-type: none"> • banana prawns 4901 tonnes • tiger prawns 1203 tonnes • endeavour prawns 487 tonnes • other catch 78 tonnes <p>(Source: Woodhams and George 2013)</p>
Value of commercial harvest 2011/12	<ul style="list-style-type: none"> • banana prawns \$42.0 million • tiger prawns \$16.6 million • endeavour prawns \$4.5 million • other catch \$1.6 million <p>(Source: Woodhams and George 2013)</p>
Take by other sectors	<p>Prawn harvest by the recreational and Indigenous sectors is unknown, but is considered negligible in northern Australia.</p> <p>Under the Offshore Constitutional Settlement agreements with the states and Northern Territory, the Australian Fisheries Management Authority is obliged to allow the collection of prawn broodstock by suitably licensed state and Northern Territory operators. Up to a maximum of three broodstock permits may be active at any one time.</p> <p>Trip limits for byproduct species, established under a Memorandum of Understanding with the relevant states and the Northern Territory are enforced through 'NPF Directions' under the <i>Fisheries Management Act 1991</i>. These trip limits restrict operators in the Northern Prawn Fishery from targeting species from overlapping state/ Northern Territory managed fisheries.</p>
Commercial licences issued	52
Management arrangements	<p>The Northern Prawn Fishery is managed by the Australian Fisheries Management Authority under the <i>Fisheries Management Act 1991</i>, Fisheries Management Regulations 1992, the Northern Prawn Fishery Management Plan 1995 and determinations and directions in force under the <i>Fisheries Management Act 1991</i>.</p> <p>Specific management measures include:</p> <ul style="list-style-type: none"> • limited entry and gear restrictions – to fish in the Northern Prawn Fishery operators must hold Statutory Fishing Rights (SFRs), which control fishing capacity by placing limits on the numbers of trawlers and the amount of gear permitted in the fishery. There are two types of SFR, a Class B SFR, which permits a boat to fish in the NPF and a gear SFR, which limits the headrope length a fisher can use. The maximum number of boat SFRs allowed in the fishery is 52. • area restrictions: <ul style="list-style-type: none"> - permanent closures (2.1% of the total fishery area), and - seasonal closures of certain areas (8.3% of the total fishery area). • specific fishing seasons (see Seasons above)

Management arrangements <i>(cont.)</i>	<ul style="list-style-type: none"> • temporal closures - a daylight ban on trawling applies during the tiger prawn season • permitted species (the take of sharks, rays and skates is prohibited) • ecological risk assessment (see Ecosystem impacts, below) • harvest strategy - the <i>Harvest Strategy for the Northern Prawn Fishery under Input Controls 2012</i> outlines reference points for target and byproduct species. The harvest strategy includes explicit management responses for key target species. If byproduct limits are triggered in any given year, the fishery's resource assessment group must explore the reasons for this and develop appropriate management solutions. • bycatch & discarding workplans (see Bycatch, below) • research plan – a research plan for the fishery for 2013/14 has been developed. The Northern Prawn Fishery Industry Pty Ltd in consultation with the fishery's management advisory committee and resource assessment group, is currently overseeing a process which will result in the development of a five year research plan for 2014-2018. • monitoring programs: <ul style="list-style-type: none"> - fishery logbook (location, time, gear and method of fishing as well as the resultant catch for each fishing operation) - Season Landing Report (a record of all the catch landed) - the Australian Fisheries Management Authority's scientific observer program provides fishing, catch and bycatch data on around two per cent of the fishery - the Crew Member Observer (CMO) program provides additional information on interactions with at risk and protected species. Data collected through the CMO program is being analysed by CSIRO as part of a long term bycatch monitoring project. A progress report from this project is due in May 2014.
Export	<p>Catch from the Northern Prawn Fishery is both sold domestically and exported to Japan (Woodhams and George 2013).</p>

<p>Bycatch</p>	<p>Prawn trawling is one of the least selective methods of fishing and an inherent characteristic of tropical prawn trawl fisheries is a high ratio of bycatch to retained catch, with high proportions of fin fish and elasmobranchs (sharks and rays) (Haywood et.al., 2005). Prior to the introduction of bycatch reduction devices, bycatch:catch ratios ranging from 2:1 to 20:1 were reported from the Northern Prawn Fishery (Pender et.al. 1992 cited in Haywood et.al. 1995). Stobutski et.al. (2000) found considerable regional and temporal variations in bycatch rates and composition.</p> <p>The Northern Prawn Management Advisory Committee (NORMAC) estimates that, across the fishery, a more than 50 per cent reduction in bycatch has been achieved since 1998 as a result of effort reductions, the implementation of spatial and temporal closures and the introduction of the mandatory use of bycatch reduction devices and turtle excluder devices (AFMA 2011, Fry and Miller 2013).</p> <p>A number of management measures in place in the Northern Prawn Fishery contribute to minimising bycatch. These include:</p> <ul style="list-style-type: none"> • permanent closures to trawl fishing over seagrass beds - the majority of seagrass beds are closed permanently to prawn trawl fishing to provide protection of habitat, pre-spawning prawns, juvenile prawns and protected species • seasonal closures • a permanent closure on daylight trawl fishing during the tiger prawn fishing season, and • mandatory use of a turtle excluder device and bycatch reduction device. <p>The aim of the <i>Northern Prawn Fishery - Bycatch and discarding workplan - January 2012 – January 2014</i> (AFMA 2011) is to develop strategies that will:</p> <ul style="list-style-type: none"> • respond to high ecological risks assessed through the Australian Fisheries Management Authority's Ecological Risk Assessment for the Effect of Fishing (ERAEF) and other assessment processes • avoid interactions with species listed under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act) • reduce discarding of target species to as close to zero as practically possible, and • minimise overall bycatch in the Northern Prawn Fishery over the long term. <p>Research into bycatch mitigation strategies is a major component of the bycatch and discarding workplan. The Australian Fisheries Management Authority has advised that a new bycatch and discarding workplan for the fishery will be developed in consultation with stakeholders prior to the 2014 fishing season.</p>
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<p>Interaction with protected species¹</p>	<p>The Northern Prawn Fishery has the potential to interact with a number of species under the EPBC Act, including marine turtles, sawfish, syngnathids and sea snakes.</p> <p>Turtle excluder devices and bycatch reduction devices have been mandatory in the fishery since 2001 and have resulted in a 97 per cent reduction in turtle bycatch, 86 per cent reduction in large shark capture, 94 per cent reduction in stingray capture and 93.3 per cent reduction in narrow sawfish capture.</p> <p>Some bycatch reduction devices have also been shown to reduce sea snake capture and a number of those designs have been legislated as approved bycatch reduction devices for the Northern Prawn Fishery (NPF Direction Gear Requirements 150 (TEDs and BRDs)).</p> <p>The results from the Australian Fisheries Management Authority's ecological risk assessment/ecological risk management process for the Northern Prawn Fishery, taking into account the measures in place in the fishery which act to prevent mortality to protected species, do not report any protected species at risk from the effects of fishing.</p> <p>Reporting of protected species interactions in fishing logbooks is compulsory. The Australian Fisheries Management Authority's scientific observer programs and crew member observer programs also monitor interactions with protected species. The Australian Fisheries Management Authority publishes quarterly summaries of protected species interactions on the authority's website and annual reports of the results of the crew member observer program are compiled.</p>
<p>Ecosystem impacts</p>	<p>Ecosystem impacts are assessed through the Australian Fisheries Management Authority's ecological risk assessment process. Ecological risk assessments for the Northern Prawn Fishery assessed nine target species, 135 byproduct species, 516 discard species, 128 threatened, endangered and protected species, 157 habitats and three communities.</p> <p>The initial ecological risk assessment for the fishery identified seven species as high priority for the fishery - two chondrichthyan (ray) species, two teleost (fish) species and three invertebrate species. The fishery underwent a second iteration of the level 2.5 Sustainability Assessment for Fishing Effects (SAFE) assessment in February 2011, and the two teleost species and one of the ray species was removed from the list of priority species. At the end of the process, taking into account management measures in the fishery, three species were identified to be at high risk from fishing activities – two mantis shrimp species taken as byproduct and one bycatch species, the porcupine ray.</p> <p>The <i>Ecological Risk Management – Report for the Northern Prawn Fishery Tiger and Banana Prawn Sub-fisheries – January 2012</i> and the <i>Northern Prawn Fishery Bycatch and Discarding Workplan: January 2012 – January 2014</i> set out management measures aimed at addressing the risks to these species.</p>

