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Australia Northern Prawn Fishery

3rd Surveillance Report

Prepared for
Prepared for NPF Industry Pty Ltd

Certificate No: **MSC-F-31347**

MRAG Americas, Inc.
November 2021

Conformity Assessment Body (CAB)	MRAG Americas, Inc.
Assessment team	Richard Banks, Kevin McLoughlin and Mihaela Zaharia
Fishery client	NPF Industry Pty Ltd
Assessment Type	Third Surveillance
Date	09 November 2021 (Revised 21 June 2022)

Contents

1 Glossary

AFMA	Australian Fisheries Management Authority
AFZ	Australian Fishing Zone
B_{MSY}	Biomass at Maximum Sustainable Yield
BRD	Bycatch Reduction Device
CFIN	Commonwealth Fisheries Infringement Notice
CMO	Crew Member Observer Program
CPUE	Catch Per Unit Effort
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DAWR	Department of Agriculture, Water and the Environment
EEZ	Exclusive Economic Zone
E_{MEY}	Fishing effort to produce Maximum Economic Yield
E_{MSY}	Fishing effort which should produce Maximum Sustainable Yield
EPBC Act	Environment Protection and Biodiversity Conservation Act
ERA	Ecological Risk Assessment
ERAEF	Ecological Risk Assessment for Effect of Fishing
ERM	Ecological Risk Management
ESD	Ecologically Sustainable Development
ETP	Endangered, Threatened and Protected species
FCR	Fishery Certification Requirements
FMA	Fisheries Management Act
F_{MSY}	Fishing mortality rate at Maximum Sustainable Yield
HCR	Harvest Control Rule
HS	Harvest Strategy
HSP	(Commonwealth) Harvest Strategy Policy
JBG	Joseph Bonaparte Gulf
LRP	Limit Reference Point
MAC	Management Advisory Committee
MEY	Maximum Economic Yield
MICE	Models of Intermediate Complexity for Ecosystem
MSC	Marine Stewardship Council
MSE	Management Strategy Evaluation
MSY	Maximum Sustainable Yield
NAWRA	Northern Australia Water Resource Assessment
NER	Net Economic Return
NORMAC	Northern Prawn Management Advisory Committee
NPF	Northern Prawn Fishery
NPFI	Northern Prawn Fishery Industry Pty Ltd
NPRAG	Northern Prawn Resource Assessment Group
PSA	Productivity-Susceptibility Analysis
RBF	Risk Based Framework
SAFE	Sustainability Assessment of Fishing Effects
S_{MSY}	Spawner biomass at MSY
TED	Turtle Excluder Device
TEP	same as ETP
TRP	Target Reference Point
UoA	Unit of Assessment
UoC	Unit of Certification

2 Executive summary

This report outlines the process and outcome of the 3rd annual surveillance audit for the MSC certified Australian Northern Prawn Fishery (NPF), following re-certification in January 2018. The fishery has been certified since 2012. The current certificate ends in July 2023.

The surveillance audit was announced on the MSC website on 28 September 2021. The site visit for the audit was conducted remotely 28 October 2021 due to Covid-19 impacts. No stakeholder submissions were received for the audit.

The surveillance audit finds that progress is being made against the requirements of the three conditions of certification and the status of the conditions is *on target*. There are no changes to the target stocks information, ecosystem information or governance that impact upon the current status of the three UoA fisheries certification.

MRAG Americas confirms that this fishery continues to meet the MSC Fisheries Standard and shall remain certified.

3 Report details

3.1 Surveillance information

Table 1. Surveillance information

1	Fishery name	
	Australia Northern Prawn Fishery	
2	Unit(s) of Assessment (UoA)	
UoA 1-6	White banana prawn *(Fenneropenaeus merguiensis);* Blue endeavour prawn *(Metapenaeus endeavouri)* Brown tiger prawn (*Penaeus esculentus);* Red endeavour prawn *(M. ensis)* Grooved tiger prawn *(P. semisulcatus);* Red (banana) prawn *(F.indicus)* Twin, quad or triple rig otter trawl The Northern Prawn Fishery (NPF) occupies an area of 771,000 km2 off Australia's northern coast. The Fishery extends from the low water mark to the outer edge of the Australian fishing zone (AFZ) along approximately 6,000 km of coastline between Cape York in Queensland 142°09' 00" E and Cape Londonderry in Western Australia 126° 58' 00" E.	
3	Date certified	Date of Expiry
	19 January 2018	18 July 2023
4	Surveillance level and type	
	Surveillance level 3, off-site surveillance due to the ongoing Covid-19 pandemic.	
5	Surveillance number	
	1st Surveillance	
	2nd Surveillance	
	3rd Surveillance	X

	4th Surveillance	
	Other (expedited etc.)	
6	Team leader	
	Richard Banks served as lead assessor. Richard Banks has considerable MSC experience having served as the Lead Assessor for four Australian prawn trawl assessments, including Spencer Gulf, and on the PNA free school skipjack full assessment. Richard has also designed several fishery improvement plans in South East Asia and the Pacific, and acted as external reviewer to a number of MSC assessments on behalf of WWF. Richard currently works as an advisor to FFA, MFMR, and PNA as an offshore tuna advisor. Richard is an economist and fisheries management and policy programming specialist having worked on similar issues for international agencies, Commonwealth and State Fisheries. Richard holds a bachelor degree in Fisheries Economics and a Masters in Agricultural Economics from the University of Portsmouth, and Imperial College, London, respectively. MRAG Americas confirms that Mr. Banks meets the competency criteria in Annex PC for team leader as follows: • He has an appropriate university degree and more than five years' experience in management and research in fisheries; • He has passed the MSC team leader training; • He has the required competencies described in Table PC1, section 2; • He meets ISO 19011 training requirements; • He has undertaken two fishery assessments as a team member in the last five years, and • He has experience in applying different types of interviewing and facilitation techniques and is able to effectively communicate with clients and other stakeholders. In addition, he has the appropriate skills and experience required to serve as a Principle 3 assessor as described in FCP Annex PC table PC3.	
7	Team members	
	Dr. Kevin McLoughlin works as a fisheries consultant. His recent work includes Marine Stewardship Council assessment and peer review. In addition, he has undertaken review of fisheries assessed under the World Wildlife Fund Common Wild Capture Fishery Methodology. Previously as a Senior Fisheries Scientist with the Bureau of Rural Sciences he has engaged in a wide range of international and domestic fisheries management and policy. Kevin represented BRS on many committees and groups such as Australian Fishery Management Authority fishery assessment groups (including for the Southern and Eastern Scalefish and Shark Fishery, the Northern Prawn Fishery, the Bass Strait Scallop Fishery, and the Western Tuna and Billfish Fishery), DAFF's Shark Implementation Group for implementation of the National Plan of Action for Sharks, and others. He represented Australia on scientific issues at the Indian Ocean Tuna Commission and was Chair of the IOTC Working Party on Ecosystems and Bycatch for its first 3 meetings. In 2006 he chaired the meeting of the Working Party on Billfish led Australia's delegation during 2 weeks of scientific meetings of the Commission for the Conservation of Southern Bluefin Tuna in Tokyo. In 2008, he represented Australia at a meeting to progress the Regional Plan of Action to Promote Responsible Fishing Practices including Combating IUU Fishing in Bangkok and presented Australia's cooperative approaches with Indonesia to research and manage shared snapper stocks in the Arafura/Timor Seas. These responsibilities required a high level of interaction with policy and industry clients, and with international organizations. An important aspect of his work is to be able to translate complex fisheries information to a range of audiences.	

	MRAG Americas confirms that Dr. McLoughlin meets the competency criteria in Annex PC for team members as follows: • He has an appropriate university degree and more than five years' experience in management and research in fisheries; • He has undertaken at least two MSC fishery assessments or surveillance site visits in the last five years; and • He is able to score a fishery using the default assessment tree and describe how conditions are set and monitored. In addition, he has the appropriate skills and experience required to serve as a Principle 1 assessor as described in FCP Annex PC table PC3, and MRAG Americas confirms he has no conflicts of interest in relation to the fishery under assessment. **Ms. Mihaela Zaharia** earned her M Sc. In biological and Ecosystem Sciences. Her relevant experience includes involvement as a marine science researcher for Poseidon Aquatic Resources Management Consultants Ltd and National Institute for Marine Research and Development (Gr. Alntipa). Ms. Zaharia has also participated in a number of assessments and Fisheries Improvement Plans and prepared Risk Based Framework templates for the MSC. In addition to her employment history, Ms. Zaharia has also contributed several publications on fishery biology and science. MRAG Americas confirms that Dr. McLoughlin meets the competency criteria in Annex PC for team members as follows: • She has an appropriate university degree and more than five years' experience in management and research in fisheries; • She has passed the MSC traceability module; • She has undertaken at least two MSC fishery assessments or surveillance site visits in the last five years; and • She is able to score a fishery using the default assessment tree and describe how conditions are set and monitored. In addition, she has the appropriate skills and experience required to serve as a Principle 2 assessor as described in FCP Annex PC table PC3, and MRAG Americas confirms he has no conflicts of interest in relation to the fishery under assessment. The whole assessment team collectively meets the requirements as described in FCP Annex PC table PC3. A discussion between team members regarding conflict of interest and biases was held via telephone conference call and none were identified.
8	Audit/review time and location
	28 October 2021; off-site meeting
9	Assessment and review activities
	The surveillance reviewed changes in science and management as well as progress in closing out conditions.

10	Stakeholder opportunities
	Stakeholders were invited to participate in the site visit remotely or provide information considered relevant, including knowledge and concerns about the fishery.

3.2 Background

The NPF is located in the Australian EEZ, but also inside the boundaries of the States of Northern Territory, Queensland and Western Australia. The fishery uses twin, triple and quad otter trawl to target brown tiger prawns (*Penaeus esculentus*), grooved tiger prawns (*P. semisulcatus*), blue endeavour prawns (*Metapenaeus endeavouri*), red endeavour prawns (*M. ensis*), white banana prawns (*Fenneropenaeus merguiensis*) and red-legged banana prawns (*F. indicus*).

The fishery is managed by the Australian Fisheries Management Authority (AFMA) in accordance with the *Fisheries Management Act 1991* (FMA), *Fisheries Management Regulations 1992*, Fisheries Administration Act 1991 and *Fisheries (Administration) Regulations 1992*. Commonwealth-managed fisheries are also subject to aspects of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and the *Environment Protection and Biodiversity Conservation Regulations 2000*. In particular, fisheries are periodically assessed for compliance with the Guidelines for the Ecologically Sustainable Management of Fisheries. The NPF was re-accredited under this legislation for 5 years from January 2019.

