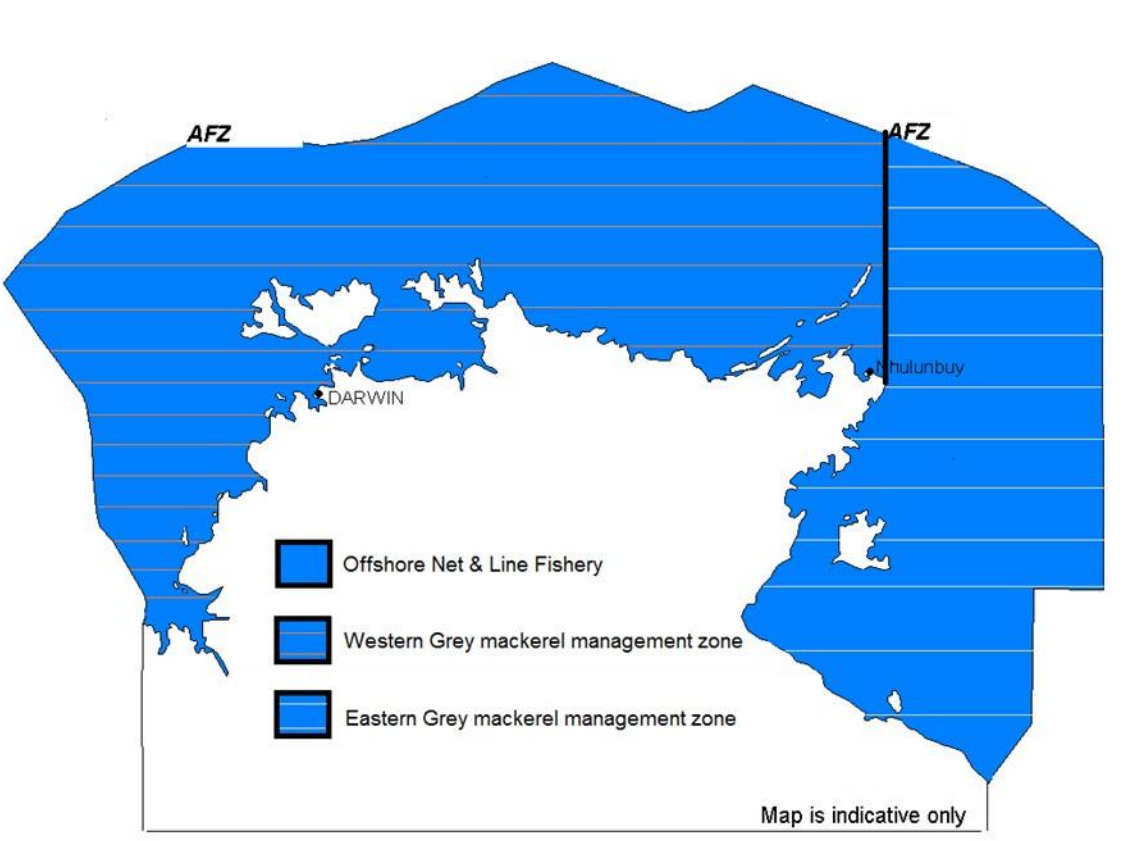
Management arrangements for the Northern Territory Offshore Net and Line Fishery



(Map of Fishery area, Figure 1.)

AN INDIVIDUAL TRANSFERABLE QUOTA MANAGEMENT FRAMEWORK AND ASSOCIATED HARVEST STRATEGY (INTRODUCED 17 DECEMBER 2018)

DEPARTMENT OF **INDUSTRY, TOURISM AND TRADE**

NORTHERN TERRITORY GOVERNMENT

Document title	Management arrangements for the Northern Territory Offshore and Net and Line Fishery
Contact details	Department of Industry, Tourism and Trade
Approved by	Executive Director of Fisheries
Date approved	
Document review	5 years

Version	Date	Author	Changes made
1.0	December 2018	Aquatic Resource Manager	First version
2.0	July 2023	Aquatic Resource Manager	Revised Harvest Strategy and updated Department name change

Introduction/background

The Offshore Net and Line Fishery (ONLF) is a quota managed fishery, operating in Northern Territory (NT) waters from the low water mark to the boundary of the Australian Fishing Zone. The area of the fishery is approximately 542,000 nm2. The ONLF is currently managed primarily via output (catch based) and input (gear based) controls. Primary gears include pelagic net and demersal line.

With the exception of no-take species (as defined under NT Fishery Regulations), the ONLF can take any cartilaginous fish or any bony fish taken while targeting cartilaginous fish using approved methods. The key species taken are Grey Mackerel, Blacktip Sharks and Spot-tail Sharks. Other retained species include other Sharks and finfish.

The NT and Commonwealth via the Northern Territory Fisheries Joint Authority (NTFJA) share responsibility for the management of the ONLF. The Fisheries Division of the Department of Primary Industry and Resources (Fisheries) undertakes day-to-day management of the fishery.

The NTFJA has approved the use of Total Allowable Commercial Catch (TACC) and Individual Transferable Quota (ITQ) in the management of the ONLF, subject to satisfactory outcomes for government regarding the cost of management, research and compliance. The Offshore Net and Line Advisory Group (ONLAG), at the request of Offshore Net & Line Licensee Committee, have developed new management arrangements in the fishery that primarily focus on output (catch based) controls.

This document describes the framework as developed by the ONLAG for new management arrangements in the ONLF aimed at addressing contemporary concerns identified through community consultation. The framework also incorporates the Harvest Strategy (comprising research and management strategies) for the ONLF. The Harvest Strategy is to be read in conjunction with the overall 'Management Framework' and together, forms the new Management Plan for the fishery.

At the request of Industry, the proposed strategy was developed in two stages;

Stage 1: the introduction of an Individual Transferable Quota (ITQ) framework to the fishery, along with monitoring measures necessary to address primary environmental concerns, and

Stage 2: a complementary Harvest Strategy (Appendix 1).

PROPOSAL OVERVIEW

The key objectives for the ONLF are:

- sustainable use of the resources
- to address the environmental impacts of the fishery and community concerns whilst maintaining licence holder entitlements where possible, and
- to enhance the fisheries economic viability where possible

By setting a TACC and allocating it to licences as ITQ, rights to access the catch are established. After an initial allocation, market forces see the quota distributed among those fishers who value the rights most highly. Often these same fishers are able to utilise the resource most efficiently. It is expected the fishery will autonomously adjust using this approach. Because quota holders are guaranteed a proportion of the total harvest, there is a reduced incentive to compete for catch and operators can concentrate on taking their share of the TACC in the most efficient way for their business.

The TACC for any species provides for long-term sustainability and long-term profitability. Biological systems, which include commercial fish stocks and economic factors affecting fishing are not static and it would be unrealistic to think that the TACC for any given species will be static between years. The maximum sustainable yield may also not correlate to the maximum economic yield in a fishery.

There are three main components to a quota structured fishery;

- the 'licence to fish'
- the 'fishery unit' (Fishery Unit, Entitlement or ownership share) , and
- the annual 'catch allocation' (Quota Unit or Individual Transferable Quota)

A licence is required for a person to take fish for commercial purposes in accordance with Section 10 of the *Fisheries Act.* It is important to note that in the transition of a fishery from input controlled to output controlled; the value of a licence may shift from the licence to the fishery units. Under this proposal, the number of new licences issued need not be restricted, providing whole of fishery bycatch limits and overall ecological impacts of fishing are adequately addressed. Sustainability of stocks within the fishery will be maintained via the annual TACC process.

A 'Fishery Unit' is a single share of the total available shares in the fishery. Upon implementation of these new management arrangements, fishery units are allocated to licences.

A 'Quota Unit' is the fishery unit's annual allocation. The issue of quota units, i.e. 1 kg of whole fish of a particular species/species group allocated (in 1 kg units) to a licence, based on the number of fishery units attached to that licence and the TACC for that licensing year. ITQ (as quota units) means the same as a quota unit. While a licence cannot be transferred, fishery units or quota units can be transferred between licences.

All Shark fishery units and 50% of the Grey Mackerel fishery units have been allocated to individuals based on entitlement holdings at commencement. At the request of Industry, the balance of the Grey Mackerel units (50%) were allocated based on catch history.

1. Total Allowable Commercial Catch (TACC)

The ONLF management framework describes the measures for the commercial harvest of Grey Mackerel and Blacktip and Spot-tail Sharks, along with a number of associated Sharks and finfish bycatch. There is currently little information available on the harvest levels of other sectors (e.g. Amateurs or Fishing Tour Operators). However, the introduction of the TACC mechanism (which may be conservative in terms of possible Total Allowable Catch) allows for consideration of a potential additional resource allocation to other sectors in the future i.e. scope remains for any future sector allocations. The introduction of an ITQ system into the ONLF will align this fisheries management arrangements with other NT ITQ fisheries and will allow for cross-fishery transfer of quota to permit retention of sharks (currently not permitted) in these fisheries.

Where stock levels for target species are believed to be healthy, a precautionary TACC reflecting a conservative increase to estimated historical targeted catch levels have been allocated to cover all retained species. This will reduce compliance and monitoring costs to licensees, ensure sustainability and provide for growth in the fishery. The new arrangements have been developed to provide incentives to harvest catch in a more efficient manner and encourage a greater spread of effort across the fishery through the introduction of spatial management zones thus reducing the risk of localised depletion (particularly for Grey Mackerel).

A compliance risk assessment is triggered by a transition to output controls (quota). It is anticipated that additional checks and balances will be required to ensure catch does not exceed quota holdings. The introduction of vessel monitoring systems provides for better environmental outcomes for the fishery, improved economic performance for operators through optimised monitoring for access to stock management zones, increased transparency and community support.

1.1 Setting the TACC

Under Fisheries legislation, the Minister for Fisheries is responsible for setting a TACC and may, before the start of each fishing season, review and/or determine the TACC for each quota species / or species group. In reviewing and/or determining the allowable catch the Minister may consider, amongst other things:

- The adequacy of government stewardship of aquatic resources promoting fairness, equity and access to aquatic resources by all recognised stakeholder groups the agreed decision rules
- information given by the Offshore Net and Line Advisory Group (ONLAG), and any subsidiary Committee if established
- information about the sustainability of marine species in the area of the fishery
- potential impacts from other community sectors
- the reference points set for the stocks of quota species
- the precautionary principle; and
- any decision made by the Director of Fisheries ('the Director') or the NTFJA

The Regulations describe the parameters for determining TACC's, and the annual TACC may be prescribed by the Minister in those regulations. The TACC will remain as set by the Minister until the Minister determines a new TACC. If the Minister for Fisheries does not set a new TACC prior to a fishing season, then the TACC set for the previous season will apply.

The Director may develop decision rules and management actions associated with the implementation of TACC's in a fishery. The decision rules should be included in the regulations (where appropriate) and include as a minimum; objectives, performance indicators, trigger points and management actions covering:

- monitoring the fishery effectively and minimising high grading / discarding
- establishing and maintaining confidence in TACCs
- maintenance of bycatch within acceptable parameters
- review of retained and non-retained catch composition
- interactions with threatened, endangered, protected or listed species
- effects of fishing on the ecosystem

In approving any decision rules the Director may consider, amongst other things:

- information given by the Offshore Net and Line Advisory Group (ONLAG), and any subsidiary Committee
- the total estimated catch by commercial, recreational, indigenous fishers and any other users of the fishery
- impacts on other sectors equitable access to resources in key areas
- information about the sustainability of marine species and ecosystems in the area of the fishery and conformity with the *Environmental Protection and Biodiversity Conservation Act* (the *EPBC Act)*
- the reference points set for the stocks of quota species
- the precautionary principle; and
- any decision made by the Minister

1.2 Blacktip Sharks

The most recent stock assessment for Common blacktip (*Carcharhinus. limbatus*) and Australian blacktip (*C. tilstoni*) estimates biomass to be at 81% and 90% of unfished biomass (Grubert *et al* 2013). The current state of the biomass of these species is strong evidence that recent catch levels are sustainable. Given that the TACC should be set at a demonstrably sustainable level, it is proposed that the initial TACC for Blacktip Sharks be set at 10% above the average targeted catch. The period used to determine average targeted catch was 2007-08 – 2011-12. This would result in a TACC of 435 t. Two primary lines of evidence Stock assessment, and results from Shark tagging projects support the proposed level.