¹ 'Protected species' means all species listed under Part 13 of the EPBC Act, including whales and other cetaceans and threatened, marine and migratory species.

<p>Ecosystem impacts (cont.)</p>	<p>In relation to habitats and communities, a total of 2.1 per cent of the fishery is permanently closed to protect seagrass beds and other sensitive habitats. In addition, Bustamante et.al. (2010) suggest that impacts to benthic habitats are likely to be low at current effort levels (limited to 52 fishing licences).</p>
<p>Impacts on Wetlands of International Importance</p>	<p>The assessment also considered the possible impacts on the ecological character of a number of wetlands which are included on the List of Wetlands of International Importance developed under the Ramsar convention:</p> <ul style="list-style-type: none"> • the Ord River Floodplain Ramsar site (Western Australia), and • the Cobourg Peninsula Ramsar site and the Kakadu National Park Ramsar site (Northern Territory). <p>The area of the Northern Prawn Fishery includes waters adjacent to the Ord River Floodplain Ramsar site, the Cobourg Peninsula Ramsar site and the Kakadu National Park Ramsar site. Under the EPBC Act, a person may not take an action that has, will have, or is likely to have, a significant impact on the ecological character of a Wetland of International Importance.</p> <p>The Australian Fisheries Management Authority has advised that there has been no fishing effort close to the Ord River Floodplain or Kakadu National Park in recent years.</p> <p>The Cobourg Peninsula Ramsar site boundary follows the Northern Territory Garig Gunak Barlu National Park, and covers all wetlands of Cobourg Peninsula and nearby Sir George Hope Islands. It includes freshwater and extensive intertidal areas, but excludes subtidal areas. The Northern Prawn Fishery does operate within this area, but catch and effort is low relative to areas outside the site.</p> <p>Given that there is no or little fishing effort within the Ramsar sites, extensive area and seasonal closures (for example, closure of Port Essington) and the suite of management arrangements governing fishing (see Management Arrangements, above), the Department considers that an action taken by an individual fisher, acting in accordance with the management regime for the Northern Prawn Fishery, would not be expected to have a significant impact on the ecological character of the Ord River Floodplain Ramsar site, the Cobourg Peninsula Ramsar site or the Kakadu National Park Ramsar site Wetlands of International Importance.</p>

Figure 1. Area of the Northern Prawn Fishery (source: Australian Fisheries Management Authority)