Vessels in the NPF may tow a range of nets in a variety of configurations. These are regulated by the *Northern Prawn Fishery Management Plan 1995* (the Management Plan) and relevant determinations. In addition to the main nets, a small "try-net" is used to test the potential catches for a given area. All trawl nets (other than try-nets) in the NPF are required to be fitted with approved Turtle Excluder Devices (TEDs) and Bycatch Reduction Devices (BRDs).

The fishery is conducted by members of the Northern Prawn Fishery Industry Pty Ltd (NPFI). There are 52 vessels in the fishery. Most of the vessels are purpose built steel boats and range in length from 17 to 30 m. The NPF comprises three distinct sub-fisheries: the banana prawn trawl sub-fishery, operating from 1 April to mid-June; the tiger prawn multispecies sub-fishery (targeting brown tiger prawn, grooved tiger prawn, blue endeavour prawn, and red endeavour prawn), operating from 1 August until late November (with closure depending on catch rates); and the Joseph Bonaparte Gulf (JBG) red-legged banana prawn sub-fishery operating during the banana prawn and tiger prawn sub-fishery open seasons (with a recent change such that the JBG fishery operates only during the tiger prawn sub-fishery season). There is no fishing throughout the area during the two closed seasons each year (1st December to 1st April, and 15th June to 1st August).

The total NPF prawn catch for 2020 was 4712 t compared to 8549 t in 2019 (Laird 2021). Landings of banana prawn (white and red-legged) totalled 2969 t in 2020, down from 5741 t in 2019. The two tiger prawns (brown and grooved) totalled 1368 t in 2020 compared with 2088 t in 2019, and endeavour prawns (blue and red) totalled 365 t in 2020 compared with 667 t in 2019. Other retained catches in 2020 included 10 t of king prawns, 30 t of scampi, 16 t of bugs, 8 t of squid, 6 t of cuttlefish, 0.5 t of scallops, and smaller quantities of other species.

There were 76 fishing days available during the first season and 112 days available during the second season (a total of 188 for the year). The second season closed early due to lower catches and the early closure decision rule being triggered. Catches by species are shown in Figure 1.

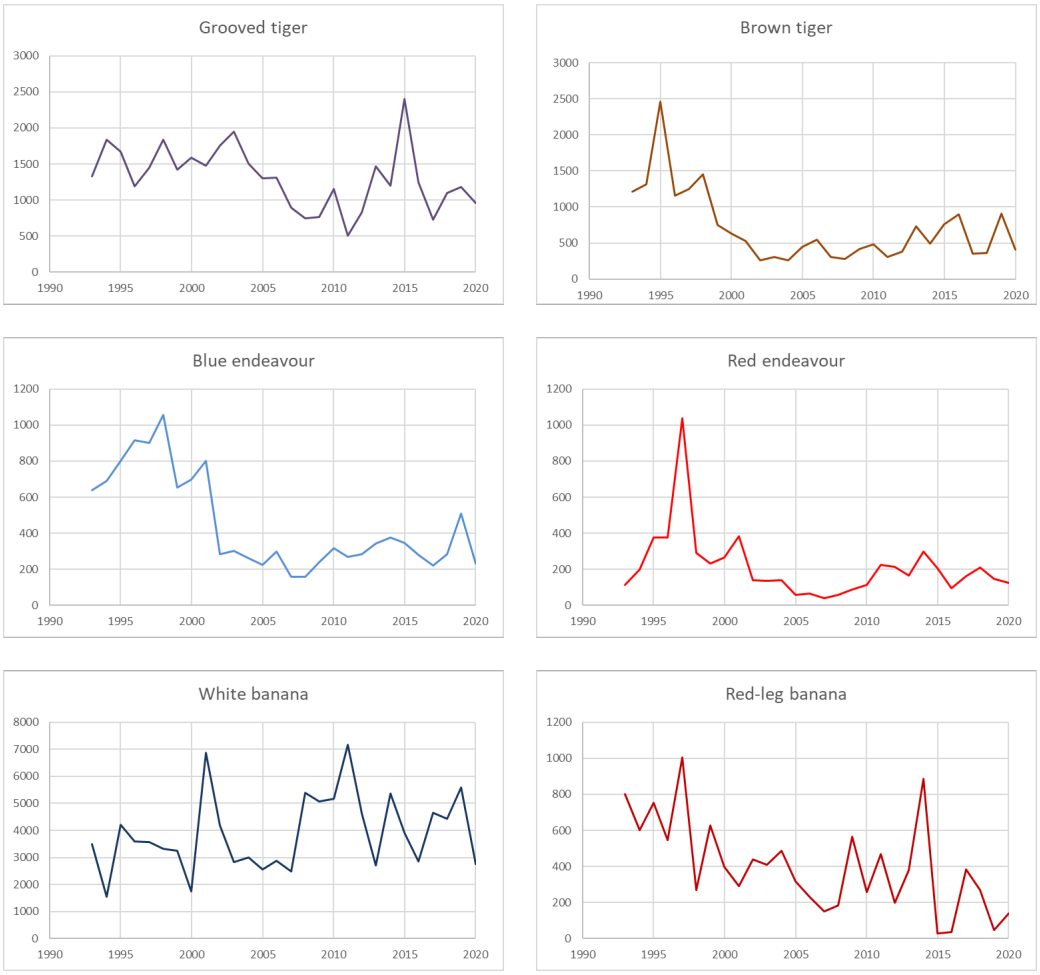

Figure 1. Estimated annual catches (tonnes) by species for the NPF, 1993-2020

3.3 Update on Target Stocks

3.3.1 Stock status

Updates to the stock status for the target species are presented at meetings of the Northern Prawn Fishery Resource Assessment Group (NPRAG) and the Northern Prawn Management Advisory Committee (NORMAC).

White banana prawn sub-fishery

White banana prawn

As discussed in the PCR for the fishery, annual yields of white banana prawn are largely dependent on annual recruitment and recruitment is associated with seasonal rainfall and food availability. It has not been possible to develop a stock assessment for white banana prawn (MRAG, 2018). The stock is managed through permitting sufficient prawns to escape to ensure an adequate spawning biomass for subsequent recruitment via closing the season when catch rates fall below a defined trigger level. There has been no change to this approach in recent years. See discussion of harvest strategy below.

Red-legged banana prawn sub-fishery

Red-legged banana prawn

The stock assessment for red-legged banana prawn was updated in 2020 (Plagányi et al., 2020), with a further inclusion of 2020 data in 2021 (Plagányi et al., 2021a). The assessment uses a stock production model; with quarterly time steps to represent the dynamics and the model is fitted to available catch and effort data. This assessment estimated spawning biomass (2143 t) to be below the target level (B_{MEY}) and below B_{MSY} but above the limit reference point. Variability about B_{MSY} is to be expected for short-lived

prawn stocks, but given the biomass levels are estimated to have been below the target level for several years there is a level of concern about the stock's sustainability (Figure 2) (Plagányi et al., 2021a). However, as discussed below, there has been a change to the harvest strategy whereby there is no fishing in JBG during the first fishing season. This change is anticipated to allow the stock to recover rapidly provided total effort doesn't greatly exceed the total allowable effort (TAE).

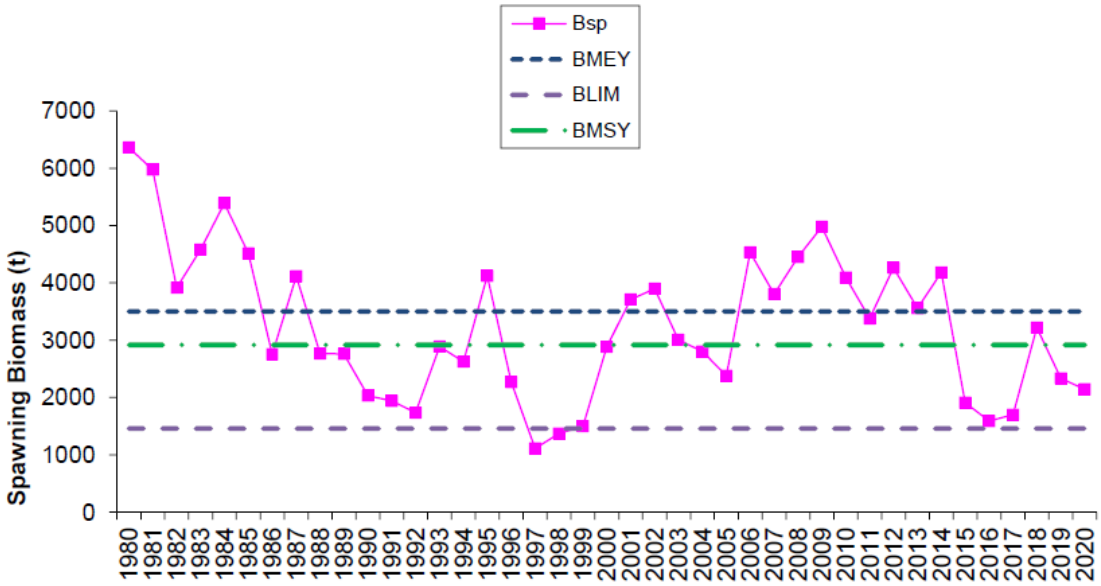

Figure 2. Total annual spawning biomass (t) trajectory using the Reference Case model for 1980 to 2020. The plot also shows the target spawning biomass level (B_{MEY}), the biomass level (B_{MSY}) corresponding to maximum sustainable yield (MSY) and limit reference level (B_{LIM}). Source: Plagányi et al., 2021a.

A management strategy evaluation framework has been developed to examine the performance of potential harvest control rules for the stock (Blamey et el., 2020).

Tiger prawn sub-fishery

The objective of the NPF harvest strategy is to attain the long term maximum economic yield (MEY). The most recently available stock assessment of the tiger prawn sub-fishery was undertaken in 2021 and includes data to 2019 (Deng et al., 2021). The stock assessment for the tiger prawn fishery uses a multispecies approach. The 2021 assessment ("Base Case" model) incorporated three complementary models:

- a multispecies, weekly sex- and size-structured population model for two species of tiger prawns;
- a Bayesian hierarchical biomass production model for blue endeavour prawns; and
- an economic model which calculates profit.

Findings from this assessment are summarized below, with a focus on the sustainability outcomes rather than MEY achievement.

<u>Brown tiger prawn</u>

The estimated spawning stock index for brown tiger prawns has increased since 2018. The base-case estimate of the brown tiger prawn spawner stock biomass at the end of 2019 as a percentage of spawner stock biomass at MSY (S_{2019}/S_{MSY}) was 139% (range across sensitivities examined was 109–139%) (Deng et al. 2021). The base case spawning stock size (S_Y) relative to S_{MSY} over time is shown in Figure 3.The 5-year average of spawner stock biomass S/S_{MSY} (130%) was well above the limit reference point ($0.5S_{MSY}$). Estimated effort in 2019 as a percentage of effort at MSY (E_{2019}/E_{MSY}) was 82%. Deng et al.

