



Australian Government

Department of the Environment, Water, Heritage and the Arts

Assessment of the
Northern Territory Spanish Mackerel Fishery

February, 2008

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ISBN: 978 0 642 55407 9

Disclaimer

This document is an assessment carried out by the Department of the Environment, Water, Heritage and the Arts of a commercial fishery against the Australian Government *Guidelines for the Ecologically Sustainable Management of Fisheries – 2nd Edition*. It forms part of the advice provided to the Minister for the Environment, Heritage and the Arts on the fishery in relation to decisions under Parts 13 and 13A of the *Environment Protection and Biodiversity Conservation Act 1999*. The views expressed do not necessarily reflect those of the Minister for the Environment, Heritage and the Arts or the Australian Government.

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Table 1: Summary of the Northern Territory (NT) Spanish Mackerel Fishery

<p>Publicly available information relevant to the fishery</p>	<ul style="list-style-type: none"> • NT <i>Fisheries Regulations 1993</i>; • NT <i>Fisheries Act 1988</i>; • The <i>NT Spanish Mackerel Fishery Management Plan 2005</i>; • NT Annual Fishery Status Reports; • The submission — <i>Northern Territory Spanish Mackerel Fishery Export Exemption Submission, Re-assessment Report November 2007 and Risk Assessment of Compliance Issues in the Northern Territory Spanish Mackerel Fishery</i>; • NT Strategic Plan — <i>fisheries research and development update for 2007–2011</i>; and • Department of the Environment, Water, Heritage and the Arts (DEWHA, formerly the Department of the Environment and Heritage) Assessment Report of the <i>NT Spanish Mackerel Fishery, 2003</i>.
<p>Area</p>	<p>Licenseses in the NT Spanish Mackerel Fishery may operate in NT waters seaward of the coast and river mouths, to the outer limit of the Australian Fishing Zone.</p> <p>Principal fishing areas generally occur in coastal areas around reefs, headlands and shoals.</p>
<p>Fishery status</p>	<p>Uncertain, however the NT Department of Primary Industry, Fisheries and Mines (DPIFM) state that recent assessments indicate that the NT Spanish Mackerel Fishery is currently fished below or at the optimum level.</p> <p>The Catch-Per-Unit-Effort (CPUE) for the commercial Spanish mackerel fishery has followed a strong increasing trend through the past two decades. The NT Fishery Status Report for the fishery notes that CPUE for 2006 was 372.5 kg/day, a slight increase over the previous few years and representing a new peak for the fishery. The long-term trend may reflect improved efficiency in fishing operations and thus should be interpreted with care. However, it may include the recovery of the Spanish mackerel population since historical over-fishing by the licensed Taiwanese-Australia joint venture fishery of the 1970's and 1980's.</p> <p>In 2005 and 2006, the aggregate catch of all sectors exceeded 90% of the total allowable catch for the fishery, triggering a review of the management arrangements.</p>
<p>Target Species</p>	<p>Narrow-barred Spanish mackerel (<i>Scomberomorus commerson</i>).</p> <p>Information on the biology of this species can be found in the 2003 assessment of the fishery located on the Department of the Environment, Water, Heritage and the Arts website at: http://www.environment.gov.au/coasts/fisheries/index.html</p>
<p>Byproduct Species</p>	<p>Small amounts of other <i>Scomberomorus</i> species are also taken in the fishery (e.g. school and grey mackerel). Other byproduct species</p>