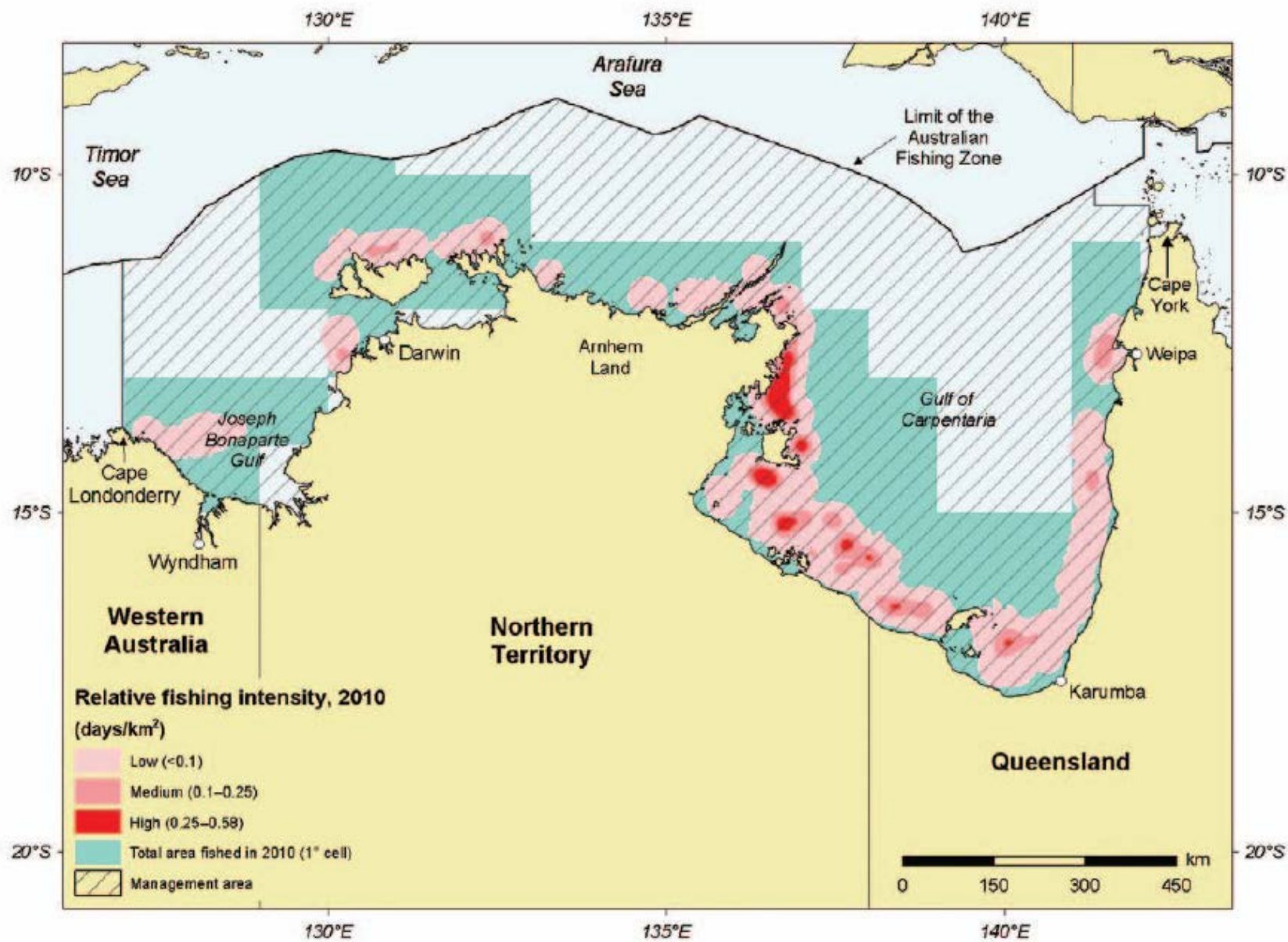


TABLE 2: PROGRESS IN IMPLEMENTATION OF RECOMMENDATIONS MADE IN THE 2008 ASSESSMENT OF THE NORTHERN PRAWN FISHERY

Recommendation	Progress	Recommended Action
<p>1. Operation of the fishery will be carried out in accordance with the Northern Prawn Fishery Management Plan 1995 (the Management Plan), made under the Commonwealth <i>Fisheries Management Act 1991</i>.</p>	<p>The Department is satisfied that the Northern Prawn Fishery has operated in accordance with the Northern Prawn Fishery Management Plan 1995, made under the <i>Fisheries Management Act 1991</i>, since the 2008 decision to include the fishery in the list of exempt native specimens.</p>	<p>The Department of the Environment considers this recommendation met.</p> <p>The Department recommends that this action be continued (see Recommendation 1, Table 4).</p>
<p>2. AFMA to inform DEWHA of any intended amendments to the management arrangements that may affect the criteria on which <i>Environment Protection Biodiversity Conservation Act 1999</i> (EPBC Act) decisions are based.</p>	<p>The Department is satisfied that the Australian Fisheries Management Authority has kept the Department informed of potential changes to management arrangements for the Northern Prawn Fishery.</p>	<p>The Department considers this recommendation met.</p> <p>The Department recommends that this action be continued (see Recommendation 2, Table 4).</p>
<p>3. AFMA to produce and present reports to DEWHA annually as per Appendix B to the 'Guidelines for the Ecologically Sustainable Management of Fisheries – 2nd Edition'.</p>	<p>A report on the Northern Prawn Fishery is included in the Australian Bureau of Agricultural and Resource Economics and Sciences Fishery Status Reports, published annually.</p>	<p>The Department considers this recommendation met.</p> <p>The Department recommends that this action be continued (see Recommendation 3, Table 4).</p>

Recommendation	Progress	Recommended Action
<p>4. By December 2009, AFMA to formalise and link detailed objectives, performance criteria, performance measures and review requirements to the NPF Management Plan, including a formal requirement for a comprehensive review and an assessment of the effectiveness of the management arrangements at least every five years.</p>	<p>The first assessment of the Northern Prawn Fishery under the <i>Environment Protection Biodiversity Conservation Act 1999</i> highlighted the need for the Australian Fisheries Management Authority to formalise and link the objectives, performance criteria, performance measures and review periods of the fishery management arrangements directly to the fishery's management plan. At the time, the objectives and performance criteria were articulated in the <i>Northern Prawn Fishery Strategic Plan 2001 – 2006</i> with overarching objectives defined in the Management Plan. The issue was identified as ongoing in the 2009 assessment of the fishery, coupled with the fact that the strategic plan was no longer current. Previous assessments also identified that there is no formal requirement for the management plan to be periodically reviewed and that regular review of the management arrangements is important to ensure they remain current and take into account recent developments in fisheries management and science.</p> <p>At present, performance criteria and objectives for fisheries are located in the <i>Fisheries Management Act 1991</i> and a statement of the performance of the Northern Prawn Fishery against its objectives, performance indicators and performance measures is made annually in AFMA's annual report.</p> <p>In late 2013, the Australian Fisheries Management Authority Commission agreed, as part of implementing long term management arrangements for the fishery based on an individual transferable effort management system, to implement a formal review of the fishery's management plan every five years, with the first review to be conducted in 2018-19.</p>	<p>The Department is satisfied that forthcoming amendments to the Northern Prawn Fishery Management Plan 1995 as part of implementing long term management arrangements for the fishery meet this recommendation.</p>

Recommendation	Progress	Recommended Action
<p>5. By December 2009, AFMA to develop and implement appropriate management responses to address and mitigate risks identified in the NPF Ecological Risk Assessment (ERA). In the event that risk levels increase, or cumulative effects are detected, AFMA to implement appropriate mitigation measures to address these risks.</p>	<p>In 2009, the <i>Ecological Risk Management (ERM) Report for the Northern Prawn Fishery - Tiger and Banana Prawn Sub-Fisheries – July 2009</i> was published by the Australian Fisheries Management Authority. That report outlined policies and measures aimed at mitigating risks to priority species identified through the ecological risk assessment process for the fishery, completed in 2009.</p> <p>The initial Northern Prawn Fishery ecological risk assessment identified seven species as high priority for the fishery - two chondrichthyan (ray) species, two teleost (fish) species and three invertebrate species. The fishery underwent a second iteration of the level 2.5 Sustainability Assessment for Fishing Effects (SAFE) assessment in February 2011 (see below) and two teleost species and one of the ray species identified in the original ecological risk assessment were removed from the list of priority species.</p> <p>The outcomes of all risk assessments for the fishery resulted three bycatch species being identified as ‘at risk’ and requiring management attention. Strategies for reducing the risk to the three remaining ‘at risk’ species are outlined in the <i>Ecological Risk Management – Report for the Northern Prawn Fishery Tiger and Banana Prawn Sub-fisheries – January 2012</i> and the <i>Northern Prawn Fishery Bycatch and Discarding Workplan January 2012 – January</i> and in the Bycatch and Discarding Workplan.</p> <p>No risk levels increased on completion of the ecological risk assessment/ecological risk management exercise.</p>	<p>The Department considers this recommendation met.</p>