(2021) estimated MSY for brown tiger prawn to be 1113 t. It is concluded that the stock is not overfished or subject to overfishing.

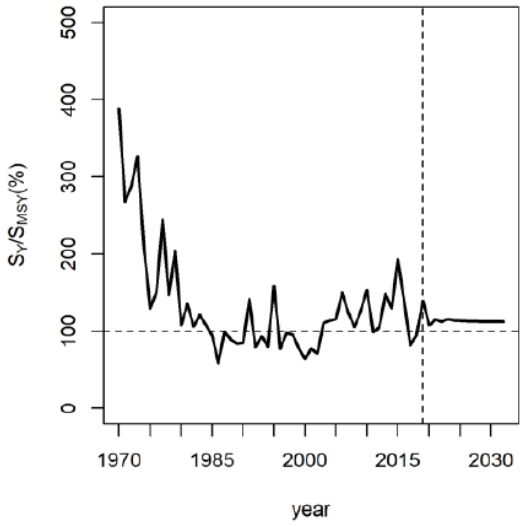

Figure 3. Brown tiger prawn spawning stock size relative to the spawning stock size at MSY. The vertical line indicates 2019. Values thereafter are the results of the estimated effort projections based on the bio-economic model used for the fishery. Source: Deng et al. 2021.

Grooved tiger prawn

For grooved tiger prawn the latest assessment base-case estimate of the size of the grooved tiger prawn spawner biomass at the end of 2019 as a percentage of spawner stock size at MSY (S_{2019}/S_{MSY}) was 121% (range across the sensitivities 103–123%) (Deng et al. 2021). The base case spawning stock size (S_Y) relative to S_{MSY} over time is shown in Figure 4. The 5-year average of spawner stock size S/S_{MSY} (129%) was well above the limit reference point ($0.5S_{MSY}$). Estimated effort in 2019 as a percentage of effort at MSY (E_{2019}/E_{MSY}) was 49%. MSY for grooved tiger prawn is estimated to be 1687 t. It is concluded that the stock is not overfished or subject to overfishing.

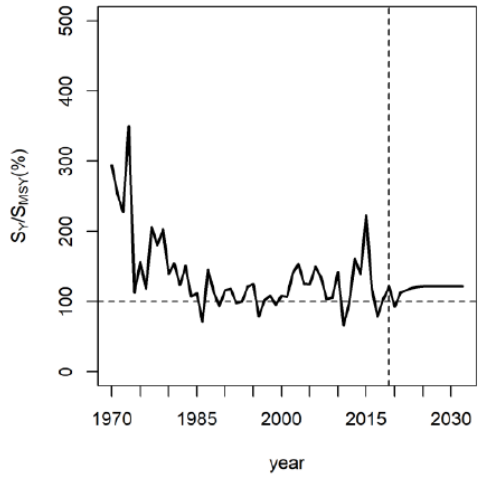

Figure 4. Grooved tiger prawn spawning stock size relative to the spawning stock size at MSY. The vertical line indicates 2019. Values thereafter are the results of the estimated effort projections based on the bio-economic model used for the fishery. Source: Deng et al. 2021.

Blue endeavour prawn

Blue endeavour prawn is a byproduct of the tiger prawn fishery, hence catches are linked to changes in effort targeting tiger prawns. For blue endeavour prawn the base-case estimate of the size of the blue endeavour prawn spawner stock at the end of 2019 as a percentage of stock size at MSY (S_{2019}/S_{MSY}) was 86% (with the range across sensitivities 84–113%) (Deng et al. 2021). The base case spawning stock size (S_Y) relative to S_{MSY} over time is shown in Figure 5. Further, the 5-year average of spawner stock sizes S/S_{MSY} ranged from 68% to 87%, above the limit reference point ($0.5S_{MSY}$), as required by the harvest strategy. Recent catches of blue endeavour prawn have been well below the estimated MSY of 752 t. It is concluded that the stock is not overfished or subject to overfishing.

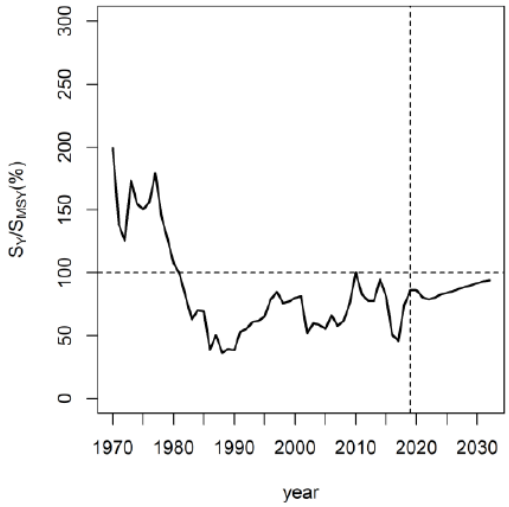

Figure 5. Blue endeavour prawn spawning stock size relative to the spawning stock size at MSY. The vertical line indicates 2019. Values thereafter are the results of the estimated effort projections based on the bio-economic model used for the fishery. Source: Deng et al. 2021.

Red endeavour prawn

Red endeavour prawns are also considered an economic bycatch of the tiger prawn fishery have not been included as part of the multispecies assessment in recent year. In the 2021 assessment red endeavour prawn have been considered as part of the sensitivity testing (referred to as the 4-species test) using a Bayesian biomass model (Deng et al. 2021). The modelled effort for the fishery (and costs associated with effort for the bioeconomic outputs) was driven by tiger prawn catches (thus the model assumed blue endeavour prawns and red endeavour in the sensitivity test were not "targeted"). The sensitivity testing indicated that the value of S_{2019}/S_{MSY} was at 90% (Figure 6). The sensitivity indicated that the five-year average of $S_{2015\text{-}2019}/S_{MSY}$ is at 113%, well above the LRP of $0.5S_{MSY}$. The result is considered preliminary due to the lack of red endeavour prawn life history parameter information.

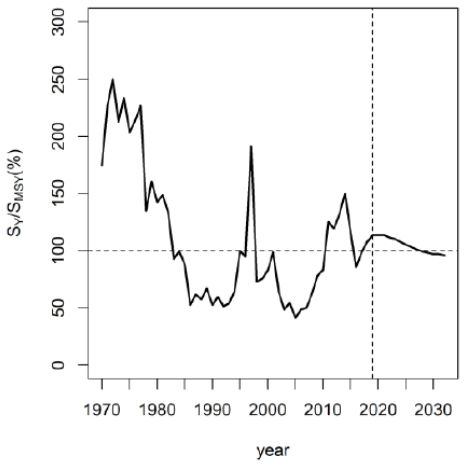

Figure 6. Red endeavour prawn spawning stock size relative to the spawning stock size at MSY. The vertical line indicates 2019. Values thereafter are the results of the estimated effort projections based on the bio-economic model used for the fishery. Source: Deng et al. 2021.

3.3.2 Harvest strategy

Detailed descriptions of the harvest strategy are provided in the PCR for the fishery (MRAG, 2018).

White banana prawn sub-fishery

The harvest strategy for white banana prawns includes, inter alia, an objective to allow sufficient escapement to ensure an adequate spawning biomass and to allow subsequent recruitment. This is achieved by closing the season when catch rates fall below a trigger level, associated with permitting sufficient prawns to escape to ensure an adequate spawning biomass for subsequent recruitment (based on an analysis of historical data. The trigger is also designed to achieve an economic outcome by closing fishing when catch rates fall to an uneconomical level.

In 2019, catch reports were received from 36 vessels. The average catch of banana prawns per boat per fishing day was 549 kg, in excess of the 425 kg per boat per fishing day catch trigger. All decision rules were met and the fishery remained open to both banana and tiger prawn fishing until the closing date of 15th June. Some tiger prawns were caught/reported in this period, however these were not included in the banana prawn catch analysis.

The details of the banana prawn harvest strategy and reporting requirements are described in Dichmont et al. (2021). There are three reporting periods defined in the strategy. In the first period for 2020, catch reports were received from 40 vessels (77% of the fleet), with an average catch of banana prawns per boat per fishing day of 612 kg, above the 425 kg per boat per fishing day catch trigger. For the second period catch reports were received from 36 vessels (69% of the fleet), with an average catch of 470 kg per boat per fishing day, again above the 425 kg trigger. All decision rules were met for these two periods, including the requirement for catch reports from 5 out of 6 NORMAC members and advisers. As a result, the fishery remained open. For the third reporting period the reporting requirements were not met. As per the harvest strategy requirements, the banana prawn sub-fishery closed on 9 June (rather than the scheduled 15 June), and fishing for tiger prawns east of 138ºE was halted.

Red-legged banana prawn sub-fishery

The red-legged banana prawn harvest strategy uses a proxy limit reference point (LRP) based on $0.5B_{MSY}$, which correlates with a catch of 390 kg per vessel per day. The LRP is deemed to have been breached if catch rates fall below 390 kg per vessel per day in August, September and October, and there has been at least 100 days fishing over the full fishing year. Additional detail on the harvest strategy is available in Dichmont et al. (2021).

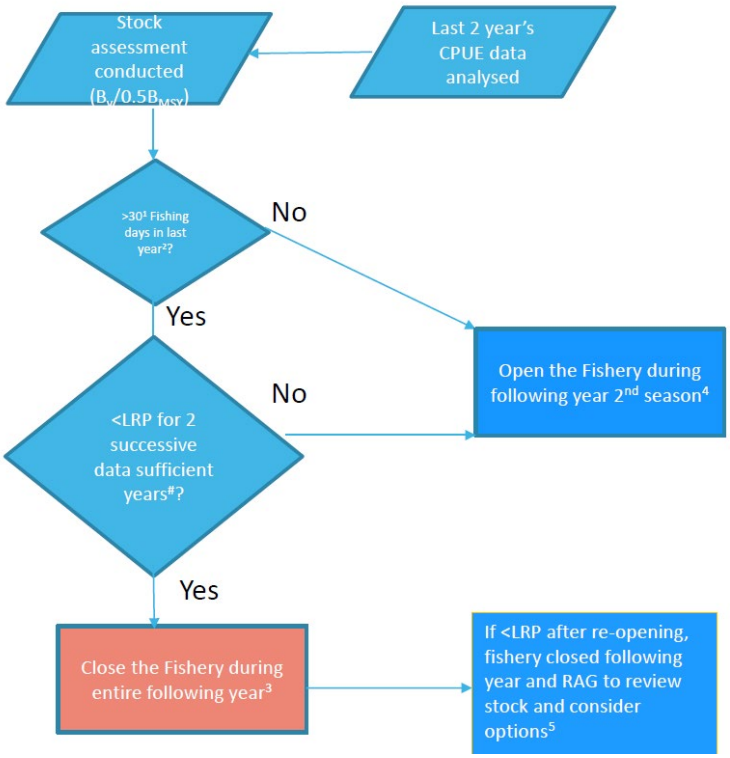

Figure 7. Draft update to red-leg banana prawn harvest strategy and harvest control rule. Source: Plagányi et al., 2021b.