	<p>include: wahoo (<i>Acanthocybium solandri</i>); goldband snapper (<i>Pristipomoides</i> spp); trevallies; and cods.</p> <p>In 2005, operators in the NT Spanish Mackerel Fishery landed 182 kg of wahoo and 65 kg of goldband snapper.</p>
Gear	<p>Fishers may operate from a mother boat with up to two dories (less than 6.5 m long) and use any number or combination of troll lines, floating handlines and rod and lines. Fishers commonly troll two to four lines behind a dory and up to eight lines from a mother boat. A licensee must not operate a dory independently from the mother boat for more than six hours.</p> <p>While most commercial fishers purchase bait for their fishing operations, a small number of operators (less than five) fish for bait under a restricted bait net entitlement, which must be hauled by hand. Bait fish, usually garfish, harvested under this entitlement may only be used for the commercial fishing of Spanish mackerel.</p>
Season	No closed season, however most fishing takes place during the second half of the year, usually around September to November.
Commercial harvest for the fishery 2001-2006	<p>2006 – 409 t; 2005 – 390 t; 2004 – 297 t; 2003 – 343 t; 2002 – 316 t; 2001 – 373 t.</p> <p>The changes in annual total catches largely reflect effort, which in turn reflects causes such as market prices, wind strengths and crew availability.</p>
Value of commercial harvest 2006	At the point of first sale in 2006, the value of the catch from the NT Spanish Mackerel Fishery was \$2.49 million.
Take by other sectors	<p>A small amount of Spanish mackerel is taken by the NT Offshore Net and Line Fishery (ONLF) and the NT Finfish Trawl Fishery. In 2006, 26.5 t of Spanish mackerel were landed in the ONLF, an increase from the 20.6 t caught in 2005. This is well above the 13.5 t sector allocation for the fishery. Spanish mackerel harvested from the Finfish Trawl Fishery in 2006 was 1,110 kg, well below the 4.5 t sector allocation for this fishery. There is a ‘no take’ policy of Spanish mackerel for all other NT fisheries.</p> <p>In 2000, the National Recreational Fishing Survey found that the annual NT catch of all mackerel species by the recreational sector was 25,233 individuals, slightly higher than the FISHCOUNT survey conducted in 1995 (24,500 individuals). In the Survey, over half of the mackerel catch was not identified to species however it is estimated that 49% of the mackerel catch was Spanish mackerel, which equates to approximately 62.2 t, which included the Fishing Tour Operator (FTO) sector catch component of 15.1 t. In 2006, the total harvest of Spanish mackerel by the FTOs was 1,072 individuals.</p> <p>Only a very few (1,400) individual mackerel species were reported to be captured during the 2000 Indigenous Fishing Survey of Northern Australia and specific types of species were not recorded.</p>

Commercial licences issued	<p>The fishery has a total of 19 licences, with 15 active commercial licences operating in the fishery in 2006.</p> <p>During 2006, a reported 1,098 boat days of fishing occurred in the fishery, a slight decrease from the 1,115 boat days reported in 2005.</p>
Management arrangements	<p>The fishery is managed under the NT <i>Spanish Mackerel Fishery Management Plan 2005</i>, in force under the NT <i>Fisheries Regulations 1993</i> and the NT <i>Fisheries Act 1988</i>.</p> <p>Input and output management controls include:</p> <ul style="list-style-type: none"> • limited entry (19 licences); • gear restrictions; • catch sharing arrangement with other user groups (total of 450 t total allowable catch): <ul style="list-style-type: none"> ○ Spanish mackerel licensees – 76% (342 t); ○ Recreational fishers – 16% (72 t); ○ Offshore Net and Line licensees – 3% (13.5 t); ○ FTO licensees – 3% (13.5 t); ○ Finfish Trawl licensees – 1% (4.5 t); and ○ Indigenous fishers – 1% (4.5 t); • formalised objectives, performance indicators, trigger points and management responses (incorporated into management plan); and • a recreational personal possession limit of five Spanish mackerel per day.
Export	<p>Limited export. Most Spanish mackerel is sold interstate.</p>
Bycatch	<p>The NT Fishery Status Report for Spanish mackerel states that the commercial fishery catches very little apart from its primary target species and almost all bycatch items are returned to the water alive. Spanish mackerel fishers are not permitted to possess barramundi (<i>Lates calcarifer</i>), mud crab (a crab of the genus <i>Scylla</i>), shark (a fish of the Class Chondrichthyes) or threadfin salmon (<i>Polynemus sheridani</i>).</p> <p>During an eight day monitoring trip in July 2006, the NT Fisheries observer onboard recorded the capture and live release of five bycatch items: one barracuda (<i>Sphyraena barracuda</i>), three giant trevally (<i>Caranx ignobilis</i>) and one small shark (<i>Carcharhinus</i> sp.). Similarly during 2005, bycatch was recorded during four observer trips (31 observer days), in which small numbers of trevally, barracuda, queenfish, and various shark and tuna species were captured. No bycatch at all was observed on nine of the observer days. None of these bycatch species were retained as byproduct, and the majority of the fish were observed to be alive at the time of release.</p>
Interaction with Protected Species¹	<p>Due to the highly targeted nature of the troll fishing method, interactions with threatened, endangered or protected (TEP) species in the NT Spanish Mackerel Fishery is considered minimal.</p>