Recommendation	Progress	Recommended Action
<p>6. The ERA and the effectiveness of management responses should be reviewed as appropriate, but at least within three years of completion of the level 2.5 SAFE analysis.</p>	<p>A review of the level 2.5 Sustainability Assessment of Fishing Effects (SAFE) analysis, originally completed in late 2007, was completed in early 2011. This assessment incorporated updated fishing catch and effort data, as well as scientific data.</p> <p>An update of the ecological risk assessment is expected to be completed in early 2014.</p>	<p>The Department considers this recommendation met.</p>
<p>7. AFMA to continue to cooperate with relevant jurisdictions to pursue complementary management and research of all aspects of the fishery, including target, byproduct, bycatch (including protected species) and impacts on the ecosystem.</p>	<p>The Australian Fisheries Management Authority continues to liaise with the relevant jurisdictions on all relevant matters in the Northern Prawn Fishery through the Northern Prawn Fishery Management Advisory Committee (NORMAC) which includes representatives from Queensland and the Northern Prawn Fishery Industry. Catch limits for Northern Prawn Fishery byproduct species taken in other state managed fisheries are established via memorandums of understanding with the Queensland, Northern Territory and Western Australian governments under Offshore Constitutional Settlement arrangements.</p>	<p>The Department considers this recommendation met.</p>
<p>8. AFMA to continue to improve monitoring systems for byproduct species ensuring trigger limits and reference points are biologically meaningful, and that management responses have clear timeframes for implementation.</p>	<p>Since the 2009 Australian Government assessment of the Northern Prawn Fishery, harvest strategies for byproduct species and 'allowable biological catches' have been developed for major byproduct species. The harvest strategies incorporate outcomes of research which developed statistical models, based on aggregated logbook data, for byproduct species groups in the fishery and developed catch limits for each byproduct groups (Milton <i>et.al.</i> 2010). This has allowed reference points and decision rules for byproduct species groups to be included in the fishery's harvest strategy document (see Table 1).</p>	<p>The Department considers this recommendation met.</p>

Recommendation	Progress	Recommended Action
<p>9. AFMA to continue to:</p> <p>(a) monitor bycatch and protected species interactions in the fishery; and</p> <p>(b) develop, trial, test and refine the effectiveness of bycatch mitigation and other management measures, to continue to effectively mitigate against and reduce bycatch in the fishery.</p> <p>Particular focus should be given for sawfish, rays and sea snakes.</p>	<p>a) The Australian Fisheries Management Authority has continued to monitor bycatch and protected species interactions in the Northern Prawn Fishery. Currently, monitoring occurs through logbooks, research surveys and the scientific observer and crew member observer programs.</p> <p>b) A major aim of the fisheries bycatch and discarding workplans has been to refine the bycatch reduction devices currently in use within the fishery and ensure that the best possible devices are being used by the industry. Research into the use of lights and an assessment of bycatch reduction devices in use in the fishery have also been conducted since the last Australian Government assessment of the fishery in 2008.</p> <p>An assessment of bycatch reduction devices in use in the fishery (Burke et.al., 2012) highlighted several possible methods for further reducing bycatch and protected species interactions. The Department recognises that the Australian Fisheries Management Authority and industry is seeking to reduce the level of bycatch and protected species interactions and recommends that this work continues to be a priority.</p>	<p>The Department considers that this recommendation is partially met and ongoing (see Recommendation 4, Table 4).</p>

TABLE 3: THE DEPARTMENT OF THE ENVIRONMENT’S ASSESSMENT OF THE NORTHERN PRAWN FISHERY AGAINST THE REQUIREMENTS OF THE EPBC ACT RELATED TO DECISIONS MADE UNDER PARTS 13 AND 13A.

Please Note – the table below is not a complete or exact representation of the EPBC Act. It is intended as a summary of relevant sections and components of the EPBC Act to provide advice on the fishery in relation to decisions under Parts 13 and 13A. A complete version of the EPBC Act can be found at <http://www.comlaw.gov.au/>.

Part 13

<p>Division 1 Listed threatened species Section 208A Minister may accredit plans or regimes</p>	<p>The Department’s assessment of the Northern Prawn Fishery</p>
<p>(1) Minister may, by instrument in writing, accredit for the purposes of this Division:</p> <p>(a) a plan of management within the meaning of section 17 of the <i>Fisheries Management Act 1991</i>;</p> <p>if satisfied that:</p> <p>(f) the plan, regime or policy requires persons engaged in fishing under the plan, regime or policy to take all reasonable steps to ensure that members of listed threatened species (other than conservation dependent species) are not killed or injured as a result of the fishing; and</p>	<p>The Northern Prawn Fishery will be managed under the Northern Prawn Fishery Management Plan 1995 in force under the <i>Fisheries Management Act 1991</i>.</p> <p>The Northern Prawn Fishery Management Plan 1995 was accredited under section 208A (Part 13) for listed threatened species in January 2006. While there have been amendments to the plan since that time, those amendments do not materially change the requirement to take steps to ensure that members of listed threatened species are not killed or injured as a result of the fishing.</p> <p>Section 9ZS of the Fisheries Management Regulations 1992 requires that Commonwealth fishing concession holders must ensure that, as far as practicable, there is no interaction with a protected species during a fishing trip.</p> <p>The Northern Prawn Fishery Management Plan 1995 provides for the management of the fishery through the use of determinations and directions under the <i>Fisheries Management Act 1991</i>.</p>

Division 1 Listed threatened species Section 208A Minister may accredit plans or regimes	The Department's assessment of the Northern Prawn Fishery
	<p>The following determinations and directions for the Northern Prawn fishery require fishers to do or not do certain actions which reduce the likelihood of interactions with protected species:</p> <ul style="list-style-type: none"> • Gear Determination NPF GD 07 • NPF Direction Byproduct Limits and Prohibited Species 158 • NPF Direction Protected Area Closures 155 • NPF Direction Prohibition on Fishing (Prior to Seasons) 156, and • NPF Direction First Season Closures 157 <p>The following direction requires fishers to do or not do certain actions which may contribute to reducing injuries or mortalities to protected species should interactions occur:</p> <ul style="list-style-type: none"> • NPF Direction Gear Requirements 150 (TEDs and BRDs). <p>The Department considers that the Northern Prawn Fishery Management Plan 1995 as administered by the Australian Fisheries Management Authority requires persons engaged in fishing under the plan to take all reasonable steps to ensure that members of listed marine species are not killed or injured as a result of the fishing.</p>
<p>(g) the fishery to which the plan, regime or policy relates does not, or is not likely to, adversely affect the survival or recovery in nature of the species.</p>	<p>Given that:</p> <ul style="list-style-type: none"> • spatial and temporal closures protect critical habitat and act to reduce the impact of fishing on protected species • measures to avoid capture of and mortality to protected species are employed in the fishery (see Table 1 and above), in particular, the use of turtle excluder devices avoid the capture of marine turtles and sawfishes, and • the results from the ecological risk assessments, taking into account the measures in place in the fishery which act to prevent mortality to protected species, do not report any listed threatened species at risk from fishing, <p>the Department considers the current operation of the Northern Prawn Fishery is not likely to adversely affect the survival or recovery in nature of any listed threatened species.</p>

Part 13 (cont.)