These harvest levels are formalised as TACC. The harvest catch average has been determined with careful consideration for the status of the species, difficulties with identification, and preliminary information received from a current review of these shared stock species being undertaken by Western Australian Fisheries.

1.3 Spot-tail Sharks

The most recent stock assessment for Spot-tail Sharks (*C. sorrah*) estimates biomass to be at 81% and 90% of unfished biomass (Grubert *et al* 2013). The current state of the biomass of these species is strong evidence that catch levels are sustainable. The initial TACC for Spot-tail Sharks is set at 10% above the average targeted catch to formalise these harvest levels as TACC. The period used to determine average targeted catch was 2007-08 – 2011-12. The TACC is 122 t and has been determined with careful consideration for the status of the species. The level allow for conservative species development and is supported by two primary lines of evidence; Stock assessment, and results from Shark tagging projects.

1.4 Combined Shark Species

The targeted catch average for combined Shark species group (Hammerheads, Pigeye, Tiger, Bull, Sandbar, Spinner, Dusky, Winghead, Grey Reef and Lemon Sharks) is 246 t. The period used to determine average targeted catch was 2007-08 – 2011-12. The regulations formalise the historical harvest levels as TACC. The historical harvest average has been used as catch and CPUE trends have shown no clear evidence of decline in the stocks of these species. However, given the recent listing of Hammerheads on the Convention on International Trade in Endangered Species (CITES) Appendix II, precautionary management measures are required for the two relevant species. The measures will ensure the catch of Hammerheads is maintained at levels acceptable to the Department of the Environment and Energy (DoEE) (e.g. ~50t / sp.), while not actively encouraging discarding. You can find more on this topic at section 11.

Acknowledging the limited information for the species contained in this group, the management framework provides for a regular review of quota limits, allowing limits to be adjusted as more information becomes available.

1.5 Combined Other Sharks Group

Fishing methods used in the ONLF can be quite targeted. Key target species inhabit predictable habitats and often school. Combined Other Sharks make up a relatively small proportion of retained catch (<1-10%). This catch is primarily made up of Whitecheek, Milk Shark and Hardnose Sharks

The TACC amount set for the Combined Other Sharks Group has been set at a level that does not inhibit fishery development or encourage discarding through insufficient holdings. Based on historical catch data, the Combined Other Sharks Group averages ~10-40 t. However, to reflect the life history traits for these species, accommodate for seasonal fluctuations, enhance quota market flexibility and to encourage transition into the new system, a ~126 t TACC was set. It should enable operators who wish to operate in the fishery sufficient access to available group quota. An ongoing mechanism is in place to elevate individual Shark species from this group that emerge as requiring species specific TACC.

1.6 Grey Mackerel

The most recent stock assessment for Grey mackerel (*Scomberomorus semifasciatus*) estimates biomass to be at 81% (north/western stock) and 74% (Gulf of Carpentaria (GoC) Stock) of unfished biomass (Grubert *et al* 2013). The current state of the biomass of these species is strong evidence that recent catch levels are sustainable and there is scope for a tightly controlled increase in the harvest of Grey mackerel (in line with the principles of ecologically sustainable development) in all areas of the NT. The TACC in the Gulf of Carpentaria has been adjusted to reflect historical catches during those years when targeting of Grey mackerel has occurred with an additional 10%, to allow tightly controlled growth in the catch.

Following a review of stakeholder comments and further examination of the fisheries harvest history, the TACC for Grey mackerel is set at 535 t. The TACC for Grey mackerel is to be distributed ~75%/25% respectively between known stock structure zones along pro-rata historical catch levels between a ‘western’ stock structure zone and an ‘eastern’ stock structure zone.

1.7 Combined Finfish Group (By-product)

Fishing methods used in the ONLF can be quite targeted. Key target species inhabit predictable habitats and often school. Finfish by-product makes up a relatively small proportion of retained catch (<1-10%). This catch is primarily made up of associated finfish, including Spanish mackerel. Golden snapper and other ‘reef’ associated fish are included in the finfish by-product group.

Under the Spanish Mackerel Fishery Management Plan, the ONLF catch share for Spanish mackerel is set at 13.5 t. The Spanish mackerel harvest is monitored regularly and annually reported. Incidental catches of Spanish mackerel rise and fall with the stocks natural productivity rhythm. The current arrangement allows incidentally caught fish to be retained and discourages targeting through trip limits.

However, under the current arrangements, the highest TACC that could be set is 13.5 t. This amount is not considered viable for 17 operators when equally allocated (e.g. 794 kg per licence, or 8.4kg/net unit) as it is likely to initiate discarding or encourage illegal activity. Therefore, Spanish mackerel have been included in the Combined Finfish Group and do not have a specific TACC.

Alternative measures to reduce the likelihood of overcatch occurring could be consideration of;

- seasonal closures for key shoals when Spanish mackerel are more prevalent e.g. June through August;
- the commercial sector share allocation;
- reducing Spanish mackerel trip limits for ONLF Operators, or;

- any other appropriate mechanism.

Discussions with the Spanish Mackerel Fishery (SMF) licence holders to explore how a legitimate overcatch of Spanish mackerel in the ONLF could be acquitted against the commercial SMF share are encouraged with a permanent solution expected from a review of SMF management arrangements within three years. Interim management measures have been enacted to ensure all Spanish Mackerel catches are reported and accounted for under the Total Allowable Catch set for each sector and fishery (refer section 4.4 for details on Spanish Mackerel Overcatch mechanism). It is important to note any management measures outlined in Appendix 1 would not apply to a licensee unless the licence has landed more than 794 kgs of Spanish mackerel during a season. Note: This amount reflects the entitlement that would have been attributed to each licence if the 13.5 t was distributed equally to each licence.

The TACC amount set for the combined Finfish Group (by-product) has been set at a level that does not inhibit fishery development or encourage discarding through insufficient holdings. Based on historical catch data, the combined Finfish Group (by-product) averages ~20-40 t. However, to accommodate for seasonal fluctuations, enhance quota market flexibility and to encourage transition into the new system, a ~60 t TACC has been set. It should enable operators who wish to operate in the fishery sufficient access to available group quota.

2. Fishery Access

2.1 Background Information

When determining a licence's potential access and allocations, it is relevant to provide some background information to the progressive evolution of the ONLF's management arrangements. On the establishment of the NTFJA in 1995, eligibility of existing Commonwealth permit holders to participate in the future was determined on proper grounds. Those eligible permit holders were granted access into the new NTFJA fishery. In 1996 industry requested Government to introduce a 3 for 1 licence reduction scheme to coincide with the amalgamation of the then Commonwealth and NT fishery Inshore, Offshore and a GoC zone. The 3 for 1 licence reduction scheme has reduced the licence numbers from 38 to 17. Note: this scheme no longer serves any useful purpose and will not be carried forward.

During 2004-05, the fisheries management arrangements were amended to cap the total allowable effort that could be used in the fishery to historical levels. This was considered necessary to address community concerns about rapidly increasing shark catches in the fishery. At this time, there was an average of 10-14 licences active in the fishery annually, though some of these were only active for a relatively small portion of the year. These active licences comprised on average 2 restricted and 10 unrestricted licences.

At the request of industry, the 2004-05 effort allocation was equal to each licence based upon the type of licence held (e.g. 'restricted' or 'unrestricted'). It was noted at the time that this mechanism placed significant operational restrictions upon all active operators. A recognised advantage available to an operator from leasing out effort (or catch) units each year is for the development of a more flexible income stream regardless of what type of licence previously held or whether they were 'inactive' or considered to be 'latent effort'. This additional income stream could be used to offset any potential financial discrepancies between the old and new schemes. Note; only those licences current prior to the commencement of the new Regulations will transition into the new scheme.

2.2 Allocation

100% of the fishery units for each shark species/species group and 50% of the Grey mackerel fishery units were allocated to licence holders based on their existing ONLF holdings. The other 50% of Grey mackerel fishery units is allocated based on catch history (as recommended by industry). The period used to determine allocation to licence holders, 2007-08 – 2011-12 was the five years immediately prior to fishers being notified of the review in late 2012 and the consultation paper being released in early 2013.

The number of fishery units issued to the ONLF is as follows:

Grey mackerel species	Western zone	404,000 fishery units
	Eastern zone	131,000 fishery units
Combined Blacktip Shark (*C. limbatus and C. tilstoni*)		434,694 fishery units
Spot tail Shark species		121,446 fishery units
Combined Shark species		246,441 fishery units
Combined Other Sharks Group comprising Combined minor sharks, Whitecheek, Milk and Hardnose		126,477 fishery units
Combined Finfish Group (by-products) Combined finfish species, including Spanish Mackerel		59,397 fishery units

The number of fishery units equally allocated to one Pelagic Net fishery unit is as follows:

Combined Australian Blacktip Shark species	128 fishery units
Spot tail Shark species	30 fishery units
Grey mackerel	167 fishery units
Combined Shark species	17 fishery units
Combined Other Shark Group	69 fishery units
Combined Finfish Group (by-product)	37 fishery units

The number of fishery units equally allocated to one Demersal Long-line fishery unit is as follows:

Combined Blacktip Shark (*C. limbatus and C. tilstoni*)	983 fishery units
Spot tail Shark species	314 fishery units
Combined Shark species	937 fishery units
Combined Other Shark Group	69 fishery units
Combined Finfish Group (by-product)	1 fishery units

2.3 Grey Mackerel catch-history allocation method

At Industry's request, 50% of the available Grey mackerel fishery units have been allocated based on catch history. The average of the best 3 years in 5 for each licence over the period between 2007/08 and 2011/12 has been used to determine the proportion of the available fishery units (267 000) to be allocated pro-rata to each licence. The period 2007-08 – 2011-12 was the five years immediately prior to fishers being notified of the review in late 2012 and the consultation paper being released in early 2013.

Note: individual allocation information is considered "Commercial in Confidence" and cannot be made public without gaining the individual licence holders consent.

The Grey mackerel TACC is distributed to an eastern and western zone loosely based on known stock structure for the species (Welch, David J. et al. 2009) and sustainable fishing effort. To allocate to individual fishers, the preferred industry model has been used, i.e. 50% equally allocated based upon licence holdings, and 50% based upon a licence's catch history (best 3yr average from 5yrs market data). After an individual licences allocation has been determined based on the preferred mechanism, the licence's allocation is then distributed pro-rata to each zone according to the stock structure and TACC allocation to each region (e.g. the Gulf TACC is 131,000 kg and the TACC allocation in the Western grounds is 404,000 kg). The licence's allocation is distributed ~75/25 to each zone according to this formula.

The reasoning behind this model was to implement a mechanism to alleviate risks of spatial depletion, which was identified as a key issue facing the industry, particularly in the more heavily fished western zone (hence the separation of fishing effort based on currently known stock structure).

Due to its proximity to Darwin specific concerns have been raised by industry about localised depletion of key shoals along the west coast of the Northern Territory. Maintaining the biomass of target species at sustainable levels is outlined in the Harvest Strategy (refer Appendix 1) to identify location specific performance indices and reference points. Due to confidentiality of specific shoals, the location of a grid requiring protection will not be disclosed until a relevant management action is triggered under the harvest strategy.