There is a condition for the harvest strategy for this species and the strategy has been under review. The functioning of the harvest strategy has been problematic when there has been low catch and effort in the JBG fishery, for example, in 2015 and 2016 catch and effort were anomalously low and considered insufficient to reliably fit the assessment model. Environmental drivers are seen to be a major factor in low catch and effort years. The increasing uncertainty in assessing the stock in years with insufficient data highlighted a gap in the harvest control rules (HCRs). A management strategy evaluation (MSE) framework has been developed to enable simulation testing of the performance of proposed revisions to the HCRs (Blamey et al. 2020). Amongst the options considered in the MSE, the HCR which closes the first season in the JBG was selected as the highest performing and most precautionary option to maintain healthy stock levels and deliver stronger economic returns to the fishery. The 2021 stock assessment reference case for 2021 provided a recommended total allowable effort for 2021 of 160 boat days, with no fishing in the first season. The corresponding predicted catch is 173.1 t (an effort decline of 17.9% from the previous year but with a 29.8% increase in catch assuming average recruitment) (Plagányi et al., 2021a). An important component of the strategy moving forward is consideration of a minimum number of fishing boat days to provide sufficient data to run the stock assessment. Finalisation of the updated strategy for adoption is anticipated in 2022. A draft approach is shown in Figure 7.

The existing trigger points were not exceeded in 2020 and the CPUE was above the LRP. Based on the work undertaken on the stock assessment and harvest strategy, the NPFI elected to not fish in the JBG in the first season of 2021.

Tiger prawn sub-fishery

The NPF bioeconomic analysis provides estimates of optimal effort levels for the tiger prawn sub-fishery separately for brown and grooved tiger prawns based on effort patterns over the previous two years (optimising the effort over a seven year moving window to maximise profits), The target effort level is E_{MEY} (effort at maximum economic yield) (i.e. $E_y/E_{MEY} = 1$).

Estimated total allowable effort to achieve MEY in the tiger prawn sub-fishery in 2017 was 9928 boat days, comprising 7130 boat days directed at grooved tiger prawns and 2698 boat days directed at brown tiger

prawns. Standardised effort for grooved tiger prawns in 2017 was under the E_{MEY} level (70%). Standardised effort for brown tiger prawns was just 42% of the E_{MEY} level ("Base case").

Estimated total allowable effort to achieve MEY in the tiger prawn sub-fishery in 2018 was 7060 boat days. This comprised 4283 boat days directed at grooved tiger prawns and 2777 boat days directed at brown tiger prawns. This equated to an increase in total effort of 44.3% over 2017 effort. Estimated total allowable effort to achieve MEY in 2019 was 7822 boat days, comprising 4723 boat days directed at grooved tiger prawns and 3099 boat days directed at brown tiger prawns. Standardised effort for grooved tiger prawn in 2019 was 74% of the E_{MEY} level. For brown tiger prawn the standardised effort in 2019 was 69% of the E_{MEY} level.

In 2019, reports were received and taken into account from 38 vessels (73% of the fleet). At the end of the designated catch reporting period for the tiger prawn sub-fishery, the average catch per boat per fishing day was 439 kg, well above the 350 kg per boat/per fishing day trigger limit. Catch reports were received from all NORMAC members and advisors in accordance with the decision rules and the season remained open until 30 November.

In 2020, reports were received and taken into account from 39 vessels (75% of the fleet). The average catch per boat per fishing day during the reporting period was 289 kg, well below the 350 kg per boat per fishing day tiger prawn trigger limit. Catch reports were received from 4 out of 5 NORMAC members and advisors. In accordance with the agreed decision rules the season closed on 20 November.

Estimated total allowable effort to achieve MEY in the tiger prawn sub-fishery in 2020 was 6206 boat days, comprising 2816 boat days directed at grooved tiger prawns and 3390 boat days directed at brown tiger prawns (an 8.6% increase on total actual effort of 2019) (Deng et al. 2021). At the end of the designated catch reporting period for the tiger prawn sub-fishery, the average catch per boat per fishing day was 289 kg, below the 350 kg per boat/per fishing day trigger limit. Catch reports were received in accordance with the decision rules and the season was closed on 20 November as per the harvest strategy requirements. The 2021 model estimated effort levels were 3877 and 3363 boat days, respectively, for grooved tiger prawns and brown tiger prawns (a total of 7059 boat days) (Deng et al. 2021).

There are two conditions in place for red endeavour prawns in relation to the harvest strategy and harvest control rules (PI 1.2.1 and PI 1.2.2). The client action plan seeks to establish a stock assessment approach for red endeavour prawns and develop the harvest strategy and harvest control rules over the current period of certification. As indicated above, the 2021 tiger prawn sub-fishery has considered red endeavour prawn as part of the sensitivity testing (Deng et al. 2021).

The NPF harvest strategy considered at the 2018 certification of the fishery included only limited reference to red endeavour prawns (Dichmont et al., 2014). In 2021, there was an update to the strategy document to provide further consideration of red endeavour prawns and acknowledgement that red endeavour prawns are being included in the tiger prawn sub-fishery stock assessment as a sensitivity test (Dichmont et al., 2021). The inclusion of red endeavour prawns in the assessment work is playing an important role in enabling a strengthening the NPF harvest strategy in relation to this species.

Progress on satisfying these conditions is presented in the *Results Section* of the report.

No changes in scoring are warranted for P1 components.

3.4 Ecosystem update

3.4.1 Wildlife Trade Operation (WTO) Accreditation Conditions Update

No conditions or recommendations on P2 components were given at the NPF MSC re-certification in January 2018 and there is no evidence of any increase in risk from the fishery on these components.

In January 2019, the NPF was re-accredited, under the provisions of Part 13 (protected species) and Part 13A (wildlife trade) of the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act), to retain export approval until 6 January 2024 (DEE, 2019). The approval is dependent on three conditions being met:

1. AFMA to ensure there is sufficient ongoing monitoring (electronic or human) to evaluate the nature and level of impacts of fishing on EPBC Act protected species
2. AFMA to ensure that interactions with species of sawfish and sea snakes are minimised by facilitating research and monitoring programs that contribute to:

a. understanding the unique characteristics of sawfish and sea snake interactions with the fishing gear, understanding the population dynamics, including size and structure of sawfish species populations that occur within the fishing area, and

b. implementing appropriate mitigation measures that aim to increase the survival of sawfish and sea snake species

3. AFMA to develop an education program or materials that improve the accurate identification of sawfish and sea snake species.

To meet the DEE Condition 1, a higher level of Crew Member Observer (CMO) coverage was maintained, compared to the level that was scientifically derived to be required to identify change in interaction risk (2350 shots, Brewer et al., 2007). In 2020, as in 2019, 1028 boat-days were cover by CMOs across the three sub-fisheries (Butler et al, 2021). This corresponds to an estimated number of 3552 shots. In 2020, two vessels have participated in the CMO during the banana prawn season, compared to 10 vessels during tiger season (NORMAC, October 2020 minutes). The information obtained from the CMOP is verified through the fishery independent AFMA Scientific Observer Program (SO Program). In 2020, the SO coverage declined from 198 days in 2019 to 83 days in 2020 Butler et al, 2021). Due to COVID-19 restrictions, during the banana season there was no SO coverage in 2020, while 83 days were covered during the tiger prawn season (Adrianne Laird, pers com 21 October 2021).

In meeting the DEE Condition 2, NPFI is working with several research providers to improve management and mitigation of ETP interactions in the NPF (NORMAC, 2020). Projects include:

1. Can sawfish bycatch within the NPF be mitigated using an electric field? Final Report. Flinders University, Charles Darwin University (CDU), NPFI
2. How does trawl gear configuration affect sawfish catches: mitigating interactions with sawfish in the NPF. CSIRO, NPFI. To be noted that research also looked at other sharks and rays, turtles and sea snakes behaviour when entering the net. For sea snakes, especially, future research using video footage from inside the net will help gaining an understanding of their behaviour and how gear can be modified to encourage escape.
3. Assessing the impacts of trawl gear on sawfishes in the Northern Prawn Fishery with the aim to identify and test mitigation measures ensuring the long-term sustainability of Sawfish populations in northern Australia. CSIRO, NPFI
4. Is the Northern Prawn Fishery interacting with a single population, or multiple populations of the Narrow Sawfish *Anoxypristis cuspidata*? CDU, NPFI
5. Sawfish tissue sampling. NPFI, AFMA, CSIRO, DAWE (NORMAC, 2020)

In addition to the research projects, there is an ongoing monitoring of the NPF commercial fleet interactions with ETP and data obtained is analysed by CSIRO every three years, with the last published report in 2018 (Fry et al, 2018) and a new report to be finalised in 2021.

DEE Condition 3 is met through education programs, pre-season briefings and CMO training workshops that are in place to inform and educate skippers and crew members. CMOs are provided with a CMO kit containing the CMO manual, species identification guide, interaction reporting forms, digital camera, sawfish tissue collection kit, and other materials and equipment. CMO training and kits assist in the accurate identification of sawfish and sea snake species. In 2020, due to Covid-19 travel restrictions, the annual CMO training workshop could not be held in person. CMO kits were compiled and sent to each port for individuals to collect, along with a sawfish tissue sampling kit. CMOs were contacted individually to

discuss the data collection requirements and procedures for the season and to go through the species identifications (NPRAG, 2020).

An education campaign was undertaken during 2019 and 2020 aiming to increase reporting of sawfish and improve species identification, with ID posters provided to the boats.

In addition, AFMA has produced a protected species identification guide. This guide covers the range of protected species that AFMA managed fisheries do, or have the potential to, interact with during their normal fishing operations. The guide provides pictures of these species along with an indicative distribution and key biological information. All NPF boats have been provided with a copy of this identification guide (AFMA, 2021).

3.4.2 Retained and bycatch species information

Bycatch Reduction Devices Update

Kon's Covered Fisheyes (KCF), Tom's Fisheye, and FishEX 70 BRD devices were tested at-sea, primarily in the Gulf of Carpentaria, during tiger prawn commercial operations, in 2016 and 2018. The three devices were found to significantly reduce capture of small bycatch by 23.25 to 43.73%, with average commercial prawn losses ranging from -3.33% to +0.5% compared to a Square Mesh Panel BRD (Laird et al., 2020).