Division 2 Migratory species Section 222A Minister may accredit plans or regimes	The Department's assessment of the Northern Prawn Fishery
<p>(1) Minister may, by instrument in writing, accredit for the purposes of this Division:</p> <p>(a) a plan of management within the meaning of section 17 of the <i>Fisheries Management Act 1991</i>;</p> <p>if satisfied that:</p> <p>(f) the plan, regime or policy requires persons engaged in fishing under the plan, regime or policy to take all reasonable steps to ensure that members of listed migratory species are not killed or injured as a result of the fishing; and</p> <p>(g) the fishery to which the plan, regime or policy relates does not, or is not likely to, adversely affect the conservation status of a listed migratory species or a population of that species.</p>	<p>The Northern Prawn Fishery will be managed under the Northern Prawn Fishery Management Plan 1995 in force under the <i>Fisheries Management Act 1991</i>.</p> <p>The Northern Prawn Fishery Management Plan 1995 was accredited under section 222A (Part 13) for listed migratory species in January 2006. While there have been amendments to the plan since that time, those amendments do not materially change the requirement to take steps to ensure that members of listed migratory species are not killed or injured as a result of the fishing (see section 208A - listed threatened species - above).</p> <p>Given that:</p> <ul style="list-style-type: none">• interactions with migratory species in the fishery have been very low, and• results from the ecological risk assessments, taking into account the measures in place in the fishery which act to prevent mortality to protected species, do not report any listed migratory species at risk from fishing, <p>the Department considers the current operation of the Northern Prawn Fishery is not likely to adversely affect the conservation status of a listed migratory species or a population of that species.</p>

Part 13 (cont.)

Division 3 Whales and other cetaceans Section 245 Minister may accredit plans or regimes	The Department's assessment of the Commonwealth Northern Prawn Fishery
<p>(1) Minister may, by instrument in writing, accredit for the purposes of this Division:</p> <p>(a) a plan of management within the meaning of section 17 of the <i>Fisheries Management Act 1991</i>;</p> <p>if satisfied that:</p> <p>(f) the plan, regime or policy requires persons engaged in fishing under the plan, regime or policy to take all reasonable steps to ensure that cetaceans are not killed or injured as a result of the fishing; and</p> <p>(g) the fishery to which the plan, regime or policy relates does not, or is not likely to, adversely affect the conservation status of a species of cetacean or a population of that species.</p>	<p>The Northern Prawn Fishery will be managed under the Northern Prawn Fishery Management Plan 1995 in force under the <i>Fisheries Management Act 1991</i>.</p> <p>The Northern Prawn Fishery Management Plan 1995 was accredited under section 245 (Part 13) for whales and other cetaceans in January 2006. While there have been amendments to the plan since that time, those amendments do not materially change the requirement to take steps to ensure that cetaceans are not killed or injured as a result of the fishing (see section 208A - listed threatened species - above).</p> <p>Given that:</p> <ul style="list-style-type: none">• interactions with cetaceans in the fishery have been low, and• results from the ecological risk assessments, taking into account the measures in place in the fishery which act to prevent mortality to protected species, do not report any cetacean species at risk from fishing, <p>the Department considers the current operation of the Northern Prawn Fishery is not likely to adversely affect the conservation status of a species of cetacean or a population of that species.</p>

Part 13 (cont.)

Division 4 Listed marine species Section 265 Minister may accredit plans or regimes	The Department's assessment of the Northern Prawn Fishery
<p>(1) Minister may, by instrument in writing, accredit for the purposes of this Division:</p> <p>(a) a plan of management within the meaning of section 17 of the <i>Fisheries Management Act 1991</i>;</p> <p>if satisfied that:</p> <p>(f) the plan, regime or policy requires persons engaged in fishing under the plan, regime or policy to take all reasonable steps to ensure that members of listed marine species are not killed or injured as a result of the fishing; and</p> <p>(g) the fishery to which the plan, regime or policy relates does not, or is not likely to, adversely affect the conservation status of a listed marine species or a population of that species.</p>	<p>The Northern Prawn Fishery will be managed under the Northern Prawn Fishery Management Plan 1995 in force under the <i>Fisheries Management Act 1991</i>.</p> <p>The Northern Prawn Fishery Management Plan 1995 was accredited under section 265 (Part 13), for listed marine species, in January 2006. While there have been amendments to the plan since that time, those amendments do not materially change the requirement to take steps to ensure that members of listed marine species are not killed or injured as a result of the fishing (see section 208A - listed threatened species - above).</p> <p>The fishery has been shown to interact with sea snakes which are listed marine species. However, the results from the ecological risk assessments, taking into account the measures in place in the fishery which act to prevent mortality to protected species, do not report any sea snake species or other listed marine species at risk from fishing.</p> <p>Given:</p> <ul style="list-style-type: none">• that spatial and temporal closures protect critical habitat and act to reduce the impact of fishing on sea snakes and other listed marine species• the results of the ecological risk assessments, and• commitments in the Northern Prawn Fishery Bycatch and Discarding Workplan: January 2012 – January 2014 to develop improved mitigation of sea snake interactions, <p>the Department considers the current operation of the Northern Prawn Fishery is not likely to adversely affect the conservation status of a listed marine species or a population of that species.</p>

Part 13 (cont.)

Section 303AA Conditions relating to accreditation of plans, regimes and policies	The Department's assessment of the Northern Prawn Fishery
(1) This section applies to an accreditation of a plan, regime or policy under section 208A, 222A, 245 or 265.	The Department recommends that the Northern Prawn Fishery Management Plan 1995 be accredited under sections 208A, 222A, 245 and 265.
(2) The Minister may accredit a plan, regime or policy under that section even though he or she considers that the plan, regime or policy should be accredited only: (a) during a particular period; or (b) while certain circumstances exist; or (c) while a certain condition is complied with. In such a case, the instrument of accreditation is to specify the period, circumstances or condition.	The Department considers that no conditions are required for the accreditation of the Northern Prawn Fishery Management Plan 1995.
(7) The Minister must, in writing, revoke an accreditation if he or she is satisfied that a condition of the accreditation has been contravened.	