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

	No interactions with TEP species was observed or reported during 2004 or 2006. In 2005, an interaction was reported with a single sea snake (not identified to species), which was released alive.
Ecosystem Impacts	DPIFM indicate that due to the fishing gear and targeted nature of fishing operations observed, the fishery has minimal impact on the ecosystem.
Impacts on World Heritage property	The Kakadu National Park is listed as a World Heritage Area however commercial fishing activity is not permitted in the waterways of Kakadu National Park and gear restrictions and spatial closures exist for recreational fishers.

Table 2: Progress in implementation of recommendations made in initial assessment of the NT Spanish Mackerel Fishery

Recommendation	Progress	Recommended Action
<p>1. Inform DEWHA (formerly, the Department of the Environment and Heritage) of any future amendment to the management regime for the Spanish Mackerel Fishery.</p>	<p>While DPIFM have implemented a new management plan for the fishery, there have been no changes to the management arrangements that may affect sustainability of the target species or negatively impact on bycatch, protected species or the ecosystem.</p> <p>DPIFM has kept DEWHA informed of future amendments to the management regime for the fishery through direct liaison and publication of the annual Fishery Status Reports.</p>	<p>As part of the new export declaration for this fishery, this recommendation remains in force for a further five years (see Recommendation 2, Table 4).</p>
<p>2. Formalise the objectives, performance indicators, trigger points and management actions outlined in Table 1 of the NT submission into the Spanish Mackerel Management plan, where appropriate.</p>	<p>Objectives, performance indicators, trigger points and management responses have been included, where appropriate, in the <i>Spanish Mackerel Fishery Management Plan</i>, which was Gazetted on 1 January 2005. These fishery-specific indicators apply to the target species, byproduct, bycatch and the impacts of the fishery on the ecosystem.</p>	<p>DEWHA commends DPIFM for formalising objectives, performance indicators, trigger points and management responses into the fishery’s Management Plan. A recommendation has been made for DPIFM to produce and present reports to DEWHA annually and to include the status of the target stock including performance of the fishery against objectives, performance indicators and measures (see Recommendation 3, Table 4).</p>
<p>3. Implement the Byproduct Action Plan, for fisheries targeting species other than Spanish mackerel, within the first year.</p>	<p>In 2004, a Byproduct Action Plan was developed and implemented for the non-target Spanish mackerel fisheries. The plan introduced restrictions for the incidental harvest of Spanish mackerel in the ONLF and the Finfish Trawl Fishery and a ‘no take’ requirement for all other NT fisheries.</p> <p>In recognition of the incidental catch of Spanish mackerel when targeting grey mackerel in the</p>	<p>DEWHA considers that this recommendation has been met.</p> <p>A further recommendation has been made for DPIFM to ensure that catch rates for all sectors (including the ONLF and the Finfish Trawl Fishery) can be reduced to remain within the total allowable catch (TAC) for the fishery (see Recommendation 4, Table 4).</p>