2.4 Development of an emerging Species

The Harvest Strategy provides for the development of other shark species. Where the catch of a secondary species increases to defined reference points, management action will determine whether the species could be considered for elevation to a targeted species. The ONLAG can recommend to Fisheries that an individual shark species be elevated from the quota group to have an individual species-specific quota. Such a recommendation would be made to the Director of Fisheries and, if approved, referred to the Minister for consideration.

3 Individual Transferable Quota (ITQ)

ITQs are the annual allocation of quota units to a licence, based on the number of fishery units held by that licence. The TACC in any given year may need to change, based on the estimate of the sustainable harvest level. To change the level of harvest from a stock, the value (not the number) of a fishery unit will be changed. If the estimate of sustainable harvest goes up, the value of the fishery unit will go up and vice versa. One quota unit will always equal 1 kilo of whole fish.

To work out how much quota will be held by any one licence, divide the number of fishery units held by that licence by the total number of fishery units for a species or species group; then multiply the product by the TACC for that species or species group. Note; partial numbers will be rounded to the nearest whole number.

4. Licensing and Quota Provisions

Fishery units attached to the licences entitle the licence holder to an annual quota unit allocation. A fishing licence provides access to the fishery for licensees, subject to provisions of the *Fisheries Act* and additional management arrangements in place for that fishery.

To assist in the administration within NT Fisheries, unique licence numbers are used as the lynchpin holding the various identifying elements of a complicated structure together. A number of elements, such as party, contact details, vessels, gear, catch and effort logs, fishery units and quota, any special catch or gear conditions and crew are linked to the licence within the database mainframe. The fishing licence is a mechanism that can be used to control multiple species, bycatch (discards) and gear impacts on the ecosystem. Licences are non-transferable.

All renewed licences immediately prior to the commencement of the new Regulations were eligible for transfer to the new Regulations upon payment of any outstanding fees, levies or charges due. To assist with administration, all licences under the new scheme have been issued with a new unique series number starting with **4xxx** (instead of the previous 5xxx or 1xxx series). Additionally, a new entrant who is purchasing **fishery units or quota units** in the fishery shall simultaneously apply for and, if approved, the Director shall issue an **A5/4xxx** series licence to the new entrant.

4.1 Non-transferable Licences

Licences issued under Fisheries Regulations 97 or 98 (subject to Reg.96B) are currently fully transferable. This capacity is not required under a quota system as there are no restrictions on new licences issued. Licences are not be transferable under the new scheme. Licences currently in the fishery have been transferred into the new Regulations framework and have provided for the initial allocation of fully transferable fishery units.

4.2 Fishery Unit Transfer

A licence holder's fishery unit may be sold (i.e. permanently transferred) subject to the following conditions pertaining to the transfer of fishery unit. Note, if the licence holder sells ALL his fishery units he will not be entitled to receive any future allocation of quota units. The new holder of the transferred fishery unit will not have any quota units issued until the next licensing period.

The existing Shark Unit Entitlement transfer fee of $10 per unit has been removed. The minimum amount of fishery units that may be sold is undecided but will depend on the varying cost of administration to transfer one or a set amount of fishery units. A fishery unit holder may sell some of or their entire fishery units. Note; as the nominal 'value' of a licence will shift from the licence to the fishery unit, the sale of fishery units may attract stamp duty obligations.

4.3 Quota Unit Transfer

Quota units are a separate entity to fishery units. Once they have been allocated to a licence, they have a nominal 'life' of the licencing period in which they were issued (i.e. one licencing year) and as such quota units may be transferred (sold). A quota unit holder may transfer some or all of their quota unit allocation. Note: as quota units only have a nominal 'life' of twelve months, they may be transferred only within the licensing year to which the quota unit relates. A new entrant to the fishery must apply for, and be approved, an Offshore Net & Line licence simultaneously for the transfer of quota units to be approved.

The introduction of the ITQ system into the ONLF aligns this fisheries management arrangements with other ITQ managed fisheries and will allow for transfer of quota between ITQ fisheries.

4.4 Catch Reconciliation Provisions

(Grey mackerel, Combined Blacktip Shark, Spot-tail Shark and Spanish mackerel only eligible)

This section provides a reconciliation mechanism to operators who accidentally exceed their quota (or Spanish mackerel limit) for a species within a season.

4.4.1 Quota species Over Quota catch (Key target species - Grey mackerel, Combined Blacktip Shark, Spot-tail Shark)

As there is a delay between when the previous fishing trip finishes and when all catch information is entered into the database, overcatch is not able to be calculated until the last week of each month. A licence holder will be notified of overcatch amounts and the operator has until the end of the month following the overcatch to reconcile their excess catch by obtaining more quota. It is a quota holder's responsibility to keep track of their catch against their quota holdings. If a quota holder does not reconcile their catch with quota within the following month, they may be subject to compliance action. Remember, quota units for all retained species groups are transfer

Note; that in the case of a licence holder who is in an overcatch situation in June, the overcatch would need to be reconciled before the end of the licensing year. If due to exceptional circumstances, a licensee is not able to reconcile the over-quota amount, the justification for the delay will have to be provided to the Director in advance. This information will be considered in determining the enforcement action to be taken.

Fisheries may vary or amend a concession holder's entitlements in the current or subsequent year for any overcatch not balanced with uncaught quota, or discovered following conviction, or where Fisheries has reason to believe that catches were misreported. Licence holders may also face administrative penalties (i.e. Overcatch Notices) where catches have exceeded their quota holdings. Examples of the proposed reconciliation mechanism are provided at Appendix 3.

4.4.2 Spanish mackerel Over Catch-share Reconciliation

To ensure all Spanish mackerel catches are accounted for, once the ONLF 13.5 t Spanish mackerel catch share has been reached, individual ONLF operators will pay a fee (i.e. quota leasing, a % of cut (whole, trunk, etc.) beach price (e.g. 15%)) for each kilogram taken over the allocated 13.5 t. To actively discourage targeting under this scenario, but still encourage retention, the overcatch fee will increase 20% for every 5 t of overcatch over the 13.5 t limit up to a maximum of 55% overcatch fee.

The point of first sale prices for Spanish mackerel Trunk and Whole fish will be determined in July each year by Fisheries based on market returns from the previous calendar year. The overcatch fee will be credited into a secure Fisheries Fund Account and monies accrued used to offset annual licence fee costs equally for Spanish mackerel Fishery licence holders. The Licence Holder receiving the benefits from fishing will be invoiced regularly if overcatch provisions are activated. Note: To ensure integrity of the scheme is maintained, a licence cannot be renewed, nor will undercatch or ITQ be issued, until all outstanding fees and charges are addressed. This arrangement is also in place for other NT quota managed fisheries. Examples of the proposed reconciliation mechanism are provided at Appendix 3.

This mechanism is to be revoked when a permanent solution is developed from a review of SMF management arrangements planned commencing within three years as resources permit.

4.5 Undercatch Provisions

(eligible for Grey mackerel, Combined Blacktip Shark and Spot-tail Shark only)

Undercatch arrangements would be set in conjunction with TACC's for a fishing year. Any quota unit undercatch amount taking advantage of these arrangements is to be acquitted first and is valid for that year only i.e. carried over quota units are not eligible for carryover the following year. Undercatch provides relief to operators who encounter circumstances, within a fishing season, which prevent them from taking their quota for a species.

Quota holders are authorised to carry over eligible ITQ not taken during the current fishing period to the next fishing period, up to a maximum 10% of the sum of his annual quota unit allocation if applicable, plus any additional quota units purchased during the year, less any transfers. (See working example at Appendix 3) Note: the Undercatch mechanism is intended to assist an operator transition into the new scheme, will reduce to 5% in year three, and be set at 0% in year four.

5. Permitted fishing gear

Licensees are entitled to use the gear currently permitted in the fishery (demersal and pelagic long-lines, gaffs and pelagic net gear). Each Offshore Net & Line licence is endorsed to utilise long-lines and pelagic net in the fishery as currently permitted.

To make more efficient fishing operations, structured development of alternative or innovative gear types in the fishery is encouraged. As is the case now, all new gear being proposed for trial in the fishery will be subject to prior approval by Fisheries. Under the Fisheries legislation there is provision for permitting the possession of fishing gear which otherwise would not be allowed (a Section 17 permit). Applications for Section 17 permits must be made in writing on the prescribed form, and be accompanied by all relevant information supporting the application. The NTJFA has an endorsing role for S17 applications in NTJFA fisheries, and the permit is approved by the Director. Consideration must be given to the potential impacts of the gears on the environment.

The NTFJA will necessarily take a precautionary approach, in accordance with the principals of the *Fisheries Act* (*1988)* and will regularly monitor and review the overall impacts of the fishery on the resource. If the application is approved, validated fact finding trials could then be conducted on the gear by the operator to evaluate its potential impacts on the fishery's catch composition, other sectors, fisheries and the ecosystem.

6. Cryptic Mortality

Cryptic mortality refers to unknown or unreported mortality of a species. The main issues identified through this process are unresolved cryptic mortality uncertainty (including species identification), community perception issues relating to potential for high grading and potential discarding of unwanted fish and to a lesser extent, humane treatment concerns. Note: Spanish mackerel, taken as legitimate bycatch while targeting Grey mackerel in accordance with existing trip limits, may be kept whole, or trunked, but not filleted at sea to assist identification upon landing.

It is important to note that the practice of removing fins from live sharks and discarding of the body back into the sea is not permitted in Australia and is definitely not supported by any licence holders in the fishery.

7. Processing At Sea

To better address the cryptic mortality risk posed to the fishery, measures intended to reduce the potential of “finning’ (i.e. at-sea removal of fins from dead sharks and discarding the carcass) occurring have been introduced.

Currently the fishery operates under a fin to meat ratio system; which encourages operators to utilise as much of the animal as possible while recognising limitations caused by unintentional equipment failure, shark or lice bitten product and preserving as much practical and economic flexibility as possible within a professional fishing operation. However, processing at sea impedes the collection of accurate species-specific scientific data that are essential for monitoring catches and landings and implementing sustainable shark fisheries management.

Additionally, the NT settings for fin ratios have been criticised by a number of external stakeholders as not aligning with scientifically determined ratios. The argument being this allows poor operational and unreported practices to occur unless a robust and defensible monitoring program is in place. Additionally, there are significant differences in fin-to-carcass-mass ratios between species, fin sets or cutting procedure demonstrating that the ratios can be problematic. Having a rigorous validation process in place for the catch will be important as it provides confidence in the level of take, accuracy of species identification and of discard levels.

In order to facilitate proper enforcement and importantly, to enhance the communities confidence that species identification is as accurate as possible, and discarding and high-grading of animals is not occurring, all operators must land sharks with fins naturally attached (FNA). In the case of Hammerhead Sharks when 75% (i.e. 37 tonnes) of the nominal Scalloped Hammerhead TACC has been taken, a trip limit of 5 will apply and if there is no electronic monitoring in place, the heads need to remain attached to the body for accurate species identification. There is an acceptable exception to this rule, refer note below.

Note: an operator who believes they have a case for special circumstances (e.g. the lack of viable ports (GoC), remote nature of the fishing grounds and/or product quality / maintenance issues with on-board brine space and cold storage of whole/trunked animals) may apply to the Director for an exemption to the FNA rule. As each vessel setup is unique, the Director may assess each application on a “case by case” basis. If the Director believes the operator has a valid circumstance, he may grant a ‘conditional’ exemption to the FNA rule. However, in order to maintain the community’s confidence in the fishery, and not undermine the efforts of other fishers to improve the fisheries social licence, the operator would need to provide safeguards to ensure species were recorded accurately, no discarding of trunks/carcasses and the volume of fins matched the quantity of shark landed. To meet this requirement, Fishing Monitoring Equipment (FME) (e.g. electronic monitoring) is required for any vessel which has approval to remove fins at sea. Approved FME is defined in Fisheries Regulations and means equipment that is fitted to a vessel; a) to detect when and where fishing occurs, and b) to record catch information. The equipment may include, for example, sensors, a digital video camera and a computer system.