NPFI Bycatch Strategy Update

The new NPFI Bycatch Strategy focused on the progressive implementation in the NPF of the BRD devices shown to reduce small bycatch by 30%. In 2018, NPFI and AFMA implemented a mandatory phase-in of the new BRDs. In the tiger prawn season, fishers were required to have one of the new devices installed in half of the vessels' nets and regular BRDs in the remaining nets. Full implementation in the tiger prawn sub-fishery has been completed in 2020 (Laird et al., 2020). This means that all nets rigged for fishing during the tiger prawn season must have installed one of the BRDs that reduce bycatch by a minimum of 30%. These BRDs are not currently mandatory in the banana season, although a minority of vessels might target tiger prawns. NPFI has developed a Code of Conduct for the banana prawn season that encourages operators targeting tiger prawns during the banana season, to use BRDs that reduce bycatch by 30% in half of their nets (NPFI, 2020b).

Other Management Changes

From 2021, Joseph Bonaparte Gulf fishing area (red-leg banana prawn subfishery) will be closed during the first fishing season (banana prawn season), for at least five years (Adrianne Laird, pers com 21 October 2021). While this measure was mainly implemented for the management of red-leg banana prawn, it will also reduce the impact on bycatch species.

No score changes were warranted for retained and bycatch species.

Based on the new information and evidence provided by the client and AFMA, there is no requirement to re-score the PIs 2.1.1, 2.1.2, 2.1.3, 2.2.1, 2.2.2 and 2.2.3.

3.4.3 Endangered, Threatened and Protected (ETP) species information, management and outcome

The NPF's interactions with ETP species for 2016-2020 are presented in Table 2.

Most interactions, by number of individuals, are with sea snakes (~92%). Data show a trend on increasing the number of individuals released alive (from 65% in 2015 to >78% in 2020) and an increase in the number of interactions reported at species level for sawfish and turtles (e.g., 93% of sawfish were unidentified in 2016 and only 65% in 2020). This suggests that recent measures of crew education in handling, species identification and reporting are working.

A higher number of interactions with sawfish and sea snakes have been reported in 2020. At the NPRAG meeting from November 2020 mentioned the increase in interactions reported by skippers was attributed to an increase in reporting rather than an increase in the number of interactions (NPRAG, 2020). This could

be the result of the education campaign undertaken during 2019 and 2020 aiming to increase reporting of sawfish and improve species identification, with ID posters provided to the boats (NPRAG, 2020). Research efforts continue in order to understand sawfish behaviour when interacting with the NPF gear and the impact the fishery has on this group. Most sawfish interactions are with narrow sawfish which is not yet EPBC listed as threatened. However, the species is currently under assessment for threatened listing, with an outcome expected to be available in 2022. Also, the NPF ecological risk assessment (ERA) results are expected to be published in 2022.

Similarly, sea snake species identified in the NPF catch, except *H. pacificus* were assessed for the IUCN Red List as least concern (LC). *H. pacificus* was assessed as near threatened (NT) because declines over three generation (25 years) were estimated at least 20% (Milton et al, 2010). *H. pacificus* was not found to be at high risk from the NPF sub-fisheries (Griffiths et al, 2007, Milton et al, 2008). The two species that had localised distributions in the NPF, *D. kingii* and *H. pacificus* showed evidence of declines in abundance on commercial prawn trawling grounds (Milton et al 2008). However, these fishing grounds only accounted for an estimated 16% of their available habitat within the NPF managed area (Fry et al., 2018). The new ERA results and the three-annual ETP monitoring report that are expected to be published in 2022 may provide new evidence on the NPF impact on sea snake species (A Jarret, per comm September 2021).

Table 2. Northern Prawn Fishery interactions with Endangered, Threatened and Protected species (all three sub-fisheries)

Northern Prawn Fishery																								
TEP Species	**2016***					**2017***					**2018***					**2019***					**2020****			
	Alive	**Perished**	**Injured**	**Unknown**	**Total**	**Alive**	**Perished**	**Injured**	**Unknown**	**Total**	**Alive**	**Perished**	**Injured**	**Unknown**	**Total**	**Alive**	**Perished**	**Injured**	**Unknown**	**Total**	**Alive**	**Perished**	**Injured**	**Total**
Birds	0	0	0	0	**0**	1	0	0	0	**1**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	**0**
Dolphin	0	0	0	0	**0**	0	0	0	0	**0**	1	0	0	0	**1**	0	0	0	0	**0**	0	0	0	**0**
Dwarf Sawfish	0	1	0	0	**1**	2	0	0	0	**2**	3	1	0	0	**4**	4	0	0	0	**4**	3	1	0	**4**
Flatback Turtle	2	0	0	0	**2**	2	1	0	2	**5**	7	0	0	0	**7**	1	0	0	0	**1**	5	1	0	**6**
Freshwater Sawfish	0	0	0	0	**0**	24	0	0	1	**25**	2	0	0	0	**2**	2	0	0	0	**2**	8	4	0	**12**
Green Sawfish	0	0	0	0	**0**	19	2	0	0	**21**	21	2	1	0	**24**	3	0	1	0	**4**	16	0	0	**16**
Green Turtle	6	0	0	0	**6**	9	0	0	0	**9**	7	0	0	0	**7**	18	0	0	0	**18**	9	2	0	**11**
Hawksbill Turtle	0	0	0	0	**0**	1	0	0	0	**1**	0	0	0	0	**0**	1	0	0	0	**1**	0	0	0	**0**
Leatherback Turtle	0	0	0	0	**0**	1	0	0	0	**1**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	**0**
Loggerhead Turtle	0	0	0	0	**0**	2	0	0	0	**2**	2	0	0	0	**2**	1	0	0	0	**1**	1	0	0	**1**
Narrow Sawfish	11	11	0	0	**22**	99	27	0	0	**126**	188	48	2	0	**238**	156	70	2	0	**228**	294	112	3	**409**
Pacific Ridley Turtle	4	0	0	0	**4**	6	0	0	0	**6**	1	0	0	0	**1**	6	0	0	0	**6**	8	0	0	**8**
Sawfish Unidentified	166	125	0	0	**291**	201	127	0	0	**328**	260	142	0	0	**402**	242	126	0	1	**369**	531	266	1	**798**
Sea snake	6527	1961	5	5	**8498**	6825	2179	2	45	**9051**	8593	2107	0	348	**11048**	7761	2120	4	91	**9976**	10,506	2,695	12	**13,213**
Syngnathids	367	211	0	0	**578**	25	23	0	1	**49**	118	51	0	1	**170**	15	73	2	90	**180**	20	85	0	**105**
Turtles Unidentified	43	0	0	0	**43**	39	1	0	0	**40**	57	4	0	0	**61**	44	0	2	0	**46**	76	0	0	**76**
Whale Shark																					1	0	0	**1**
Total	**7126**	**2309**	**5**	**5**	**9445**	**7256**	**2360**	**2**	**49**	**9667**	**9260**	**2355**	**3**	**349**	**11967**	**8254**	**2389**	**11**	**182**	**10836**	**11478**	**3166**	**16**	**14660**

* Source: MRAG, 2020

** Source: data provided by NPFI (pers com Adrianne Laird, 21 October 2021)

Research projects update

At the previous surveillance audit, the NPFI announced involvement in three new research projects concerning sawfish protection:

> 1. *Can sawfish bycatch within the NPF be mitigated using an electric field? Flinders University, Charles Darwin University*
>
> *Tank trials will begin in April 2019 at JCU in Cairns to assess whether sawfish behaviourally respond to electric fields. The animals will be caught in early March from north of Cairns under permit from the Qld Fisheries (was scheduled for early February but postponed due to the heavy rain).*
>
> *2) How does trawl gear configuration affect sawfish catches: mitigating interactions with sawfish in the NPF. CSIRO*
>
> *This project proposes to investigate the effect of TED orientation and trawl net configuration on escapement and entanglement of sawfish to identify potential mitigation measures. The project was recommended at the May NPRAG meeting as a high priority for the NPF and was submitted to the October ComRAC meeting. In addition, a pilot study (funded by CSIRO) has been undertaken in 2018 tiger prawn season to test the most appropriate camera and light configurations for filming sawfish behaviour when entering the net and when encountering the TED.*
>
> *3) Is the Northern Prawn Fishery interacting with a single population, or multiple populations of the Narrow Sawfish Anoxypristis cuspidata? Charles Darwin University*
>
> *Details on the Narrow Sawfish are poorly known with little information available on its habitat, movements, ecology, or population connectivity. This research aims to fill a critical data gap for this species (population structure and connectivity across northern Australia). The work is part of a larger research project at Charles Darwin University "A12 Australia's Northern Seascape: assessing status of threatened and migratory marine species." being delivered by the NESP Marine Biodiversity Hub. NPFI is working with the lead investigator, Dr Peter Kyne, to facilitate the collection of tissue samples over the next two years of Narrow Sawfish incidentally caught in the NPF. The tissue samples will be provided to CSIRO geneticists to sequence complete mitogenomes with the aim of determining the provenance of individuals caught.* (Banks et al., 2019, p18-19)

Project 1 Progress

This project aimed to test the effect of electric fields on sawfish behaviour and assess the potential for electric pulses to mitigate sawfish bycatch in prawn fisheries. The project was developed in collaboration with the Northern Prawn

This project has been carried on and results have been published in a peer reviewed journal (see Abrantes et al, 2021). The study found that sawfish reacted to electric fields, but reaction distances were small (typically <1.2 m), and no field tested consistently led to reactions conducive to escaping from moving nets. Electrical field parameters that induced the most response in sawfish individuals tested were identified. The authors made recommendations for further research (Abrantes et al, 2021).

Project 2 Progress

For the second project, final report to the Community Grants Hub (Australian Government), was made available to the CAB.

This study found that during the banana prawn season the majority of trawls use a top opening TED and during the tiger prawn season the majority of trawls use a bottom opening TED. Over 90% of the observations are from the tiger prawn season. Overall, the catch rate of sawfish (numbers per km^2) during the banana prawn season is much higher in the bottom opening TED; one sawfish per 2.3km2, nearly twice that of the top opening TED in the same season. However, in the tiger prawn season catches were three times higher using the top opening TED than the bottom opening TED within that season; one sawfish per 8km2 compared to one per 28km2 (Table 1). This should be interpreted with caution given the far greater

number of shots using bottom opening TED in the tiger prawn season. The average catch rate of sawfish was noticeably higher during the banana prawn season compared to the tiger prawn season, irrespective of whether a top opening or bottom opening TED was used (CSIRO & NPFI, 2020).

For the banana prawn season data, TED orientation was not found to have a significant effect on probability of sawfish catch or in the number of sawfish caught. Although the raw mean counts suggest that sawfish catch rates are higher for bottom opening TEDs in this season, the standard errors were large (CSIRO & NPFI, 2020).

In the tiger prawn season however, TED orientation had a significant effect on sawfish catch. The probability of catching a sawfish and the number of sawfish caught were higher for top opening TEDs compared to bottom opening TEDs. The authors advise that the data used was highly unbalanced, with the vast majority of trawls in the tiger prawn season using bottom opening TEDs compared to top opening TEDs (CSIRO & NPFI, 2020).