	<p>ONLF, an ONLF licensee is restricted to only 30 trunks or whole Spanish mackerel during a voyage. In addition to the 30 fish, for each tonne of grey mackerel harvested in the ONLF, the licensee may take an additional 10 trunks or whole Spanish mackerel. Similarly, in the Finfish Trawl Fishery, a licensee must not possess more than 50 Spanish mackerel on board.</p> <p>The Byproduct Action Plan has been successfully incorporated into the NT <i>Fisheries Regulations</i> and relevant fishery management plans.</p>	
<p>4. Report on objectives, performance indicators and triggers in the annual status report.</p>	<p>A report on the fishery's progress against the stated objectives, performance indicators, trigger points and management arrangements is provided in the annual NT Fishery Status Reports. This practice will continue in future Fishery Status Reports published by DPIFM.</p> <p>NT Fishery Status Reports are available from the DPIFM website at: http://www.nt.gov.au/dpifm/Fisheries/</p>	<p>A recommendation has been made for DPIFM to produce and present reports to DEWHA annually and to include the status of the target stock including performance of the fishery against objectives, performance indicators and measures (see Recommendation 3, Table 4).</p>
<p>5. Conduct a compliance risk assessment for the Spanish Mackerel Fishery.</p>	<p>A compliance risk assessment for the NT Spanish Mackerel Fishery was conducted by DPIFM in May 2006. The objectives of the assessment was to identify and assess the severity of the compliance risks associated with commercial fishing activity and develop compliance strategies, policies and management action to minimise risks identified.</p> <p>Commercial fishing activities assessed in the</p>	<p>A recommendation has been made for DPIFM to develop and implement management responses for identified risks resulting from the Compliance Risk Assessment for the fishery (see Recommendation 8, Table 4).</p>

	<p>compliance risk assessment included:</p> <ul style="list-style-type: none"> • unlicensed commercial fishing; • illegal foreign fishing; • remote port trans-shipping; • high grading/selective retention; • non-reporting of protected species interactions; • fishing outside authorized zone; • non-reporting of commercial species; • illegal shark fining; and • illegal gear. 	
<p>6. By 2005 formalize guidelines, including clear timeframes for implementation, for undertaking review of the fisheries management arrangements once reference points and triggers are reached.</p>	<p>The reference points and triggers have been incorporated into the <i>Spanish Mackerel Fishery Management Plan</i>. It is a requirement of the plan that once the trigger points have been reached, the Director of Fisheries must conduct a review of the fishery's management arrangements.</p> <p>A trigger point of 450 t of Spanish mackerel was set in the <i>Spanish Mackerel Fishery Management Plan</i> as the total allowable catch.</p> <p>The combined catch of all sectors in 2005 was 477 tonnes. The 2006 Spanish mackerel total harvest also exceeded the trigger point of 90% of the Allowable Catch for the fishery. The Director of Fisheries has formally requested advice from the fishery's Management Advisory Committee (MAC) Chair regarding Spanish mackerel harvest and management options. DEWHA will be informed of the outcomes of this review once available, through established reporting</p>	<p>Within 3 months of becoming aware of a triggered reference point for target, byproduct, bycatch or protected species, DPIFM will review and consider appropriate management responses, including a clear timetable for implementation (see Recommendation 6, Table 4).</p> <p>In relation to the trigger point of 90% of the allowable catch for the fishery being breached, a recommendation has been made for DPIFM to adequately review the fishery's management arrangements, determine how catch rates for all sectors can be reduced to remain within the TAC and implement appropriate management options (see Recommendation 4, Table 4).</p>