Part 13A

Section 303BA Objects of Part 13A

(1) The objects of this Part are as follows:

- (a) to ensure that Australia complies with its obligations under CITES² and the Biodiversity Convention;
- (b) to protect wildlife that may be adversely affected by trade;
- (c) to promote the conservation of biodiversity in Australia and other countries;
- (d) to ensure that any commercial utilisation of Australian native wildlife for the purposes of export is managed in an ecologically sustainable way;
- (e) to promote the humane treatment of wildlife;
- (f) to ensure ethical conduct during any research associated with the utilisation of wildlife; and
- (h) to ensure the precautionary principle is taken into account in making decisions relating to the utilisation of wildlife.

Section 303DC Minister may amend list	The Department of the Environment's assessment of the Northern Prawn Fishery
<p>(1) Minister may, by instrument published in the Gazette, amend the list referred to in section 303DB (list of exempt native specimens) by:</p> <ul style="list-style-type: none">(a) including items in the list;(b) deleting items from the list; or(c) imposing a condition or restriction to which the inclusion of a specimen in the list is subject; or(d) varying or revoking a condition or restriction to which the inclusion of a specimen in the list is subject; or(e) correcting an inaccuracy or updating the name of a species.	<p>The Department recommends that product from the Northern Prawn Fishery be included in the list of exempt native specimens until 9 January 2019.</p>

² Convention on International Trade in Endangered Species of Wild Fauna and Flora

Section 303DC Minister may amend list	The Department of the Environment's assessment of the Northern Prawn Fishery
<p>(1A) In deciding whether to amend the list referred to in section 303DB (list of exempt native specimens) to include a specimen derived from a commercial fishery, the Minister must rely primarily on the outcomes of any assessment in relation to the fishery carried out for the purposes of Division 1 or 2 of Part 10.</p>	<p>The impact of actions under the Northern Prawn Fishery Management Plan 1995 was assessed under Part 10 of the EPBC Act in December 2003. That assessment concluded that actions taken in the Northern Prawn Fishery would not have an unacceptable or unsustainable impact on the environment in a Commonwealth marine area in the short to medium term.</p> <p>Since that time:</p> <ul style="list-style-type: none"> • effort in the fishery has been reduced though licence buy backs • ecological risk assessments for target, byproduct and bycatch species and habitats and communities have been undertaken and an ecological risk management strategy implemented. The ecological risk management strategy was updated in 2012. • prawn stocks previously considered overfished have rebuilt and are now considered not overfished and not subject to overfishing • harvest strategies, which operate to prevent overfishing, have been developed for target and byproduct species, and • further development and implementation of a range of bycatch reduction devices has occurred.

Section 303DC Minister may amend list	The Department of the Environment's assessment of the Northern Prawn Fishery
<p>(1C) The above does not limit the matters that may be taken into account in deciding whether to amend the list referred to in section 303DB (list of exempt native specimens) to include a specimen derived from a commercial fishery.</p>	<p>It is not possible to list exhaustively the factors that you may take into account in amending the list of exempt native specimens. The objects of Part 13A, which are set out above this table, provide general guidance in determining factors that might be taken into account. A matter that is relevant to determining whether an amendment to the list is consistent with those objects is likely to be a relevant factor.</p> <p>The Department considers that the amendment of the list of exempt native specimens to include product taken in the Northern Prawn Fishery until 9 January 2019 would be consistent with the objects of Part 13A (listed above) as:</p> <ul style="list-style-type: none"> • the fishery will not harvest any CITES listed species • there are management arrangements in place to ensure that the resource is being managed in an ecologically sustainable way (see Table 1) • the operation of the Northern Prawn Fishery during the recommended period of inclusion in the list of exempt native specimens (five years) is unlikely to be unsustainable or threaten biodiversity, and • the Environment Protection and Biodiversity Conservation Regulations 2000 do not specify fish as a class of animal in relation to the welfare of live specimens.

Section 303DC Minister may amend list	The Department of the Environment's assessment of the Northern Prawn Fishery
<p>(3) Before amending the list referred to in section 303DB (list of exempt native specimens), the Minister:</p> <ul style="list-style-type: none"> (a) must consult such other Minister or Ministers as the Minister considers appropriate; and (b) must consult such other Minister or Ministers of each State and self-governing Territory as the Minister considers appropriate; and (c) may consult such other persons and organisations as the Minister considers appropriate. 	<p>The Department considers that the consultation requirements have been met.</p> <p>On 10 August 2004, the then Minister for the Environment and Heritage wrote to all fisheries ministers seeking their views on inclusion of product derived from commercial fisheries in the list of exempt native specimens, while subject to declaration as approved wildlife trade operations. Responses in support of the proposal were received from all state and territory fisheries ministers and the Commonwealth minister.</p> <p>The 2013 application for the Northern Prawn Fishery received from the Australian Fisheries Management Authority was released for public comment from 22 October to 22 November 2013. The public comment period sought comment on:</p> <ul style="list-style-type: none"> • the proposal to amend the list of exempt native specimens to include product derived from the Northern Prawn Fishery, and • the Australian Fisheries Management Authority's application. <p>One comment was received and has been considered in preparing advice about the amendment of the list of exempt native specimens to include product derived from the Northern Prawn Fishery.</p>
<p>(5) A copy of an instrument made under section 303DC is to be made available for inspection on the Internet.</p>	<p>The instrument for the Northern Prawn Fishery made under section 303DC will be gazetted and made available through the Department's website.</p>

Part 12

Section 176 Bioregional Plans	The Department's assessment of the Northern Prawn Fishery
<p>(5) Subject to this Act, the Minister must have regard to a bioregional plan in making any decision under this Act to which the plan is relevant.</p>	<p>The area of the Northern Prawn Fishery encompasses the North Marine Region and the easternmost portion of the North-west Marine Region. The <i>Marine Bioregional Plan for the North Marine Region 2012</i> and the <i>Marine Bioregional Plan for the North-west Marine Region 2012</i> identify a number of regional priorities for which bycatch from commercial fishing is considered to be a pressure 'of concern' or 'of potential concern'. These include marine turtles, inshore dolphins, sawfishes and river sharks, dugong and sea snakes</p> <p>Through the <i>Northern Prawn Fishery – Bycatch and Discarding Workplan, January 2012 – January 2014</i>, management measures are in place, and are continuously being reviewed, with the aim of reducing the total amount of bycatch and minimising the impact on species caught incidentally (see Table 1). The ecological risk assessments for the Northern Prawn Fishery produced a list of three priority species for the fishery (none of which are assessed as of concern or of potential concern in the North or North-west marine regions) which are addressed through ecological risk management strategies in the fishery, including actions in the bycatch and discarding workplan.</p>