This project has also identified the locations within the net where sawfish were more likely to be caught in nets using bottom opening and top opening TEDs for each season. As TEDs are designed to provide escapement of larger animals, the sawfish catches were also compared on size; up to 1300mm TL (small) or greater than 1300mm TL (large). The small size of up to 1300mm TL was determined to be the approximate maximum size a sawfish could physically pass between the bars of the TED grid into the codend (CSIRO & NPFI, 2020).

In the banana prawn season, the highest proportion of small sawfish caught in nets with either a bottom opening or top opening TED were recorded within the codend; 90% and 91% respectively. For the large sawfish, more than half (around 60%) were recorded tangled within the 2m of net forward of the TED when a bottom opening TED was used. Around 25% of large sawfish were also caught in this net location when a top opening TED was used, with another 25% of larger sawfish recorded tangled in the throat of the net with top opening TEDs. For both the bottom opening and top opening TEDs, most larger sawfish were recorded within the 2m forward of the TED section of the net including the TED flaps; 77% and 53% respectively (CSIRO & NPFI, 2020).

A similar pattern was seen in the tiger prawn season where the majority of smaller sawfish caught in either the bottom opening or top opening TED nets were recorded within the codend (Table 6). Although there were small sample numbers recorded from nets with top opening TEDs, 74% of all small sawfish caught in nets with bottom opening TEDs were recorded within the codend. More than half of all large sawfish (>1300mm) caught in nets with bottom opening TEDS were tangled within the 2m of net forward of the TED (CSIRO & NPFI, 2020).

Modelling of data from the banana and tiger prawn season combined has shown a dependence between net location that a sawfish is captured and TED orientation (CSIRO and NPFI, 2020).

Another outcome of this project was identifying the most appropriate camera and light configurations for filming sawfish behaviour when entering the net and when encountering the TED (CSIRO and NPFI, 2020).

Project 3 Progress

In 2020, the NPRAG noted that progress toward developing a sawfish close-kin mark-recapture (CKMR) project is continuing. Joint funding from AFMA, CSIRO and DAWE has enabled the continuation of sawfish tissue sample collections in 2020 and 2021 for any future CKMR project and a research proposal will be developed in this sense (NPRAG, 2020).

Based on the currently available published information, no score changes were warranted for ETP species component: PIs 2.3.1, 2.3.2 and 2.3.3 were not re-scored.

3.4.4 Benthic Habitats and Ecosystem information

No new information is available for these components Based on the new information, no scores were changed for the habitat and ecosystem components. PIs 2.4.1, 2.4.2, 2.4.3, 2.5.1, 2.5.2, 2.5.3 were not re-scored.

3.5 Governance update

3.5.1 Changes to Harvest Control Rules

A revised Commonwealth Harvest Strategy Policy (DAWR 2018a) and Commonwealth Fisheries Bycatch Policy (DAWR 2018b) were published in 2018 and have since been implemented. A new Ecological Risk Assessment (ERA) is expected to be published late 2021 or early 2022. A minor amendment was made to the NPF Harvest Strategy in October 2019 publication was amended in October 2019 and includes changes to the decision harvest control rules for red endeavour (Dichmont, 2021).

The assumption of the tiger prawn decision rules is that, because blue and red endeavour prawns are a bycatch of the tiger prawn fishery, controlling the season length and TAE of tiger prawns will maintain the stock size of blue and red endeavour prawns. This has been tested in MSE's which considered all four species applying delay difference models to all (Dichmont et al. 2008 and Dichmont et al., 2012). This issue is discussed in the description of the red endeavour Harvest strategy above.

Two Directions changes were made to fishery management system. These included

- Fisheries Management (Northern Prawn Fishery Seasonal Closures) Direction 2021
- Fisheries Management (Northern Prawn Fishery Gear Requirements) Direction 2021

The first relates to the Implementing the first season Joseph Bonaparte Gulf closure (Schedule 3):

Fishing is not to be engaged in in the area defined in Schedules 3, 4, 5, 6, 7 and 8 during the period commencing at 2200 hours UTC 31 March and ending at 0200 hours UTC 15 June each year.

The second relates to Removing BRDs no longer used in the fishery (Schedule 3) and clarification of the measuring/placement of BRDs.

3.5.2 Personnel changes in science, management or industry to evaluate impact on the management of the fishery.

Darci Wallis was appointed as AFMA's Fishery Manager (Northern Fisheries) in July 2021.

3.5.3 Potential changes to the scientific base of information, including stock assessments.

There are no potential changes to the scientific base of information likely to affect certification.

3.5.4 Monitoring, Control and Surveillance Update

The levels of non-compliance demonstrate that compliance levels are high and that the compliance regime, as applied, is highly effective.

AFMA applies a risk-based intelligence driven domestic compliance program. In order to maximise voluntary compliance, AFMA's compliance focuses on pre-season briefings with an emphasis on educating skippers; and conducting in-port inspections prior to the commencement of each season, with approximately 90 per cent of the fleet inspected. This enables AFMA's compliance team to identify issues early and allows potential offenders to modify gear prior to the commencement of fishing operations. In addition to targeting Turtle Excluder Devices (TEDs)/Bycatch Reduction Devices (BRD) specifications, compliance focused on ensuring VMS units, E-log and paper logbook reporting were compliant. AFMA also looks to conducted at-sea inspections were possible to monitor on-water activity such as interactions with threatened, endangered and protected species (TEP).

The COVID-19 pandemic significantly impacted the compliance capability and outcomes for 2020. AFMA worked closely with the NPF Industry to ensure that all possible COVID-Safe measures were applied to ensure the safety of both the crew and Fisheries Officers.

In March 2020, AFMA Fisheries Officers supported the Banana Season pre-season brief virtually to skippers. The briefing focussed on changes to Turtle Excluder Devices (TEDs) and noting that AFMA would continue to undertake desktop inspections to monitor compliance. Whilst AFMA was not able to

conduct physical inspections of NPF vessels, targeted desktop inspections were conducted throughout the season.

Between July to September 2020 of the Tiger Season, fourteen (14) inspections of NPF vessels were conducted in Darwin, with two (2) breaches recorded for non-compliant TEDs, the Masters were both warned.

In March 2021, AFMA Fisheries Officers supported the Banana Season pre-season brief in Darwin, Cairns and Karumba. AFMA conducted inspections on thirty-five (35) NPF vessels, with seven (7) in Darwin, fourteen (14) in Cairns, and fourteen (14) in Karumba. All inspected vessels were found to be compliant.

In July 2021, AFMA Fisheries Officers supported the Tiger Season pre-season brief in Darwin, Cairns and Karumba. AFMA conducted inspections on forty-one (41) NPF vessels, with one (1) in Darwin, eighteen (18) in Cairns, and twenty-two (22) in Karumba. All inspected vessels were found to be compliant.

Traceability Update

There have been no changes to the traceability arrangements for of product from the NPF.

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3.7 Version details

Table 3. – Fisheries program documents versions

Document	Version number
MSC Fisheries Certification Process	**Version 2.2**
MSC Fisheries Standard	**Version 2.01**
MSC General Certification Requirements	**Version 2.4.1**
MSC Surveillance Reporting Template	**Version 2.1**

4 Results

4.1 Surveillance results overview

4.1.1 Summary of conditions

Table 4 – Summary of conditions

Condition number	Condition	Performance Indicator (PI)	Status	PI original score	PI revised score
1	SI a) By the fourth surveillance audit, demonstrate that the harvest strategy for red endeavour prawn is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving stock management objectives reflected in PI 1.1.1 SG80.	1.2.1 – Red endeavour prawn	On target	70	Not revised
2	SI a) By the fourth surveillance audit, demonstrate that well defined HCRs are in place that ensure that the exploitation rate is reduced as the PRI is approached, are expected to keep the stock fluctuating around a target level consistent with (or above) MSY.	1.2.1 – Red endeavour prawn	On target	75	Not revised
3	SI b) By the fourth surveillance audit, provide evidence that the HCRs take into account the main uncertainties. SI c) By the fourth surveillance audit, demonstrate that available evidence indicates that the tools in use are appropriate and effective in	1.2.2 – Red-legged banana prawn	On target	65	Not revised

	achieving the exploitation levels required under the HCRs.				

4.1.2 Total Allowable Catch (TAC) and catch data

Table 5a. Catch data (this fishery does not operate with a TAC) – Brown Tiger Prawn

TAC	Year	**n/a**	Amount	**n/a**
UoA share of TAC	Year	**n/a**	Amount	**n/a**
UoA share of total TAC	Year	**n/a**	Amount	**n/a**
Total green weight catch by UoC	Year (most recent)	2020	Amount	409 t
Total green weight catch by UoC	Year (second most recent)	2019	Amount	908 t

Table 6b. Catch data (this fishery does not operate with a TAC) – Grooved Tiger Prawn

TAC	Year	**n/a**	Amount	**n/a**
UoA share of TAC	Year	**n/a**	Amount	**n/a**
UoA share of total TAC	Year	**n/a**	Amount	**n/a**
Total green weight catch by UoC	Year (most recent)	2020	Amount	957 t
Total green weight catch by UoC	Year (second most recent)	2019	Amount	1178 t

Table 7c. Catch data (this fishery does not operate with a TAC) – Blue Endeavour Prawn

TAC	Year	**n/a**	Amount	**n/a**
UoA share of TAC	Year	**n/a**	Amount	**n/a**
UoA share of total TAC	Year	**n/a**	Amount	**n/a**
Total green weight catch by UoC	Year (most recent)	2020	Amount	253 t
Total green weight catch by UoC	Year (second most recent)	2019	Amount	509 t

Table 8d. Catch data (this fishery does not operate with a TAC) – Red Endeavour Prawn

TAC	Year	**n/a**	Amount	**n/a**

UoA share of TAC	Year	**n/a**	Amount	**n/a**
UoA share of total TAC	Year	**n/a**	Amount	**n/a**
Total green weight catch by UoC	Year (most recent)	2020	Amount	125 t
Total green weight catch by UoC	Year (second most recent)	2019	Amount	147 t

Table 9e. Catch data (this fishery does not operate with a TAC) – White Banana Prawn

TAC	Year	**n/a**	Amount	**n/a**
UoA share of TAC	Year	**n/a**	Amount	**n/a**
UoA share of total TAC	Year	**n/a**	Amount	**n/a**
Total green weight catch by UoC	Year (most recent)	2020	Amount	2766 t
Total green weight catch by UoC	Year (second most recent)	2019	Amount	5592 t

Table 10f. Catch data (this fishery does not operate with a TAC) – Red-legged Banana Prawn

TAC	Year	**n/a**	Amount	**n/a**
UoA share of TAC	Year	**n/a**	Amount	**n/a**
UoA share of total TAC	Year	**n/a**	Amount	**n/a**
Total green weight catch by UoC	Year (most recent)	2020	Amount	139 t
Total green weight catch by UoC	Year (second most recent)	2019	Amount	48 t

4.2 Progress against conditions

Condition 1: Red Endeavour Prawn

	Insert relevant PI number(s)	Insert relevant scoring issue/ scoring guidepost text	Score
Performance Indicator(s) & Score(s)	**1.2.1**	**The harvest strategy is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving management objectives reflected in the target and limit reference points.**	**70**
Justification	Refer p.254 MRAG (2018).		