These two measures meet Marine Stewardship Council “80” requirements for robust external validation purposes, minimises cryptic mortality concerns, assists with species identification and is expected to significantly enhance the community’s confidence in the fishery. The Department is in the process of developing a set of protocols which will govern the

collection, storage, monitoring and sharing of information obtained by FME. It is not yet determined what level of viewing of the cameras there will be, but is expected to be similar to other States / Cth processes (e.g. 10% viewing as a base and additional if issues are detected); however, the level needs to comply with accepted scientific rigour in order to achieve the goal (i.e. validate the logbook information) and meet community expectations. To reduce the storage costs for large volumes of footage, it is proposed to delete footage not required for prosecution purposes after three months of the review. Any information collected by these methods is confidential with only non-commercial in confidence information and agreed outcomes with a summary discussed at ONLAG.

It is intended to continue to encourage full utilisation of sharks under the new scheme and each licence is proposed to have revised conditions attached as outlined below;

"A person, during the conduct of a fishing operation under a licence or permit, shall not discard a Shark unless he/she reports the reason (e.g. equipment failure, no marketability or lice bitten) and subsequent discards on the logbook returns."

7.1 Minimum trip holdings

Minimum quota unit holdings for each of the species groups are required for the licence holder to enter the fishery (i.e. go fishing). The requirement for minimum holdings is recognition that as demonstrated historically the proposed quota target species cannot be caught in isolation from other species. The level to which minimum holdings are set is important as the appropriate level will minimise incentives for high-grading of target or high value species and discarding of less valuable species and for managing access to more vulnerable species in the ONLF.

To ensure effectiveness the amount of minimum holdings generally represents one and a half times the amount of fish that could be expected from a productive trip. Additionally, the makeup of the minimum holdings quota should represent the types of species the operator is likely to catch while fishing. Minimum holdings also reduce compliance monitoring and analysis costs and assists with limiting overcatch and subsequent reconciliation issues. Operators who take in excess of allocated quota not only undermine the principals of the NT *Fisheries Act*, it also affects the integrity of other operators' holdings.

Important note

Sufficient quota must be held to cover the entire catch for each trip. The onus is on licence holders to ensure that they check their quota balance thoroughly and regularly and report any discrepancies or errors to Fisheries.

7.2 Demersal and Pelagic Longline Minimum Holdings

When Demersal or Pelagic Long-line gear methods are used, a total minimum holding of 13,700 kgs will apply. This minimum holding comprises:

Combined Australian Blacktip Shark species (36%*of 13,700 kgs), rounded off to:	**5000** kgs**
Spot tail Shark species (12%* of 13,700 kgs), rounded off to:	**1600** kgs**
Combined Shark species (35%* of 13,700 kgs), rounded off to:	**4700** kgs**
Combined Other Shark Group (17%* of 13.700 kgs), rounded off to:	**2400** kgs**

* These figures will change as the catch composition average changes over time.

**Figures rounded off to the nearest 100 kg.

7.3 Pelagic Net Minimum Holdings

When Pelagic Net gear methods are used to target Grey mackerel, a total minimum holding of 4,500 kgs will apply. This minimum holding comprises:

Grey Mackerel species (60%* of 4,500 kgs), rounded off to:	**2700** kgs**
Combined Australian Blacktip Shark species (23%* of 4,500 kgs), rounded off to:	**1050** kgs**
Spot tail Shark species (5%* of 4,500 kgs), rounded off to:	**250** kgs**
Combined Shark species (3%* of 4,500 kgs), rounded off to:	**150** kgs**
Combined Other Shark Group (2%* of 4,500 kgs),, rounded off to:	**50** kgs**
Combined Finfish Group (7%* of 4,500kgs), rounded off to:	**300** kgs**

* These figures will change as the catch composition average changes over time.

**Figures rounded off to the nearest 50 kg.

When Pelagic Net gear methods are used to target Sharks, a total minimum holding of 6,500 kgs will apply. This minimum holding comprises:

Combined Australian Blacktip Shark species (~58%* of 6 500 kgs), rounded off to:	**3700** kgs**
Spot tail Shark species (~12%* of 6 500 kgs), rounded off to:	**800** kgs**
Combined Shark species (~9%* of 6 500 kgs), rounded off to:	**600** kgs**
Combined Other Shark Group (~2%* of 6 500 kgs),, rounded off to:	**150** kgs**
Grey Mackerel species (~17%* of 6 500 kgs), rounded off to:	**1100** kgs**
Combined Finfish Group (~2%* of 6 500 kgs), rounded off to:	**150** kgs**

* These figures will change as the catch composition average changes over time.

**Figures rounded off to the nearest 50 kg.

The level of minimum ITQ holdings are intended to be set so as not to prematurely place inappropriate restrictions on operators, i.e. not so large as to restrict entry to the fishery, but sufficient to discourage high-grading and issues associated with unrestricted access to non-quota species.

A licensee must ensure minimum ITQ holdings for each species group is held prior to commencing a voyage. Suitable penalties for non-compliance of these provisions will be imposed.

7.4 Mechanism to determine average catch composition for each species group

It is anticipated that the catch composition of the fishery may change with the introduction of ITQ. To monitor this change, the catch composition for each gear will be reviewed annually by Fisheries. Fisheries will determine the average catch composition for each gear type and quota species group using the fisheries catch composition rolling average for the last three years. Consideration will be given to any economic impacts of proposed changes to Minimum Holdings.

This section is included to clarify the process for reviewing minimum holdings amounts. There is no cost to industry in this process.

8. Bycatch

All Combined bycatch species currently have a review trigger of 10% of the total annual catch for the Offshore Net & Line fishery.

Additionally, to reduce unnecessary discarding and encourage better utilisation of sharks, it is intended to maintain an individual vessels bycatch to less than 20% of the total fisheries estimated bycatch in any one year. The measure is designed to provide an individual operator incentive to develop markets for a range of mixed species and not to discard other target species (e.g. when Grey mackerel fishing). However, if there is an individual operator deliberately discarding target species thus risking the fisheries social licence, this unsustainable practice will trigger additional monitoring to review their operations. It is agreed the operations review and education cost should only be borne by the individual operator, not shared with other operators in the fishery.

Fisheries will periodically review the fishery's catch composition to ensure the bycatch triggers are maintained at an appropriate level. There is no cost to industry in this process. If concerns arise over combined group, bycatch or other catch issues the information may be sought from an operator suspected of being in breach seeking him to 'show cause' as to why an observer should not be placed on his vessel to monitor his fishing activities at his expense.

8.1 Byproduct

These combined species groups are the Combined Shark, Combined Other Shark and Combined Finfish Groups. In recognition of emerging research needs for vulnerable species as identified by the ONLAG, triggers to review emerging species within the Combined Shark Species group, Combined Other Shark Group or the Combined Finfish Group species are developed in the Harvest Strategy.

9. Reporting

Logbooks currently record individual species by number and weight. Bycatch species are recorded by weight. Observer data is often used to verify logbook data. To enable the timely identification of individual species, logbooks will be completed daily and provided to Fisheries within twenty eight days of the end of the month. Electronic logbook (e-logs) are available and strongly recommended for use where daily catch and effort information can be submitted electronically to Fisheries by email when in port. This program has been field tested and is currently being rolled out across the fleet in 2018. Monthly market detail logbooks shall remain as currently provided; i.e. within twenty eight days of the end of the month.

To minimise 'offshore' compliance costs, enforcement of the quota system will be assisted through the licensee completing a Catch Disposal Record (paper, CDR) designed to record weights of fish unloaded (Fisheries Act s34). The design and printing of the CDR is being finalised for use in the ONLF, and is similar to that used in the nearby offshore snapper fisheries. A key difference in the interim (at least until e-logs are commonly used), will be reporting of Spanish mackerel, Scalloped and Great Hammerhead weights on the CDR's in addition to the Combined Species Groups. A mechanism to report notices electronically is currently being explored through the vessel monitoring system and e-log system and may provide operators an alternative to paper forms.

9.1. Monitoring

The current base-level of observer coverage (funded by government) is to be maintained to minimise the communities' concerns and uncertainty relating to perceived cruelty to animals, discarding, cryptic mortality, and provision of adequate species identification training or monitor changes in fishery practices anticipated under a quota system.

In order to ensure sufficient validated information is gathered and to meet community expectations, it is intended that the department maintain the current level of observer coverage funded by the department. The framework reflects this requirement with one government funded observer trip conducted in the fishery for each 20% of combined TAC taken, or ~300t combined catch, up to a combined catch of 60% of combined TAC taken, or ~900t, e.g. current levels. As the fishery develops beyond this point, industry funds observer trips on a risk basis or as required (e.g. ~every 20% over 60% of combined catch).

To address increased risk to sustainability with increasing harvest levels, there is fishery wide observer monitoring initiated by harvest rules developed for each species (or species groups). Note: if the fishery does not develop beyond the current harvest levels, additional monitoring is not triggered under these harvest rules, therefore costs to industry are contained. It is anticipated that these proposed monitoring levels will promote community confidence and minimise cryptic mortality concerns. (Refer Appendix 1).

To ensure effective enforcement of quota, it will be a requirement that all unloading of catch by operators be carried out in Darwin or Nhulunbuy (may be additional compliance costs for operators using this port). As is the case in other NT quota managed fisheries, a licensee may apply to the Director seeking approval to unload quota species in another port in special circumstances (e.g. cyclonic weather, approved mother-boat or crew safety concerns, etc.) to be outlined in a brief written application.

Individual operators who wish to unload catch in another port (e.g. Karumba) on a more permanent basis may apply to the Director for approval as is the case in other NT quota managed fisheries. Approval to this scenario will require the operator to establish an approved alternate compliance monitoring regime (e.g. Compliance Officers or installation of Fishing Monitoring Equipment) to maintain integrity of the Quota system and fishery regulations. Any additional monitoring costs would be borne by the requesting operator (i.e. via the Level 2 mechanism), not borne by the ONLF fishery as a whole. Note: if the vessel has approved fishing monitoring equipment installed to comply with an exemption to the FNA rule or approval to unload to a mother-ship (for example), any additional monitoring costs would likely be minimal.

No quota species (or their products) intended for sale will be allowed on board a vessel upon commencement of a voyage. This is required to assist enforcement activities and will greatly reduce the cost of ensuring compliance with the management arrangements. However, as is the case in other NT quota managed fisheries, a licensee may apply to the Director seeking approval to store quota species on board in special circumstances (e.g. on-board storage of product for export etc.) to be outlined in a written application.

9.2 Vessel Monitoring Systems (VMS)

Vessel Monitoring Systems are installed to all vessels operating in the ONLF. This system would provide for accurate, real-time monitoring of a vessels location and two-way transfer of data between the Fisheries monitoring office and the vessel.

The introduction of VMS into the ONLF, along with the Timor Reef and the Demersal fisheries enable cost-sharing of VMS related establishment, administration and monitoring costs and provide a cost effective monitoring alternative to observers. VMS administration costs are to be funded by Fisheries for the first licensing year (or remainder of) to enable the fleet transition into the new arrangements. Note: this cost-sharing approach was recently used to introduce VMS successfully in the Barramundi Fishery. Additionally, the Department is working closely with Parks Australia to explore VMS monitoring cost-sharing options for

when vessels are in an Australian Marine Park. A Technical Fact Sheet explaining VMS is available from Fisheries upon request.