Part 16

Section 391 Minister must consider precautionary principle in making decisions	The Department's assessment of the Northern Prawn Fishery
<p>(1) The Minister must take account of the precautionary principle in making a decision under section 303DC and/or section 303FN, to the extent he or she can do so consistently with the other provisions of this Act.</p>	<p>The precautionary principle has been considered in preparing advice about the amendment of the list of exempt native specimens under section 303DC.</p>
<p>(2) The precautionary principle is that lack of full scientific certainty should not be used as a reason for postponing a measure to prevent degradation of the environment where there are threats of serious or irreversible environmental damage.</p>	

The Department of the Environment's final recommendations to the Australian Fisheries Management Authority for the Commonwealth Northern Prawn Fishery

The material submitted by the Australian Fisheries Management Authority indicates that the Northern Prawn Fishery operates in accordance with the Australian Government *Guidelines for the Ecologically Sustainable Management of Fisheries - 2nd Edition*.

Over the past several years the Australian Fisheries Management Authority has been investigating moving the Northern Prawn Fishery to output based individual transferable quota management, in line with the Ministerial Direction delivered to AFMA in 2005 which outlined that the long standing Australian government position to manage all Commonwealth fisheries through output controls should be implemented, '*unless there is a strong case that can be made, on a fishery by fishery basis, that this would not be cost effective or would be otherwise detrimental*'. In late 2013, the Australian Fisheries Management Authority agreed to implement long term managements for the Northern Prawn Fishery based on an individual transferable effort management system.

Stock Status

The Department of the Environment considers that the range of management measures in place in the Northern Prawn Fishery (summarised in Table 1) is sufficient to ensure that the fishery is conducted in a manner that does not lead to over-fishing and that stocks are not currently overfished. Woodhams and George (2013) categorise five of the six key target species in the fishery as not overfished and not subject to overfishing (red endeavour prawns are classified as uncertain).

Ecosystem Impacts

Taking into account the ecological risk assessment and the management measures for target, byproduct and bycatch species outlined in Table 1, including the mandatory requirements for all trawl operators to use turtle excluder devices and bycatch reduction devices, the Department considers that the fishing operations in the Northern Prawn Fishery are managed to minimise their impact on the structure, productivity, function and biological diversity of the ecosystem.

Conclusion

The Department believes that product taken in the Northern Prawn Fishery should be exempt from the export controls of Part 13A of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), with that exemption to be reviewed in five years. To contain and minimise the risks in the longer term the recommendations listed in Table 4 have been made.

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TABLE 4: COMMONWEALTH NORTHERN PRAWN FISHERY ASSESSMENT – SUMMARY OF ISSUES AND RECOMMENDATIONS - DECEMBER 2013

Issue	Recommendation
<p>General Management</p> <p>Export decisions relate to the arrangements in force at the time of the decision. To ensure that these decisions remain valid and export approval continues uninterrupted, the Department of the Environment needs to be advised of any changes that are made to the management regime and make an assessment that the new arrangements are equivalent or better, in terms of ecological sustainability, than those in place at the time of the original decision. This includes operational and legislated amendments that may affect sustainability of the target species or negatively impact on byproduct, bycatch, protected species or the ecosystem.</p>	<p>Recommendation 1:</p> <p>Operation of the Northern Prawn Fishery will be carried out in accordance with the management regime in force under the <i>Fisheries Management Act 1991</i>, <i>Fisheries Management Regulations 1992</i> and the <i>Northern Prawn Fishery Management Plan 1995</i>.</p> <p>Recommendation 2:</p> <p>The Australian Fisheries Management Authority to inform the Department of the Environment of any intended amendments to the Northern Prawn Fishery management arrangements that may affect the criteria on which <i>Environment Protection and Biodiversity Conservation Act 1999</i> decisions are based.</p>
<p>Annual Reporting</p> <p>It is important that reports be produced and presented to the Department annually in order for the performance of the fishery and progress in implementing the recommendations in this report and other managerial commitments to be monitored and assessed throughout the life of the declaration. Annual reports should include a description of the fishery, management arrangements in place, research and monitoring outcomes, recent catch data for all sectors of the fishery, status of target stock, interactions with protected species, impacts of the fishery on the ecosystem in which it operates and progress in implementing the recommendations resulting from the previous assessment of the fishery (for a complete description of annual reporting requirements, see Appendix B of the <i>Guidelines for the Ecologically Sustainable Management of Fisheries - 2nd edition</i>, available from the Department's website at: http://www.environment.gov.au/coasts/fisheries/publications/guidelines.html).</p>	<p>Recommendation 3:</p> <p>The Australian Fisheries Management Authority to produce and present reports to the Department of the Environment annually as per Appendix B to the <i>Guidelines for the Ecologically Sustainable Management of Fisheries – 2nd Edition</i>.</p>

Issue	Recommendation
<p><i>Bycatch and protected species</i></p> <p><i>Background</i></p> <p>Prawn trawling is one of the least selective methods of fishing and an inherent characteristic of tropical prawn trawl fisheries is a high ratio of bycatch to retained catch, with high proportions of fin fish and elasmobranchs (sharks and rays) (Haywood et.al., 2005). Prior to the introduction of bycatch reduction devices, bycatch:catch ratios ranging from 2:1 to 20:1 were reported from the Northern Prawn Fishery (Pender et.al. 1992 cited in Haywood et.al. 1995). Stobutski et.al. (2000) found considerable regional and temporal variations in bycatch rates and composition. As a result, bycatch volumes in the Northern Prawn Fishery have proven hard to measure (Fry et.al. 2013).</p> <p>The first Bycatch Action Plan for the Northern Prawn Fishery was introduced in 1998. The Northern Prawn Management Advisory Committee (NORMAC) estimates that, across the fishery, a more than 50 per cent reduction in bycatch has been achieved since that time as a result of effort reductions, the implementation of spatial and temporal closures and the introduction of the mandatory use of bycatch reduction devices (BRDs) and turtle excluder devices (TEDs) (AFMA 2011, Fry and Miller 2013).</p> <p>The use of turtle excluder devices and bycatch reduction devices has been compulsory in the Northern Prawn Fishery since 2001. Research into the effectiveness of bycatch reduction devices and turtle excluder devices has shown turtle excluder devices to be effective in reducing the capture and mortality of marine turtles and other large bycatch, in particular bycatch of sharks and rays and large sponges. Fry and Miller (2013) found that, overall, the effectiveness of bycatch reduction devices, designed to reduce bycatch of small finfish and invertebrates, is less conclusive.</p> <p>A number of management measures in place in the Northern Prawn Fishery contribute to minimising bycatch. These include:</p> <ul style="list-style-type: none"> • mandatory use of a turtle excluder device and bycatch reduction device • permanent closures to trawl fishing over seagrass beds - the majority of seagrass beds are closed permanently to prawn trawl fishing to provide protection of habitat, pre-spawning prawns, juvenile prawns and protected species • a permanent closure on daylight trawl fishing during the tiger prawn fishing season, and • seasonal closures. 	<p><i>Recommendation 4:</i></p> <p>The Australian Fisheries Management Authority to continue to:</p> <ol style="list-style-type: none"> a. work with industry on extending the results of recent bycatch reduction research relevant to the Northern Prawn Fishery with a particular focus on reducing interactions with species protected under the <i>Environment Protection and Biodiversity Conservation Act 1999</i>, and b. improve the accuracy of estimates of protected species interactions in the fishery, including species level identification. Particular attention should be given to increasing the accuracy of information on interactions with sawfish and sea snake species.