Condition	SI a) By the fourth surveillance audit, demonstrate that the harvest strategy for red endeavour prawn is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving stock management objectives reflected in PI 1.1.1 SG80.
Milestones	Years 1, 2 3, and 4 (4th year added due to 12-month condition extension per MSC COVID derogation 6): The client will need to provide evidence that it is actively working to ensure that the harvest strategy for red endeavour prawns is responsive to the state of the stock and that the elements of the harvest strategy work together towards achieving the management objectives. This evidence will include a summary of the actions taken by the client and other relevant parties to achieve this outcome. Resulting PI score 70 or more. Year 4: The client will need to provide evidence that the harvest strategy is responsive to the state of the stock and that the elements of the harvest strategy work Net Economic Return together towards achieving management objectives reflected in PI 1.1.1. Resulting PI score ≥80.
Client action plan	By 1st Audit: (January 2019) The NPRAG, in consultation with AFMA and NPFI, will: initiate a review of all available data (eg catch and effort, species split, survey data) on red endeavours; discuss and consider the option of running a single 'higher level sensitivity test' for the next full Tiger Prawn assessment in 2018 which includes red endeavours as incidental catch using either a Deriso or Bayesian production model; and discuss and consider alternative approaches (eg 'data poor' harvest strategy approaches) for managing red endeavours. CSIRO, on advice from the NPRAG, will: Run a single 'higher level sensitivity test' for the next full 2018 Tiger Prawn assessment which includes red endeavours as incidental catch using either a Deriso or Bayesian production model Present the findings to the NPRAG for consideration By 2nd Audit: (January 2020) The NPRAG will: Subject to the results of the sensitivity test and a cost/benefit (risk-catch-cost) analysis, determine whether to: re-include red endeavour prawns in the tiger prawn assessment; or, to develop independent empirically -based harvest control rules for red endeavour prawns. If the latter, develop an independent empirical-based set of harvest control rules for red endeavours for testing. By 3rd Audit: (~~January 2021~~ September 2021—delayed due to COVID 19 and concomitant six-month certificate extension) AFMA will: Apply either the multi-species model to management of red endeavour prawns or Apply independent empirical-based harvest control rules to red endeavours as a trial to determine the effectiveness of the management approach (tiger seasons 2018/2019). ~~By 4th Audit: (September 2022)~~ By the end of year 5 (September 2023)—extended by 12 months per MSC COVID derogation 6. The NPRAG will:

<table>
<tr><td></td><td>Review the success of the management approach using either the stock assessment outputs or other appropriate methodologies (eg a Management Strategy Evaluation (MSE) of independent empirically-based harvest control rules).
recommend to NORMAC and AFMA the preferred management option for red endeavour prawns.

AFMA, in consultation with NORMAC and NPFI, will:
amend the NPF Harvest Strategy such that it demonstrates responsiveness to the state of the red endeavour prawn stock and includes well-defined harvest control rules, meeting the requirements of Condition 1.</td></tr>
<tr><td>Progress on Condition [Year 1]</td><td>Progress against the Year 1 Client Action Plan items is summarised below:

<table>
<tr><th>Action item</th><th>Progress</th></tr>
<tr><td>a) Initiate a review of all available data on red endeavours.</td><td>NPFI commissioned a review. The report is in 'final draft' stage and has been provided to the auditors (Buckworth et al., 2019).</td></tr>
<tr><td>b) Discuss and consider the option of running a single ‘higher level sensitivity test etc.</td><td>Red endeavours were included as a higher level sensitivity test in the 2018 tiger prawn assessment. This stock assessment report was provided to the auditors (NPRAG, 2018c).</td></tr>
<tr><td>c) Discuss and consider alternative approaches for managing red endeavours.</td><td>NPRAG is actively considering alternative strategies for managing red endeavours, as evidenced by minutes of November 2018 NPRAG meeting (NPRAG, 2018b)</td></tr>
<tr><td>d) Run a single ‘higher level sensitivity test’ for the next full 2018 Tiger Prawn assessment which includes red endeavours as incidental catch etc.</td><td>Completed as at (b) above.</td></tr>
<tr><td>e) Present the findings to the NPRAG for consideration.</td><td>Completed as indicated above.</td></tr>
</table>

Further detail on the research undertaken is provided in Section 2.3 of this report. Discussions on development of the assessment of red endeavour prawns and its implications for the harvest strategy are ongoing. In consideration of efforts relative to the client action plan, the assessment team concludes the condition is on target.

Appendix 4 presents discussion of potential considerations in addressing the PI 1.2.1 and PI 1.2.2 conditions for red endeavour prawns.</td></tr>
<tr><td>Progress on Condition [Year 2]</td><td>In 2019, NPRAG reviewed information on how to assess red endeavour prawns. NPRAG endorsed that the species remain as a sensitivity test in the full tiger prawn sub-fishery multispecies model, rather than develop separate empirically-based harvest control rules for red endeavours. On this basis the status of the stock can be evaluated and the managers can respond to changes in stock.

At the site visit, CSIRO gave a presentation on progress with red endeavour prawn research underway to meet the condition. The tiger prawn assessment is due to be updated in 2020 and will include red endeavour prawns. In the update in progress there will be a revision to catchability/availability assumptions to reflect two major management changes in 1987 and 2001/2002 (and this will be</td></tr>
</table>

	presented to the NPRAG in May 2020). This change to a key assumption will not impact on choice of harvest control rule but will modify the current status of the resource. Preliminary work indicates the red endeavour current status is more positive than previous estimates. In relation to HCRs for red endeavour prawns, CSIRO indicate that two rules are required: 1. One for a limit reference point – fishery will close if for <u>five</u> years in a row biomass $<0.5B_{MSY}$. 2. One for a target reference point – fishery will manage stocks to meet MEY of all species; and by default meet Australian Government Harvest Policy guidelines. This practice should lead to endeavour stock trending around B_{MSY} for this stock and others.
Progress on Condition [Year 3]	The client action plan seeks to establish a stock assessment approach for red endeavour prawns and develop the harvest strategy and harvest control rules. The 2021 tiger prawn sub-fishery has considered red endeavour prawn as part of the sensitivity testing (Deng et al., 2021). Outcomes of this assessment work are given in Section 3.3.1 of this report. The NPF harvest strategy considered at the 2018 certification of the fishery included only limited reference to red endeavour prawns (Dichmont et al., 2014). In 2021, there was an update to the strategy document to provide further consideration of red endeavour prawns and acknowledgement that red endeavour prawns are being included in the tiger prawn sub-fishery stock assessment as a sensitivity test (Dichmont et al., 2021). The inclusion of red endeavour prawns in the assessment work is playing an important role in enabling a strengthening the NPF harvest strategy in relation to this species and is on track to allow decision rules for red endeavour prawn to be incorporated into the strategy.
Status of condition	**On target**

Condition 2: Red Endeavour Prawn

	Insert relevant PI number(s)	**Insert relevant scoring issue/ scoring guidepost text**	**Score**
Performance Indicator(s) & Score(s)	**1.2.2**	**Well defined harvest control rules are in place that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit reference points are approached.**	**75**
Justification	Refer p.256 MRAG (2018).		
Condition	SI a) By the fourth surveillance audit, demonstrate that well defined HCRs are in place that ensure that the exploitation rate is reduced as the PRI is approached, are expected to keep the stock fluctuating around a target level consistent with (or above) MSY.		
Milestones	<u>Years 1, 2 3, and 4 (4^{th} year added due to 12-month condition extension per MSC COVID derogation 6)</u>: The client will need to provide evidence that it is actively working to ensure that well defined harvest control rules taking into account the main uncertainties are in place for red endeavour prawns that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit reference points are approached. This evidence will include a summary of the actions taken by the client and other relevant parties to achieve this outcome. Resulting PI score 75 or more.		

	~~Year 4~~ Year 5 (amended due to 12-month condition extension afforded under MSC COVID derogation 6): The client will need to provide evidence that well defined harvest control rules taking into account the main uncertainties are in place for red endeavour prawns that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit reference points are approached. Resulting PI score ≥80.
Client action plan	By 1st Audit: (Jan 2019) The NPRAG, in consultation with AFMA and NPFI, will: initiate a review of all available data (e.g. catch and effort, species split, survey data) on red endeavours; discuss and consider the option of running a single 'higher level sensitivity test' for the next full Tiger Prawn assessment in 2018 which includes red endeavours as incidental catch using either a Deriso or Bayesian production model; and discuss and consider alternative approaches (eg 'data poor' harvest strategy approaches) for managing red endeavours. CSIRO, on advice from the NPRAG, will: Run a single 'higher level sensitivity test' for the next full 2018 Tiger Prawn assessment which includes red endeavours as incidental catch using either a Deriso or Bayesian production model Present the findings to the NPRAG for consideration. By 2nd Audit: (Jan 2020) The NPRAG will: Subject to the results of the sensitivity test and a cost/benefit (risk-catch-cost) analysis, determine whether to: re-include red endeavour prawns in the tiger prawn assessment; or, to develop independent empirically -based harvest control rules for red endeavour prawns. If the latter, develop an independent empirical-based set of harvest control rules for red endeavours for testing. By 3rd Audit: (~~January 2021~~ September 2021—delayed due to COVID 19 and concomitant six-month certificate extension) AFMA will: Apply either the multi-species model to management of red endeavour prawns or Apply independent empirical-based harvest control rules to red endeavours as a trial to determine the effectiveness of the management approach (tiger seasons 2018/2019) ~~By 4th Audit: (September 2022)~~ By the end of year 5 (September 2023)—extended by 12 months per MSC COVID derogation 6. The NPRAG will: Review the success of the management approach using either the stock assessment outputs or other appropriate methodologies (eg a Management Strategy Evaluation (MSE) of independent empirically-based harvest control rules). recommend to NORMAC and AFMA the preferred management option for red endeavour prawns. AFMA, in consultation with NORMAC and NPFI, will: amend the NPF Harvest Strategy as required to include well defined harvest control rules to manage red endeavour prawns to meet the requirements of Condition 2.