9.3 Scales and weights to be used when quota species are unloaded from vessel.

An operator must not unload or attempt to unload product for sale unless the fish is in a standard product form (e.g. whole or trunked (FNA) or pieces or fillet (under a FNA exemption). An operator must not unload or attempt to unload quota species for sale unless the operator has in his or her possession a suitable trade weight for the purpose of testing the scales used by the operator to weigh quota species. On any day that a quota species is weighed, the operator must use the suitable trade weight to test the scales for accuracy before weighing the quota species. Note: product for sale must be weighed on certified scales. If product is weighed and bagged/boxed at sea, certified motion compensated scales must be used and a label applied to each product box or container displaying species name, cut (whole, trunked, fillet etc.), nett weight, vessel name / licence number, along with date caught. Compliance Officers will randomly monitor weights as the cartons etc. come off the vessel at unload. A contravention of this clause is proposed to be an offence.

After testing the scales with the trade weight, it is permissible to 'tare' off the scales using an empty product container (dry), lid (if applicable) and plastic liner before weighing the product off the vessel. Observers or Compliance Officers will randomly monitor this process and significant penalties may be applied if fraud is evidenced.

9.4 Transfer of catch between vessels

In order to ensure that the compliance and administrative issues of the arrangements can be simplified, the plan will not allow for transhipping of product without prior approval.

However, operators working in remote regions of the NT (e.g. GoC), may apply to the Director seeking annual approval to tranship quota species at sea to an approved mother boat to be outlined in a written application. Any additional monitoring costs would be borne by the requesting operator (i.e. via the Level 2 mechanism), not borne by the ONLF fishery as a whole. Note: if the vessel has approved fishing monitoring equipment installed to comply with an exemption to the FNA rule or approval to unload in Karumba (for example), any additional monitoring costs would likely be minimal.

10. Costs

There will be some additional financial costs to Government and industry as the Offshore Net and Line Fishery moves to a Quota Management System (QMS). With QMS, the timing of CDR data entry becomes critical to effective monitoring of quota allocations. Additionally, strict enforcement of fishing zones and catch landings to ensure compliance becomes critical to maintain transparency and confidence in the TACC. This will require additional resources.

Government is unable to support, on behalf of the community, any increase in current management costs that are associated with implementation of QMS into the Offshore Net & Line Fishery (other than assistance with VMS setup costs and transition scheme as proposed in section 9.2).

A licence fee and levy quota cost recovery system has been developed as a guide for setting up a similar cost recovery process for the Timor Reef & Demersal quota fisheries, and now, the ONLF fishery. Fisheries will review operating costs annually in collaboration with industry.

10.1 Review of Current costs

Fisheries have reviewed research, management and administration costs associated with the current administration of the fishery. Fisheries fund three monitoring trips per year, a portion of a manager's time (generally risk-based evaluation of operations, assessment of operations with alignment to communities expectations and reviews appropriateness of policy and legislation), a portion of a scientist's time (generally in-depth analysis of fishery) and licensing, vessel registration and logbook data entry and verification.

The current costs of administering the Offshore Net & Line Fishery are not included in the additional costs referred to in section 10.2. Note: Transfers of units between licensees are not expected to be administratively onerous and it is not proposed to set a transfer fee. New costs identified as a consequence of moving to quota are outlined below.

10.2 Additional Administration, Management, Compliance and Research costs

A change to ITQ management generate some additional costs to government and industry. There may be further costs yet to be identified or uncovered as implementation of ITQ is advanced in the fishery. These costs are additional to those costs attributed to breaches and triggers of management objectives and performance indicators.

Additional 'one off' and ongoing management needs which have been identified and preliminary costings are detailed below;

- Design and printing of Catch Disposal Record logbooks
- Provision for logbook and licensing operator resources (costs can be shared with TRF & DF operators) to enter and acquit units/quota and CDR data, Note: uptake of e-notices will be reviewed annually and could significantly reduce the ongoing cost by up to 15%.
- Database maintenance 3% (Offshore Net & Line ITQ component) of database budget
- Compliance Costs, incl. vessel monitoring resource costs, Note: uptake of e-logs/e-notices to be reviewed annually and could significantly reduce the ongoing cost by up to 15%.

Additional ongoing costs have been identified. There are potential savings from more efficient reporting processes if e-notices are utilised throughout the fleet (e.g. e-Catch Disposal Records and e-notices) which lower the ongoing costs.

Important Note: Fisheries will offset VMS administration setup and monitoring costs to industry for the first year of operations to assist with transition into the new scheme, similar to the transition scheme utilised for the Barramundi Fishery.

10.3 Cost sharing mechanisms

Revenue raising measures required to share additional costs from industry would start as soon as the scheme is implemented into the fishery. If the scheme is implemented prior to the start of a licensing year, costs will be recovered on a pro-rata basis.

Note: the Northern Territory Seafood Council (NTSC) levy, currently collected at licence application or renewal time by Fisheries on behalf of the NTSC, will not be affected by these measures. Licence holders will need to factor the NTSC levy into licence renewal costs upon application / renewal.

10.3.1 Recovery of 'Once off' start up management costs

There are no identified 'one-off' start-up management costs. Fisheries will offset VMS administrative setup and monitoring costs to industry for the first year of operations to assist with transition into the new scheme, similar to the transition scheme utilised for the Barramundi Fishery. The work required to restructure the fisheries database and establish administrative mechanisms have been largely completed by existing quota fisheries (TRF & DF).

10.3.2 Recovery of 'on-going' Management Costs

Annual licence administration fees will be retained and increases to those fees annually by CPI to offset existing costs to government (i.e. the current 'base level' fee for an **A5** licence is $1190 for 2018-19).

Additionally, determination of a licence holder's 'on-going' additional costs **after** the first year will be from the Level 1 mechanism of cost recovery (described below) and their licence fee each year will be adjusted accordingly: i.e. Based on a licence holders unit holdings for each species group, not just holding a licence.

10.3.3 Proposed Mechanism for funding Decision Rules Management Response

Management actions need to be clearly defined and costs estimated in order to develop an acceptable, agreed system of cost sharing.

This will be done for each management action and will sit behind the Performance Measures (refer to the Harvest Strategy under Appendix 1). Proposed Management Responses (MR) for specific breaches of the Trigger Points (TP) relating to Performance Measures (PM) has been developed. In the attached PM table, each MR has been allocated a number (MR1, MR2, etc.) to distinguish it from other MR's following a breach of a PM.

A cost recovery mechanism proposed to recover 'on-going' additional management costs based on a licence holders fishery unit holdings, is described below in section 10.3.4 (Level 1).

In addition, a staged cost recovery system will be applied when a trigger point is breached. The costs to be recovered from an individual operator can be a fixed cost per day for an observer to go on a vessel (Level 2). Refer to Appendix 2 for working examples of the cost recovery mechanisms.

10.3.4 Level 1 mechanism

A Level 1 cost recovery mechanism is proposed to recover 'on-going' additional management costs after the first year, plus CPI increases, including some monitoring and compliance costs. Note: Licences will not be renewed, nor will Undercatch or ITQ be allocated until all outstanding fees and charges are addressed.

10.3.5 Level 2 mechanism

A Level 2 cost recovery mechanism to recover the cost of an observer = ~ 700 penalty units / day will be implemented. When Level 2 is applied, costs will be recovered through the issue of an Invoice payable before the next quota allocation can be issued. Note: the number of observed fishing days on the trip should be at least as long as the average number of fishing days for the past 3 voyages. If the observer monitors less than this amount of time, and the

information gathered is not sufficient to adequately address the reason for the trip, the fisher may be required to repeat the exercise at the discretion of the NTFJA.

10.3.6 Management Costs Recovery Summary

Recovery of costs is via the three Level mechanisms. Level 1 is used to recover 'on-going' additional costs; Level 2 is used to recover the cost of an observer (to an individual licence holder) and Level 3 to recover monitoring, research and compliance costs for analysis and reports.

Cost sharing arrangements in the **first** full year of quota in the ONLF fishery are estimated to be ~$xx xxx. A licence holders share of the on-going additional cost of $xx xxx (the base Level licence fee for 2018-19 has already been received) is levied pro-rata based on proposed fishery unit holdings for each species group. This levy will be payable on re-issue of the licence or pro-rata on the commencement of the Regulations.

On-going additional administration costs from year 2 are comprised of the estimated on-going additional costs + base Level licence fee for 2018-19 + CPI and will be recovered from the Level 1 method of cost recovery. These costs will be evaluated each year by the department and amended if required. Compliance and administration costs are also reviewed each year and as a result, estimates may change.

11. Additional Considerations

The Offshore Net & Line fishery gears and operating practices have been independently assessed by the Department of the Environment and Energy (DoEE) for environmental sustainability and the fishery granted a six month Wildlife Trade Operation (WTO).

The current exemption extends until 29 March 2019. Details of the WTO can be accessed from the Department of Environment and Energy website[1].

DoEE supports the continued reporting of future assessment needs for each fishery, but reinforces the requirement for Fisheries to advise DoEE of any intended change to the NT ONLF management arrangements, including legislated amendments that may affect sustainability of the target species or negatively impact on group, bycatch, protected species or the ecosystem.

In addition to the 'normal' environmental accreditation processes, the Convention for International Trade in Endangered Species (CITES), Threatened Species Scientific Committee (TSSC) has also conducted a Non-Detriment Findings assessment on Hammerhead species caught in Australian waters including the ONLF. In coming to an interim positive Non-Detriment Finding, the TSSC has noted the proposed changes to the ONLF management arrangements, as outlined in this framework, would be required to be implemented to retain a positive NDF. Failure of the ONLF to gain a positive non-detriment finding may lead to the WTO accreditation being withdrawn and the fishery having significant harvest restrictions implemented. Further information, including a list of species for which non detriment findings have been issued and the fisheries from which they may be sourced, is available from the Department of Environment and Energy – Biosecurity website[2].

In coming to an interim positive NDF for Hammerheads, the TSSC noted that fisheries interacting with Hammerhead species would need to have recognised measures in place to validate reporting, ensure accuracy of species identification and to quantify discards. Recent

[1] http://www.environment.gov.au/marine/fisheries/nt/offshore-net-line
[2] http://www.environment.gov.au/biodiversity/wildlife-trade/cites

advice from the TSSC noted there is recognition that much has been done (and is planned) to sustainably manage shark, however, TSSC, based on provisional advice, is of the view that the current rules in place are not sufficient to support a conservation dependant listing. They also noted that a number of additional measures would be required before September 2017 to support the consideration of a conservation dependant listing (catch limits, verification of catch and discards, monitoring etc.), Australian, Queensland, Northern Territory governments and the Great Barrier Reef Marine Park Authority are working together to ensure a consistent approach across jurisdictions wherever possible.

Appropriate measures to accommodate the TSSC's directives were developed by ONLAG, along with measures to record Threatened, Endangered and Protected Species interactions are included into this framework.

A harvest limit of 50t for each CITES listed Hammerhead species has been introduced. At this limit, if fishers can't demonstrate a negligible catch of hammerheads (through observance) they will have to cease fishing. To ensure this limit is not exceeded, appropriate measures would be implemented to control harvest when catches reach 75% (or 37.5 t) for any of the species if required. These measures include trip limits and retention of heads and fins on body upon landing, unless the vessel has approved monitoring equipment operating on vessel and has an exemption to the FNA rule issued by the Director.

DoEE is aware of the ONLF developing a formal management framework with an accompanying Harvest Strategys. In the event that this framework is adopted, Fisheries will need to seek re-accreditation under Part 13 and Part 13A of the *Environment Protection and Biodiversity Conservation Act 1999* for the new management plan as the current accreditation would be deemed invalid.