Issue	Recommendation
<p>Extensive research and a series of ecological risk assessments have focussed on the sustainability of bycatch species and identified those species remaining at risk from fishing (AFMA 2013). There is an ongoing commitment from the Australian Fisheries Management Authority and the Northern Prawn Fishery Industry Pty Ltd (NPF) to continued research and development of bycatch mitigation. The aim of the <i>Northern Prawn Fishery - Bycatch and discarding workplan - January 2012 – January 2014</i> (AFMA 2011) is to develop strategies that will:</p> <ul style="list-style-type: none"> • respond to high ecological risks assessed through the Australian Fisheries Management Authority’s Ecological Risk Assessment for the Effect of Fishing (ERAEF) and other assessment processes • avoid interactions with species listed under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act) • reduce discarding of target species to as close to zero as practically possible, and • minimise overall bycatch in the Northern Prawn Fishery over the long term. <p>The Australian Fisheries Management Authority has advised that a new bycatch and discarding workplan for the fishery will be developed in consultation with stakeholders prior to the 2014 fishing season.</p> <p><i>Improvements in Bycatch Mitigation</i></p> <p>While the Northern Prawn Fishery has seen a substantial reduction in protected species interactions since the introduction of mandatory turtle excluder devices and bycatch reduction devices into the fishery, sea snake interaction rates remain considerably higher than other groups of protected species encountered in the fishery. All sea snake species are protected as listed marine species under the EPBC Act.</p> <p>Improving the effectiveness of turtle excluder devices and bycatch reduction devices is a current focus of both NPF and the Australian Fisheries Management Authority, with a specific focus from the Australian Fisheries Management Authority’s Bycatch Program. The program is currently working with industry on a major extension project to increase the effectiveness of current bycatch reduction device designs. The Department recommends that the Australian Fisheries Management Authority investigate measures to encourage increased adoption of bycatch mitigation technologies and methods which have demonstrated substantial reductions in protected species (and small bycatch species) landings (Recommendation 1a).</p>	

Issue	Recommendation
<p data-bbox="129 204 676 236"><i>Recording Protected Species Interactions</i></p> <p data-bbox="129 268 1415 651">In the 2003 Australian Government assessment of the Northern Prawn Fishery, the Department recommended that the Australian Fisheries Management Authority ensure that sea snake, sawfish and ray species receive ongoing monitoring and attention in future refinements of bycatch mitigation measures, with particular attention on large headed sea snake (<i>Hydrophis pacificus</i>) and spectacled sea snake (<i>Disteira kingii</i>), green sawfish (<i>Pristis zijsron</i>) and narrow sawfish (<i>Anoxypristis cuspidata</i>). The Department notes that since that time, improvements have been achieved in threatened species reporting in the fishery logbooks and the Australian Fisheries Management Authority has implemented the scientific observer program to monitor threatened species interactions in the fishery. The Australian Fisheries Management Authority has also commissioned research into trialling new bycatch reduction devices.</p> <p data-bbox="129 683 1406 954">Green sawfish were listed as a threatened species under the EPBC Act in 2008 in the vulnerable category, while narrow sawfish are not protected under the EPBC Act. Therefore, accurately distinguishing between these species is important in providing confidence that fishing activities do not hinder the recovery of green sawfish (and other related listed sawfish and river shark species). Accurate identification is an objective of the draft recovery plan for sawfish and river sharks. The Department anticipates that the draft recovery plan will be released for public consultation in early 2014.</p> <p data-bbox="129 986 1411 1136">As noted above, the rate of interaction with sea snakes (listed marine species) as a species group remains high. Less is known, however, about specific interaction rates for individual species in relation to their population and distribution in the fishery. This reduces confidence in any prediction of risks to sea snake species from fishing.</p> <p data-bbox="129 1168 1415 1401">The Department notes that protected species interactions are recorded through logbooks and the scientific and crew member observer programs. Scientific and crew member observers receive species level identification training and logbooks require fishers to report turtle and sawfish interactions to species level. Although logbooks contain sawfish identification guides, the majority of current sawfish interaction recordings are not categorised by species and sea snake interactions are not required to be reported by individual species.</p>	

Issue	Recommendation
<p>Given the frequency of sea snake interactions recorded in the fishery to date and the potential for injury to crew members attempting to identify sea snakes, the Department recognises that species level identification of sea snakes may not be feasible at this stage. However, the Department considers that species level reporting of all protected species interactions would be beneficial to current and future research into the mitigation of protected species landings in the fishery.</p> <p>The Department therefore recommends that AFMA continue to investigate methods of improving species level reporting for protected species interactions in the fishery with particular attention to sawfish and sea snakes(Recommendation 1b).</p>	

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ACRONYMS

ABARES	Australian Bureau of Agricultural and Resource Economics and Sciences
AFMA	Australian Fisheries Management Authority
BRD	Bycatch Reduction Device
CITES	Convention on International Trade in Endangered Species of Wild Flora and Fauna
CMO	Crew Member Observer
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DEWHA	Department of the Environment, Water, Heritage and the Arts
DSEWPaC	Department of Sustainability, Environment, Water, Population and Communities
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
ERA	Ecological Risk Assessment
ERM	Ecological Risk Management
FRDC	Fisheries Research and Development Corporation
ITQ	Individual Transferable Quota
NORMAC	Northern Prawn Management Advisory Committee
NPF	Northern Prawn Fishery
NPFI	Northern Prawn Fishery Industry Pty Ltd
SAFE	Sustainability Assessment of Fishing Effects
SFR	Statutory Fishing Right
TED	Turtle Excluder Device
TEP	Threatened, Endangered and Protected