Progress on Condition [Year 1]	Progress In consideration of efforts relative to the client action plan is as described for Condition 1. The assessment team concludes the condition is on target. Appendix 4 presents discussion of potential considerations in addressing the PI 1.2.1 and PI 1.2.2 conditions for red endeavour prawns.
Progress on Condition [Year 2]	Progress In consideration of efforts relative to the client action plan is as described for Condition 1. The assessment team concludes the condition is on target.
Progress on Condition [Year 3]	As per Condition 1.
Status of condition	**On target**

Condition 3: Red-legged Banana Prawn

	Insert relevant PI number(s)	**Insert relevant scoring issue/ scoring guidepost text**	**Score**
Performance Indicator(s) & Score(s)	**1.2.2**	**SI (b) The selection of the harvest control rules takes into account the main uncertainties.** **SI(c) Available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the harvest control rules.**	**65**
Justification	Refer p.279 MRAG (2018).		
Condition	SI b) By the fourth surveillance audit, provide evidence that the HCRs take into account the main uncertainties. SI c) By the fourth surveillance audit, demonstrate that available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the HCRs.		
Milestones	Years 1, 2 3, and 4 (4th year added due to 12-month condition extension per MSC COVID derogation 6): The client will need to provide evidence that it is actively working to ensure that well defined harvest control rules taking into account the main uncertainties are in place for red-legged banana prawns that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit reference points are approached. This evidence will include a summary of the actions taken by the client and other relevant parties to achieve this outcome. Resulting PI score 65 or more. ~~Year 4~~ Year 5 (amended due to 12-month condition extension afforded under MSC COVID derogation 6): The client will need to provide evidence that well-defined harvest control rules taking into account the main uncertainties are in place for red-legged banana prawns that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit reference points are approached. Resulting PI score ≥80		

<table>
<tr><td>Client action plan</td><td>By 1st Audit: (Jan 2019)
CSIRO will:
Present a report to the NPRAG on investigations into the impacts of the Southern Oscillation Index (SOI) and economic impacts of fishing effort in other areas of the NPF (e.g. the Gulf of Carpentaria) on the red-legged banana prawn assessment
Propose additional harvest control rules for inclusion in the NPF red-legged banana prawn Harvest Strategy to address the current uncertainties
Subject to data availability, run and present the Red-legged Banana Prawn Assessment.

The NPRAG will:
Consider and discuss the proposed additional harvest control rules to address the uncertainties for the Red-legged Banana Prawn assessment;
Consider mechanisms for testing the proposed HCRs if required (e.g. a management strategy evaluation).

By 3rd Audit: (~~January 2021~~ September 2021—delayed due to COVID 19 and concomitant six-month certificate extension)
The NPRAG will:
Initiate mechanisms for testing the proposed HCRs if required
Review HCR tests;
Make recommendations to NORMAC and AFMA on the additional HCRs to address the current uncertainties for the Red-legged Banana Prawn assessment

~~By 4th Audit: (September 2022)~~ By the end of year 5 (September 2023)—extended by 12 months per MSC COVID derogation 6.

AFMA, in consultation with NPFI and NORMAC, will:
revise and incorporate the new Harvest Control rules into the NPF Stock Assessment to meet Condition 3.</td></tr>
<tr><td>Progress on Condition [Year 1]</td><td>Progress against the Year 1 Client Action Plan items is summarised below:

<table>
<tr><th>Action item</th><th>Progress</th></tr>
<tr><td>a) Present a report to the NPRAG on investigations into the impacts of the Southern Oscillation Index etc.</td><td>Progress on this is discussed in NPRAG (2018a) and NPRAG (2018b). Plagányi et al. (2017) found an association between catch rates and different combinations of El Niño conditions (Southern Oscillation Index) and seasonal rainfall. The qualitative model developed predicted low catch rates in both 2015 and 2016 as a result of El Niño conditions and below-median rainfall. Low catch rates in years of poor environmental conditions and better fishing opportunities elsewhere at these times are likely to lead to low catches and effort in Joseph Bonaparte Gulf.</td></tr>
<tr><td>b) Propose additional harvest control rules for inclusion in the NPF red-legged banana prawn Harvest Strategy to address the current uncertainties.</td><td>NPRAG (NPRAG, 2018b) has actively considered additional harvest strategy control rules options [including permanent closure of the first season (quarter 2); in-season trigger limits with threshold limits on the number of boat/effort; closing the</td></tr>
</table></td></tr>
</table>

		first season using a higher (above LRP) trigger point; and closing the first season based on rainfall/SOI indices. NPRAG has agreed to commission a management strategy evaluation to test these options. This work will is planned to be undertaken in early 2019.
	c) Subject to data availability, run and present the red-legged banana prawn assessment.	CSIRO undertook the 2017 red-leg banana prawn assessment and presented the assessment to the May 2018 meeting (NPRAG, 2018a, Plagányi et al., 2018).
	d) Consider and discuss the proposed additional harvest control rules to address the uncertainties for the red-legged banana prawn assessment.	Completed - see above.
	e) Consider mechanisms for testing the proposed HCRs if required (e.g. a management strategy evaluation).	Continuing - see above.

Progress on Condition [Year 2]

At the site visit, CSIRO gave a presentation on progress with red-legged banana prawn research underway to meet the condition.

Progress on action items since the Year 1 audit is summarised below:

Action item	**Progress**
a) Present a report to the NPRAG on investigations into the impacts of the Southern Oscillation Index etc.	The information summarised above for Year 1 has been presented in a paper which is currently in review in an international journal. The environmental drivers are included in Management Strategy Evaluation testing being conducted in February 2020 using a set of alternative operating models (OMs) (see below). These include: a base case OM and 5 OMs representing either key parameter uncertainty (recruit residuals; steepness) or structural uncertainty (SOI, SOI and rainfall – influencing either recruits or availability).
b) Propose additional harvest control rules for inclusion in the NPF red-legged banana prawn Harvest Strategy to address the current uncertainties.	MSE work has been initiated since the 1st surveillance audit. The current MSE project applies the current closure rule to all simulations as it would remain in place (that is, if below B_{limit} two years in a row fishery is closed). There are now 4 main alternative HCRs being tested (as variants of some rules) in February 2020, and their performance compared with the current status quo rules.
c) Subject to data availability, run and present	CSIRO undertook the 2018 red-leg banana prawn assessment and presented

	the red-legged banana prawn assessment.	the assessment to the May 2019 meeting (NPRAG, 2019a, Plagányi et al., 2018). This assessment will be updated with last year's data and presented in May (as a deadline).
	d) Consider and discuss the proposed additional harvest control rules to address the uncertainties for the red-legged banana prawn assessment.	The current MSE project applies the current closure rule to all simulations as it would remain in place (that is, if below B_{limit} two years in a row fishery is closed). There are now 4 alternative HCRs being tested in February 2020. With an "extra" one being no additional/alternative. The OMs used as part of the MSE framework have incorporated a number of the key uncertainties (model parameter and structural uncertainty, observation uncertainty, process uncertainty) to ensure that the model outputs are robust to the large uncertainties.
	e) Consider mechanisms for testing the proposed HCRs if required (e.g. a management strategy evaluation).	MSE set-up with monthly model instead of quarterly model. March meeting to be held for NPRAG and a proposed additional HCR will be chosen at this meeting on the basis of an evaluation of the trade-offs between key performance metrics. At the proposed NPRAG May 2020 meeting this HCR will be adopted to go to NORMAC for approval subject to an evaluation of sensitivity tests that will be reviewed at the May meeting.
Progress on Condition [Year 3]	The functioning of the NPF harvest strategy has been problematic in relation to red-legged banana prawns when there has been low catch and effort in the JBG fishery. For example, in 2015 and 2016 catch and effort were anomalously low and considered insufficient to reliably fit the assessment model. Environmental drivers are seen to be a major factor in low catch and effort years. The increasing uncertainty in assessing the stock in years with insufficient data highlighted a gap in the harvest control rules (HCRs). A management strategy evaluation (MSE) framework has been developed to enable simulation testing of the performance of proposed revisions to the HCRs (Blamey et al. 2020). Amongst the options considered in the MSE, the HCR which closes the first season in the JBG was selected as the highest performing and most precautionary option to maintain healthy stock levels and deliver stronger economic returns to the fishery. An important component of the strategy moving forward is consideration of a minimum number of fishing boat days to provide sufficient data to run the stock assessment. Finalisation of the updated strategy for adoption is anticipated in 2022. A draft approach is shown in Figure 7. Based on the work undertaken on the stock assessment and harvest strategy, the NPFI elected to not fish in the JBG in the first season of 2021.	
Status of condition	**On target**	

4.3 Client Action Plan

Revisions to the Client Action Plan timelines were made per MSC COVID derogation 6, allowing for management-related conditions (including those on harvest strategies and control rules) to be extended by 12 months. These changes are reflected using strikeout, and noted throughout the milestones and action plan. There are no further revisions to the Client Action Plan.

4.4 Re-scoring Performance Indicators

No Performance Indicators have been rescored.

5 Appendices

5.1 Evaluation processes and techniques

5.1.1 Site visits

The surveillance audit was announced on the MSC website on 28 September 2021. The site visit for the audit was conducted remotely on 28 October 2021 due to the Covid-19 pandemic.

Participants in the site visit were:

Richard Banks	MRAG Assessor (Team Leader)
Kevin McLoughlin	MRAG Assessor
Annie Jarrett	NPFI CEO
Trevor Hutton	CSIRO Scientist (Project Leader)
Eva Plaganyi-Lloyd	CSIRO Scientist
Darci Wallis	AFMA Fishery Manager (Northern Fisheries)

Mihaela Zaharia (MRAG Assessor) and Adrianne Laird (NPFI) undertook extensive discussions prior to the site visit, such that neither were required to attend the site visit.

5.1.2 Stakeholder participation

Stakeholders were notified 30 days prior to the site visit. Stakeholders were informed of the audit by email and through announcements posted on the MSC website. No stakeholders elected to participate in the site visit. Members of NPF MAC, and the NPFI Secretariat provided all inputs to the annual surveillance review including the provision of supporting documentation.

5.2 Stakeholder Input

There were no stakeholder submissions.

5.3 Revised surveillance program

Surveillance level justification			
Year	Surveillance activity	Number of auditors	Rationale
3	Off-site audit	3 auditors working remotely	Though the year 3 audit was scheduled to be on-site, the MSC September 2020 Covid-19 Pandemic Derogation enables CABs to conduct the surveillance audit remotely when national or local travel restrictions that impact the assessment team or certificate holder are in place. https://covid19.homeaffairs.gov.au/travel-restrictions

Timing of surveillance audit			
Year	Anniversary date of certificate	Proposed date of surveillance audit	Rationale

3	July 2021	October 2021	The audit is being held in October to accommodate the client, management, and assessment team member's schedules.

Fishery surveillance program				
Surveillance level	Year 1	Year 2	Year 3	Year 4
Level 6	On-site	On-site	Off-site	On-site in conjunction with the reassessment of the fishery