Appendix 1 - Offshore Net and Line Fishery Harvest Strategy

This document describes the draft Harvest Strategy (the Strategy) for the Northern Territory Offshore Net and Line Fishery (ONLF). The Strategy is to be read in conjunction with the 'Management Framework' for the fishery and forms a major component of the management plan for the fishery.

A formal review of this Strategy will be undertaken within five years. The Strategy must be sufficiently flexible to address deficiencies, unforeseen circumstances and to allow for improvements but should not be changed to relax or vary the Strategy when the decisions are not suitable to some, or all, stakeholders.

Biological performance indicators are essential to ensure that harvest is sustainable. As knowledge improves and the social and economic characteristics of the fishery are more thoroughly understood, a broader set of operational performance indicators (to measure outcomes against the operational objectives of the fishery) will be developed and incorporated into future iterations of the Strategy.

Introduction

This Strategy has been developed in line with national guidelines and the 'NT Harvest Strategy Policy'. It provides a structured framework for decision making to ensure that ESD objectives are achieved. The Strategy is designed to implement a precautionary approach to managing the Fishery that promotes stock sustainability, and provides certainty and stability for industry. The decision making framework involves two key steps to be undertaken annually at the appropriate time:

- The biological performance indicators are used to assess the current status of the fishery resource.
- The decision rules are utilised to guide the management action process that ensures the fishery resources are harvested within ecologically sustainable limits.

Operational Objectives

Operational objectives have been established to ensure the operation of the fishery is working towards achieving the long-term fishery goals. The operational objectives directly relate to retained and non-retained species, ecosystem impacts and social aspirations of the fishery. The operational objectives are more precise than the long-term fishery goals and are formulated in a way that can be easily assessed.

Performance Indicators and Reference Points

Performance indicators have been established for each operational objective and will be used to measure fishery performance with respect to achieving the objectives (by comparing where the indicator sits in relation to a linked reference point). The performance indicators vary according to which fishery region, species and ecosystem effect is being monitored.

The following reference points are used to assess fishery performance in this harvest strategy in accordance with the *NT Fisheries Harvest Strategy Policy*:

- **Target Reference Points (Target)** define the values of a performance indicator for a fish stock or management unit that are desirable or ideal and at which management should aim.
- **Trigger Reference Points (Trigger)** define the value of a performance indicator for a fish stock or fisheries management unit where risks are elevated and at which a change in the management is considered or adopted to address those risks. Trigger reference points can be used to determine staged management responses to different stock levels or to define when a stock or management unit is transitional-depleting or transitional-recovering.

- **Limit Reference Points (Limit)** define the value of a performance indicator for a stock or management unit that are considered unacceptable. For example, when a stock or management unit has become recruitment overfished or environmentally limited.

Stock Assessment – Target species

A key operation objective of this strategy is to maintain the biomass of target species at sustainable levels. Biomass targets will be utilised as the primary biological performance indicator for target species: blacktip sharks, grey mackerel and spot-tail sharks. Fishing mortality will be reviewed every two years by conducting a stock assessment for each of these species. The catch of a species from all sectors and biological information will be used to inform stock assessment models. Modelling approaches assess the impact of harvests by estimating the change in biomass through time, providing a reasonable estimate of the impact of current harvest against the harvest rate required to achieve Maximum Sustainable Yield (MSY).

If an assessment demonstrates that the biomass of a target species has declined to undesirable levels, as determined by the breach of either trigger or limit reference points, management actions will be enacted to return the biomass to target levels. A reduction in Total Allowable Commercial Catch (TACC) for the relevant species is the primary management action used under this strategy. The reduction in TACC will be informed by model outputs, taking into account the overall decline in biomass and the steepness (rate) of decline. The proposed TACC reduction may also be tested by future projections of the assessment under the revised TACC to ensure that the management action will allow stocks to recover to target levels.

Catch Per Unit Effort (CPUE) – Target species

CPUE is recognised by industry and managers as a measure of relative abundance that is reliable and well understood. CPUE will be standardised using a General Linear Model (GLM) to incorporate the impact of variables that influence catch rates. Standardised yearly commercial CPUE, derived from commercial logbook data, will be used as the second biological performance indicator for target species on alternate years (when not undertaking stock assessments).
External factors not related to stock abundance can from time to time influence CPUE. To ensure CPUE is providing an accurate as possible measure of fishery performance, industry will be given an opportunity to provide factual and credible evidence to interpret the impacts these external factors may be having. The external factors that may be considered include:

- fluctuations in species prices
- environmental/weather pattern influences
- logistical costs
- fluctuations in fuel prices.

SAFE assessments – Secondary, tertiary and by-catch species

SAFE assessment uses information on species biology, species distribution area and total area of fishing
(Zhou and Griffiths 2008). Observer monitoring reports are used to determine the species composition for the assessment. The distribution of most of these species is obtained from the Atlas of Living Australia, which is modified to fit within the areal distribution of the fishery. Swept area of the fishery will be calculated by using daily logbook data.

The species biology parameters of growth rate, maximum size and age required by the assessment are obtained from the Fishbase database or known estimates from previous research. Estimates of catchability are based on those determined for prawn trawls. The output from the SAFE assessment provides a risk rating for each tertiary species as to whether the risk of overfishing is low, moderate, or high.

An annual SAFE assessment will be utilised to review and monitor the risk of overfishing of finfish secondary species, apart from Spanish mackerel, which are explicitly addressed in a catch sharing management arrangement with the Spanish Mackerel Fishery.

Biological performance indicators for Threatened, Endangered and Protected species populations

Observer and logbook reporting, and electronic monitoring will be utilised to monitor interaction levels with TEPs in the fishery. Additional assessments will be undertaken in the Ecological Risk Assessment (ERA) process where the ERA aims to ensure the management of the Fishery is effective and efficient in achieving Ecological Sustainable Development (ESD) outcomes. The principles of ESD form the basis of aquatic resource management in the Northern Territory and meet the statutory requirements of the NT *Fisheries Act 1988* (the Act) and national environmental legislation. This approach also provides the fishing industry and key stakeholders with an opportunity to shape future fisheries management outcomes.
The issue identification, risk assessment, and reporting process and the final report format is based on the
National ESD Framework *How To Guide* (see www.fisheries-esd.com.au) and the Department of Fisheries Western Australia ESD performance reports pioneered by Dr Rick Fletcher and other Western Australian Fisheries staff.

Biological performance indicators for impacts to the habitats and ecological processes

As the Fishery is still at a relatively undeveloped stage, it is too early to conduct sophisticated ecosystem modelling within the timeframe of the review period for this Management Framework. Future versions of this framework may consider ecosystem impact modelling (e.g. atlantis, ecosim etc).
In the interim, Periodic Risk Assessments incorporating current management arrangements, catch levels, extent of fishing activities, ecosystem information and available research will be utilised to monitor impacts to habitats and ecological processes in the fishery.

SAFE assessment reference points

SAFE assessments estimates two fishing mortality parameters based on the natural mortality of the species. FMSM is the instantaneous fishing mortality rate that corresponds to the maximum number of fish in the population that can be killed by fishing, yet the population remains sustainable in the long term. FCRASH is the minimum unsustainable instantaneous fishing mortality rate that, in theory, will lead to the population extinction in the long term. FMSM is equivalent to FMSY and the relationship with natural mortality differs between Chondrichthyans and teleosts (Chondrichthyans, 0.41M and Teleosts, 0.87M).
The SAFE assessment looks at the overlap of the fishery with a species distribution and provides a Low, Medium or High risk rating. These ratings relate to the fishing mortality parameters and have been adopted as reference points as outlined below:

- Target = Low risk: F < Fmsm
- Trigger = Medium risk (M): Fmsm<= F < Fcrash
- Limit = High risk: F >= Fcrash.

Decision rules

The decision rules used in this Harvest Strategy provide direction for pre-determined management actions to achieve the operational objectives. For each performance indicator and reference point, an accompanying decision rule directs the management needed to achieve the operational objectives. These decision rules are designed to maintain the performance of the indicator above the trigger point (i.e. within the target range), or rebuild it where it has fallen below the trigger (undesirable) or the limit (unacceptable) points.

Decision making process and timelines

The process of reviewing each stock and fishery performance against the Harvest Strategy will be undertaken annually.

To enable the Harvest Strategy decision rules, flexibility provisions will be built in to the Offshore Net and Line Fishery Management Plan, which will enable the Director of Fisheries to impose species, temporal or spatial amendments at any time to enact Harvest Strategy decision rules through Ministerial Guidelines and/or conditions applied to licences.

Offshore Net and Line Fishery Harvest Strategy

Table 1. Harvest Strategy performance indicators, reference points and decision rules for the ONLF.

Management objective	Operational objective	Performance indicator	Review period, monitoring period	Reference points	Management action
				Target	
1. Maintaining the biomass of target species at sustainable levels	Ensure the biomass of Grey mackerel is higher than B_{48} (two stocks North West and Gulf Of Carpentaria)	Biomass	Every two years, Stock Reduction Assessment output	Target: B_{48}	Continue management aimed at achieving agreed ecological, economic and social objectives
				Trigger: B_{30}	Reduce previous year's TACC by 10-30% in the next Fishing season
				Limit: B_{20}	Cease targeting of this species within one month of notification
	Ensure the biomass of Black tip shark is above B_{60}	Biomass	Every two years, Stock Reduction Assessment output	Target: B_{60}	Continue management aimed at achieving agreed ecological, economic and social objectives.
				Trigger: B_{40}	Reduce previous year's TACC by 10-30 % in next fishing season.
				Limit: B_{20}	Reduce previous year's TACC by 30-50% in next fishing season
	Ensure the biomass of Spot-tail shark is higher than B_{48}	Biomass	Every two years, SRA output	Target: B_{48}	Continue management aimed at achieving agreed ecological, economic and social objectives
				Trigger: B_{30}	Reduce previous year's TACC by 10-30 % in next fishing season
				Limit: B_{20}	Reduce previous year's TACC by 30-50% in next fishing season
				Secondary species	

2. Maintaining the catch of secondary species at sustainable levels	Maintain sustainable catches of large sharks (*Galeocerdo cuvier, Negaprion acutidens, Carcharhinus leucas, C. amboinensis, C. brevipinna, C. plumbeus, C. obscurus, Eusphyra blochii, and C. amblyrynchos*)	SAFE Assessment	Annually	Target: Low risk of overfishing output from model	Continue management aimed at achieving agreed ecological, economic and social objectives.
				Trigger: Moderate risk of overfishing output from model	Determine casual factors behind change, review catch composition of combined shark quota group and implement proven, evidence based management measures.
				Limit: High risk of overfishing output from model	Implement proven, evidence based management measures to prevent targeting of high risk species.
	Ensure that fishing pressure is sustainable on stock of small sharks (*Eg Phixopriodon acutus, Carcharhinus macloti and C. coatesi)*	SAFE Assessment	Annually	Target: Low risk of overfishing output from model.	Continue management aimed at achieving agreed ecological, economic and social objectives.
				Trigger: Moderate risk of overfishing output from model	Determine casual factors behind change, review catch composition of combined other shark quota group and implement proven, evidence based management measures.
				Limit: High risk of overfishing output from model	Implement proven, evidence based management measures to prevent targeting of high risk species.
	Manage sustainable catches of Combined finfish group	Catch	Monthly, logbook information, observer data, catch disposal records	Target: Low risk of overfishing output from model	Continue management aimed at achieving agreed ecological, economic and social objectives.
				Trigger: Moderate risk of overfishing output from model.	Determine casual factors behind change, review catch composition of combined other shark quota group and implement proven, evidence based management measures.
				Limit: High risk of overfishing output from model	Implement proven , evidence based management measures to prevent targeting of high risk species.

	Identify if secondary species are being targeted	Species catch % compared to total catch	Annually, logbook information, Observer data	Target: Individual species catch ≤2% of total catch.	Continue management aimed at achieving agreed ecological, economic and social objectives.
				Trigger: Individual species catch > 5% of total catch.	Trip limits are set at an appropriate level for incidental catches within six months.
				Limit: Individual species catch > 10% of total catch	Species moves to target species assessments in the next fishing season.
Bycatch					
3. To ensure fishing impacts do not cause irreversible harm to bycatch populations	Ensure that fishing pressure on stocks of bycatch species is sustainable	Risk of overfishing	Every four years SAFE assessment ERA	Target: Low risk of overfishing output from model.	Continue management aimed at achieving agreed ecological, economic and social objectives.
				Trigger: Medium risk of overfishing output from model.	Implement proven evidence based management measures within one month to return performance indicator to target.
				Limit: High risk of overfishing output from the model.	Cease fishing in the area of concern and review the need for more defined management actions to return reference point to the Target
4.To ensure fishing impacts does not result in serious or irreversible	Maintain or reduce interactions above the level that would cause detectable	Interaction levels	Annually, Logbook information, Observer data and electronic monitoring	Target: Interaction levels are considered to not be impacting individual populations as reviewed by ONLAG.	Continue management aimed at achieving agreed ecological, economic and social objectives.

harm to Threatened, Endangered Protected Species (TEPS) populations	impacts to TEPS populations			Trigger: Interaction levels are determined to be at the maximum acceptable for individual stocks, as reviewed by ONLAG .	Undertake review to determine reasons for increase interactions Increase amount of observer coverage (human or camera footage review) to 20%. If issue identified go straight to limit management actions.
				Limit: Interaction levels are considered to be causing further reductions on individual stocks, as reviewed by ONLAG	Implement species specific proven and evidence based mitigation measures to decrease interaction levels
		Risk of impact to TEPS populations	Ecological Risk Assessment	Target: Fishing impacts expected to generate an acceptable risk level to TEPS populations, i.e. moderate risk or lower	Continue management aimed at achieving agreed ecological, economic and social objectives
				Trigger: Fishing impacts are considered to generate an undesirable level of risk to any TEPS populations, i.e. high risk	Undertake a review within three months to investigate the options to reduce the risk.
				Limit: Fishing impacts are considered to generate an unacceptable level of risk to any TEPS populations, i.e. severe risk	Implement appropriate management action as soon as practicable to reduce the risk to an acceptable level before the next season.

5.To ensure fishing impacts do not result in serious or irreversible harm to Conservation Dependant species	Ensure Scalloped Hammerhead shark catches are maintained within sustainable limits	Catch	Annually, Logbook information, Observer data, Catch disposal records	Target: Annual Harvest < TACC (50 t)	Continue management aimed at achieving agreed ecological, economic and social objectives
				Trigger: Annual Harvest reaches 75% (37 t) of TACC	Inform operators of harvest levels, all Hammerhead Shark heads to remain attached when no monitoring in place
				Limit: Annual Harvest > TACC	Cease all fishing once TACC is reached
Habitats					
6. To ensure that fishing impacts do not result in serious or irreversible harm to habitat structure and function	Maintain or reduce interactions above the level that would cause detectable impacts to habitats	Area overlap of fishing activity with habitat	Ecological assessment, extent of fishing activities, habitat distribution. Habitat mapping and maps of geometric features (Harris et al. 2005).	Target: Habitat impacts are confined to <5% of any habitat type	Continue management aimed at achieving agreed ecological, economic and social objectives
				Trigger: fishing impacts exist on > 20% of any habitat type.	Specific area closures will be implemented on 'at risk' habitat identified by bottom mapping.
				Limit: Fishing impacts exist on > 30% of any habitat type	Sufficient area of this habitat type will be closed to gear that interacts with the bottom to reduce the impact to <30%.

Ecosystems					
7. To ensure the effects of fishing do not result in serious or irreversible harm to ecological processes	Maintain or reduce interactions above the level that would cause detectable impacts to ecosystem function	Risk of detectable impact to ecosystem function	Ecological risk assessment, incorporating current management arrangements, catch levels, extent of fishing activities, ecosystem information and available research.	Target: Fishing impacts are considered to generate an acceptable level of risk to ecological processes within the ecosystem, i.e. moderate risk or lower.	Continue management aimed at achieving agreed ecological, economic and social objectives
				Trigger: Fishing impacts are considered to generate an undesirable level of risk to any ecological processes within the ecosystem, i.e. high risk.	If the catch and habitat management actions do not provide sufficient protection then additional area closures to be implemented to provide sufficient protection for the ecosystem.
				Limit: Fishing impacts are considered to generate an unacceptable level of risk to any ecological processes within the ecosystem, i.e. severe risk.	If the catch and habitat management actions do not provide sufficient protection then additional area closures to be implemented to provide sufficient protection for the ecosystem.

Research and Monitoring Plan to support the Harvest Strategy

This section describes the necessary information required to assess sustainability performance indicators of the harvest strategy. It is expected that this plan will be reviewed annually in alignment with the annual Harvest Strategy review conducted at the Offshore Net and Line Fishery Advisory Group (ONLAG). It is intended that the appropriateness of this plan may be effectively tested via application of the FishPath methodology that is currently being developed in an FRDC project (PI Natalie Dowling), or other appropriate methodology.

Stock Reduction Analysis (SRA)

SRA take the catch of a species from all sectors and assess the impact of this harvest by assessing the change in biomass through time using CPUE as a proxy of abundance. While the models are fairly generic in the equations that are used to conduct the assessment it does provide a reasonable estimate of the impact of current harvest against the harvest rate required to achieve Maximum Sustainable yield.

Reference points informed: Fishing mortality

Logbooks

All ONLF fishers are required to complete daily catch and effort logbooks. Currently, electronic logbooks are being implemented in the fishery and it is expected that these will be used under this harvest strategy to promote efficient transfer of this information. The main statistic produced for the harvest strategy will be Catch Per Unit Effort (CPUE) which will be used to assess the triggers against this performance indicator associated with target, secondary and tertiary species. CPUE will be standardised for year, month, location, wind speed, depth, tide, species being targeted and skipper experience. A General Linear Model will be developed to incorporate the impact these variables have on catch. Areal distribution of fishing effort will also be used in the SAFE assessment described below. Total catch statistics will be used to base any harvest increases/decreases that are associated with trigger breaches.

Reference points informed: Standardised CPUE, TEPS interaction levels, fishery overlap with bycatch species, TEPS and habitat distributions

Observer/Observation Coverage

Independent observation of fishing operations will be a combination of human observers and automated camera systems (Approved Monitoring Equipment - AME). Information from this observer coverage will be used to assess the type and amount of bycatch and TEPS that are interacted with during fishing operations. There will be information collected on size and age of target species, bycatch quantity and composition and TEPS interactions and habitat distribution when research officers are present on observer trips.

Reference points informed: TEPS interaction levels, fishery bycatch species composition

SAFE Assessment

The Sustainable Assessment for Fishing Effects (SAFE) model will be used to assess the performance indicators associated with the tertiary and bycatch. The model uses information on species biology, species distribution area and total area of fishing (Zhou and Griffiths 2008). Observer monitoring reports will be used to determine the species composition for the assessment. For most of these species, their distribution will be obtained from the Atlas of

Living Australia and this distribution will be modified to fit within areal distribution of the fishery. Swept area of the fishery will be calculated by using daily logbook data. The species biology parameters of growth rate and maximum size and age required by the assessment will be obtained from the Fishbase database or known estimates from previous research. Estimates of catchability are based on those determined for prawn trawls.

Reference points informed: Sustainable fishing mortality for finfish and bycatch species.

Vessel Monitoring System (VMS)

Outputs from the VMS will be used to confirm location of fishing operations to be used in determining impact on habitat type and total overlap of fishing activities with species distribution during the SAFE assessment.

Reference points informed: Fishery overlap with bycatch species, TEPS and habitat distributions

Social and economic performance baselining

No operational objectives or measurable performance measures have been set at this stage for social and economic performance due to a lack of specific lines of inquiry with the necessary baselines to inform them. A key need in the research plan is to identify specific social and economic performance measures for the fishery and to establish baselines for them so that they can be translated into future harvest strategies.

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APPENDIX 2 - Terminology Definitions

Combined Blacktip species when used in this division means fish of the species; *Carcharhinus tilstoni, Carcharhinus limbatus.*

Spot-tail species when used in this division means fish of the species; *Carcharhinus sorrah*

Combined Shark Group when used in this division means all fish of the species; *Negaprion acutidens, Carcharhinus amboinensis, Carcharhinus leucas, Sphyrna lewini, S. mokarran, Galeocerdo cuvier, Eusphyra blochii, and C. amblyrhynchos.*

Combined Other Shark Group species when used in this division means all retained shark species other than the Combined Blacktip species, Spot-tail Shark, Combined Shark group and no-take species.

Combined Finfish Group (by-product) species when used in this division means all retained finfish species other than Grey Mackerel and no-take species.

Combined By-catch species when used in this division means all non-retained species.

A5/4xxx series licence means an Offshore Net & Line Fishery licence category. It is proposed all licence categories in the Offshore Net & Line Fishery (ONLF) be assigned to this licence category symbol.

A5/1xxx series licence means an existing Offshore Net & Line licence category which has not participated in a licence reduction scheme. It is proposed to abolish this licence category symbol and amalgamate the licence into the **A5/4xxx** category.

A **Fishery Unit,** when used in this division means a single share of the total shares available to the fishery (Initially, a total of 1 fishery unit for each kilogram of quota species TACC are to be issued for the whole fishery).

Entitlement (as fishery units) reflects the number of fishery units held by a licence at the commencement of the new Regulations. It is proposed each Offshore Net & Line licence will be granted similar amounts of fishery units (or shares) for each of the combined species groups in the fishery dependent upon current holdings and catch history. Permanent transfers of fishery units may occur. When fishery unit is permanently transferred it is referred to as a 'fishery unit' transfer.

Quota unit when used in this division means the fishery unit allocation. The issue of quota units, i.e. 1 kg of whole fish of a particular species group allocated (in 1 kg units) to a licensee, is based on the entitlement of the licence for that licensing year and the TACC. When a transfer of an entitlements allocation occurs it is referred to as a 'quota unit' transfer.

Individual Transferable Quota (as quota units), when used in this division means the same as a quota unit.

Minimum Holdings (of quota units) when used in this division means a set amount (in kilograms) of quota units for each quota species group a licensee must have attached to the licence prior to the vessel commencing fishing operations. To be reviewed annually and revised if necessary. The reviewed catch composition is applied to this figure and adjusted if necessary.

Precautionary Principle when used in this division means when an activity raises threats of harm to the environment or human health, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically.

APPENDIX 3 Working Examples

Fishery unit & ITQ (Quota Unit) Transfer examples

The following three examples are of likely transactions and how they would occur:

In the three examples, an A5/7xxx licence series operator (Lessor) has fishery unit to the equivalent of 5,000 kgs Combined Blacktip ITQ.

(1) I wish to transfer 5,000 kgs of Blacktip ITQ to another licensee in the fishery.

The lessor (operator) completes an ITQ transfer form as lessor for 5,000 kgs of Blacktip ITQ and the lessee (other licensee) signs the form in acceptance of the ITQ. Once approved, the result is as follows:

- Lessor's holdings
  - 5,000 Blacktip fishery units
  - 0kgs Blacktip ITQ allocation ((apply Conversion Factor, initially, 1 fishery unit = 1kg), (5,000kgs - 5,000kgs) = 0kgs)
- Lessee's holdings
  - 5,000kgs Blacktip ITQ i.e. available for fishing.

(2) I wish to retain my entire quota (to continue fishing this year) but sell 5000 fishery units to a new entrant.

The operator (Lessor) completes a permanent fishery unit transfer form as holder of the fishery unit, the new fishery unit holder (Lessee) also completes their details on the form. A start date for the permanent fishery unit transfer to be effective from is nominated on the transfer forms. The new fishery unit holder must concurrently apply for, and be granted, an A5/7xxx series licence. The fishery unit transfer and issue of the A5/7xxx series licence to the new entrant do not occur until the starting period. Once approved, the result is as follows:

- Lessor's holdings
  - 5,000 kgs Blacktip ITQ available for fishing
- New fishery unit holder's (Lessee) holdings (also applies for a A5/7xxx series licence)
  - 5,000 Blacktip fishery units i.e. fishery unit only, no ITQ available for fishing in the current year

Note: The Lessee would receive an ITQ allocation at the start of next fishing season.

(3) I wish to sell my entire Blacktip fishery units (5,000 fishery units) and transfer 3,000 kgs of my Blacktip ITQ allocation to a new entrant, while retaining 2,000 kgs of Blacktip ITQ.

The operator completes a permanent fishery unit transfer form as holder of the fishery unit and a transfer form for the ITQ. The new unit holder (lessee) also completes details on forms. The new fishery unit holder must concurrently apply for, and be granted, an A5/7xxx series licence. The operator also completes an ITQ transfer form for 3,000 kgs of Blacktip ITQ also signed by the lessor. Once approved, the result is as follows:

- Lessor's holdings
  - 2,000 kgs of Blacktip ITQ (Conversion Factor applied, initially, 1 fishery unit = 1kg ITQ)
- New Lessee (Lessee also applies for a A5/7xxx series licence) holdings
  - 5,000 Blacktip Fishery units
  - 3,000 kgs of Blacktip ITQ (apply Conversion Factor, initially, 1 fishery unit = 1kg ITQ)

Note: Lessee would receive new ITQ allocation for his 5,000 Blacktip fishery units at the start of next fishing season.

Overcatch examples

Quota species Overcatch (Grey Mackerel, Blacktip & Sorrah Shark)

An example of how the new quota reconciliation arrangements would work is provided below:

A fisher has seven days (7 days) to reconcile any overcatch.

Trip 8 – you land 2 tonnes of Grey Mackerel above your Grey Mackerel quota holdings. The licence attached to the vessel does not meet minimum holdings at this point (i.e. cannot undock to go fishing) and you have 7 days to buy/lease sufficient Grey Mackerel quota to cover that 2 tonne over-quota.

The fisher.

If, after 7 days the overcatch has not been reconciled you may be issued a formal Overcatch Notice giving you 7 days to reconcile the quota and which may include an Overcatch Fee, payable within 30 days. You are not allowed to resume fishing under the licence until the overcatch is reconciled and you have sufficient minimum holdings.

If you fail to reconcile catches before the end of the licensing year;

In the case of a licence holder who is in an overcatch situation in June, the overcatch would need to be reconciled before the end of the licensing year. If due to exceptional circumstances, a licensee is not able to reconcile the over-quota amount, the justification for the delay will have to be provided to the Director in advance. This information will be considered in determining the enforcement action to be taken.

Note; a licence which is in an overcatch position at the end of the licensing year can only be renewed if no fees or charges are owed and fishery units for the overcatch species group are attached to it in sufficient amounts to cover the overcatch on a three for one penalty basis (as described in the following provision). A licence which does not meet this criteria and is in an overcatch position at the end of the licensing year cannot be renewed.

If the licence is renewed and has fishery units attached, it will be eligible to be allocated pro-rata quota units on 1 July. It is proposed that any previous seasons unreconciled over catch up to 10 tonnes would come off the following season's quota allocation on a three for one basis (i.e. up to 30t). Any overcatch above 10 tonnes would be subject to the three for one reduction and be liable for prosecution. This overcatch provision is intended to allow for any inadvertent catch above the quota allocation which may be taken on the last operation for a boat in the season. Noting that this provision is only available to those licences to which fishery units applicable to the relevant species group are attached.

Spanish Mackerel Overcatch

It is proposed the overcatch fee will increase 20% for every 5,000 kg of combined overcatch over the 13,501 kg limit (18,501 to 23,500 kg = 35%, >23,501 kg = 55% etc.). After 23,501 kg a fee of 55% of cut beach price is proposed.

It is important to note any management measures outlined in the Appendix 1 would not apply to a licensee unless the licence has landed more than 794 kgs of Spanish Mackerel (Converted Whole Weight) during a season.

Catches are monitored monthly by Fisheries to determine those licences harvesting Spanish Mackerel and their individual catches. Note: Spanish mackerel must be kept in either trunked, or whole form. The point of first sale prices for Spanish Mackerel Trunk and Whole fish will be determined in July each year by Fisheries based on market returns from the previous calendar year.

*Average 2017 POFS for Spanish Mackerel x cut from market returns were:

- Trunk $11.70 kg (e.g. 15%=$1.76/kg, 35%=$4.10/kg, etc.), and;
- Whole fish $8.37 kg (e.g. 15% = $1.26/kg, 35%=$2.93/kg, etc.).

An example of how the Spanish Mackerel overcatch reconciliation arrangements would work is provided below:

At 80% of the allocated amount (10.8 t) Management Response (MR) 6 is triggered and Fisheries notifies all licence holders and Approved Operators that the catch is approaching the limit. The catch of Spanish Mackerel in the ONLF then reaches 13.5 t of converted whole weight in January.

An operator has taken 1200 kg of Spanish Mackerel (CWW) to date in January so all future catches are applicable to the overcatch fee;

The catch of Spanish Mackerel in the ONLF then reaches 14.5 t of converted whole weight in February.

- Step 1. An operator takes a further 200 kg of trunks at the end of February, taking his total Spanish Mackerel catch for the year to 1400 kg of trunks. Note: the overcatch fee is only applied to 200 kg.
- Step 2. Management Response (MR) 7 is triggered and applicable to the overcatch of 200 kg trunks.
- Step 3. An overcatch fee of $1.76 per kg of trunk landed is applied for a total fee of $352.00.
- Step 4. The licensee is issued an Overcatch Notice including the fee of $352.00, payable to the NT Government within 30 days. Note: a licence cannot be renewed while any fees or charges are owing.

Each month the catches are monitored and individual licensees with eligible overcatch are issued with invoices according to the MR activated under the Framework.

Undercatch mechanism and example

Rule:

Quota holders are authorised to carry over eligible ITQ that is not taken during the current fishing period to the next fishing period, plus any additional quota units purchased during the year, less any transfers up to a maximum 10% of his annual quota unit allocation, if applicable.

After all transfer and fishing activity has been accounted for a licence holder still holds the following quota units (i.e. eligible quota units) at the end of the season (midnight 30 June);

- 5,000 Grey Mackerel quota units
- 15,000 Blacktip group quota units and,
- 8,000 combined Shark group quota units

To work out what he is entitled to carryover we look at his total quota unit holdings and any transfers to his licence throughout the year, a twostep process. In step one, we review his annual quota unit allocation (1 July, based on his fishery unit holdings, if held,). In this example it was;

- 80,000 Grey Mackerel quota units
- 110,000 Blacktip group quota units and,
- 35,000 combined Shark group quota units

In step two we look at quota unit transfers and find that during the year he purchased 20,000 Grey Mackerel quota units, 25,000 Blacktip group quota units and 5,000 combined Shark

group quota units; and he made no sales giving him total quota unit holdings of (made up from annual allocation + purchases - sales);

- 100,000 Grey Mackerel quota units
- 135,000 Blacktip group quota units and,
- 40,000 combined Shark group quota units

Under the undercatch provision, he may carryover 10% of this amount, up to his remaining quota units as at 30 June. In this example, 10% of quota unit holdings are;

- 10,000 Grey Mackerel quota units
- 13,500 Blacktip group quota units and,
- 4,000 combined Shark group quota units

Therefore, the licence holder is entitled to carryover 5,000 Grey Mackerel quota units, 13,500 Blacktip group quota units and all 4,000 combined Shark group quota units.

Note: Any carryover quota units from the year before are not included in these calculations as they cannot be carry-overed. In this example, the licence holder is entitled to carryover all 5,000 of his unused Grey Mackerel quota units as the amount was **less** than the allowed 10% of Grey Mackerel quota unit holdings. He also had **more** remaining Blacktip group quota units than he could have carried over. The amount of combined Shark group quota units remaining was also **less** than the permissible 10% amount that was eligible for carryover. Note that he is only eligible to carryover remaining (i.e. unused) quota units, up to a maximum of 10% of holdings.

Level 1 mechanism and example

A Level 1 cost recovery mechanism is applied to recover 'on-going' additional management costs in the first year of $39,200, plus CPI increases, including routine fishery monitoring and compliance costs (yet to be verified). Level 1 cost recovery is automatically activated annually at allocation/licence renewal time. Licences will not be renewed, or ITQ allocated until all outstanding fees and charges are addressed.

Activation of the Level 1 cost recovery mechanism will apply to all fishery unit holders on a pro rata basis, meaning that every unit holder pays an equal proportion of the costs due for each of the various species groups fishery unit he or she owns.

Quota species	Economic Value To Fishery (2yr ave.)			Species group displayed as a % of average Economic Value	Tier 1 Cost recovery Put the cost to be recovered here in whole $	Cents/unit per Species group quota allocated
	2016	2017	Ave.		**$ 39,200**	Tier 1 fee = displayed
	$M	$M	$M			as cents per unit (c/FU)
Grey mackerel species group	2.51	3.62	3.065	80%	$ 31,510.10	$ 0.059
Combined Blacktip Shark	0.13	0.11	0.12	3%	$ 1,233.67	$ 0.003
Spot Tail Species	0.01	0.006	0.008	0.2%	$ 82.24	$ 0.001
Combined Shark Group Species	0.363	0.191	0.277	7%	$ 2,847.73	$ 0.012
Combined Other Shark Group	0.014	0.019	0.0165	0.4%	$ 169.63	$ 0.001
Combined Finfish Group	0.343	0.31	0.3265	9%	$ 3,356.62	$ 0.057

* The $39,200 figure used to demonstrate the Level 1 cost recovery mechanism is only an example to enable the cents/kg fee to be displayed. The actual amount that needs to be recovered will depend upon the final cost once all costs have been verified.

Example; A licence holder owns 5,000 Grey Mackerel fishery units, 2,000 blacktip fishery units, 800 Sorrah fishery units, 1,300 Combined Shark fishery units, 1,000 Other Shark group fishery units and 1000 Combined Finfish Units at licence renewal/allocation time. The licence holder would be charged the pro-rata rate from Level 1 of 5,000 @ $.059 cents/unit, 2,000 @ $.003 cents/unit, 800 @ 0.001 cents/unit, 1,300 @ 0.012 cents/unit, 1,000 @ $.001 cents/unit and 1,000 @ 0.057 cents/unit, totalling $375.40 for that licence holder's share of the costs.

Example for allocation of an emerging Target Species

The new quota allocations would be made pro-rata based on a licensees other shark group fishery unit holdings at the next annual allocation review, ie. May – June, in time for 1 July, the start of the new fishing/licensing/quota year. An example of how this could occur is as follows. To determine a licence's allocation, the licence's total combined other shark group fishery units held (e.g. 10000 Combined Other Shark species fishery units) are tallied and divided by the total Combined Other Shark species fishery units issued in the fishery for the gear (e.g. 126,477 units) = .079. This figure is multiplied by the new species TACC (e.g.100,000 units) = licence holders fishery unit share of the new species TACC (~7900 fishery units.