	mechanisms.	
<p>7. Continue to seek out alternative cost effective fishery independent sampling techniques and report outcomes in the annual status report.</p>	<p>DPIFM are continuing to seek out alternative cost effective fishery independent sampling/monitoring techniques, for the Spanish Mackerel Fishery.</p> <p>A project to develop a new approach for tagging Spanish mackerel commenced in 2001, with funding from the NT Research and Development Trust Fund. Subsequent to the success of this pilot work, the project <i>GENETAG: Genetic mark-recapture for real-time harvest rate monitoring. Pilot studies in northern Australia Spanish mackerel fisheries</i> was commenced, and supported by the Fisheries Research and Development Corporation. This project was provided additional funding and is now projected for completion in 2008. The intention of this work is to develop a mark-recapture approach as the basis of monitoring harvest rates and catchability in the fishery.</p> <p>Due to the shared nature of harvested species with adjoining jurisdictions, many of the research projects Spanish mackerel are collaborative. Fisheries researchers and managers from state, territory and Commonwealth jurisdictions meet annually at the North Australian Fisheries Management forum to review current research, set research priorities and decide on management strategies and appropriate controls to ensure that these shared resources are used in a sustainable</p>	<p>DEWHA considers that this recommendation is ongoing and is confident that DPIFM will continue to seek out alternative cost effective fishery independent sampling techniques and report outcomes in the annual Fishery Status Reports.</p> <p>DEWHA notes that independent observers collect fishery information and provide advice regarding target, byproduct and bycatch species during observed fishing trips. The fishery observer collects information on age and size information and assesses the implementation progress of the Genetag project.</p> <p>A recommendation has been made for DPIFM to analyse and develop harvest rate and/or abundance estimates for Spanish mackerel (see Recommendation 5, Table 4).</p>

	<p>manner.</p> <p>DPIFM is a signatory to the Northern Australian Operational Plan for the Conservation and Management of Spanish Mackerel. The plan was agreed to in 2005 by all relevant State/NT/Commonwealth fisheries agencies. The operational plan helps to better align research and compliance initiatives and direction with management priorities.</p>	
<p>8. Include yearly results of observer surveys (including information on target species, bycatch and protected species interactions) in the annual status report and implement alternative data collection validation techniques if observer trips are no longer feasible.</p>	<p>Summaries of observer trips are now included in the annual NT Fishery Status Reports. Observers for the fishery collect age and size information and assess the implementation progress of the Genetag project.</p> <p>Analysis of the information provided by the observer program has verified correct correlation between observed catch information and corresponding logbook data.</p>	<p>The observer program, in conjunction with the logbook program provides a sufficient understanding of the status of the fishery. The additional Genetag project will provide for the development of a mark-recapture based monitoring approach and support further improvement of harvest rate-based management strategies.</p>
<p>9. Make reporting of all protected species interactions compulsory and implement an education program to ensure industry has the capacity to make accurate reports.</p>	<p>The observer program and logbooks indicate a minimal number of recorded interactions between the fishery and protected species. In 2005, there was one reported interaction with a sea snake that was released alive immediately after capture.</p> <p>Since 2002, DPIFM has worked closely with industry and relevant scientific experts to improve the compulsory logbook reporting system. This work has been complemented by the development and enhancement of an identification/education program for fishers. In addition, industry has developed an</p>	<p>While there have been minimal reported interactions with protected species with the NT Spanish Mackerel Fishery, DEWHA notes that there is potential for such interactions.</p> <p>A recommendation has been made for DPIFM to continue to ensure fishers are aware of the EPBC Act requirement to report protected species interactions and record of the status of the protected species once released (see Recommendation 11, Table 4).</p>

	<p>Environmental Management System (EMS) for the fishery which assists with the correct identification and reporting of turtles, sawfish, sharks and other protected species in order to ensure accurate reporting.</p> <p>Logbooks have been amended to expand the existing capacity to record the major target and byproduct specific species. Furthermore, all commercial fisher log books now include a front cover that outlines their reporting requirements for protected species under the EPBC Act.</p>	
<p>10. Gather information that would support a move to a precautionary biological reference point for Spanish mackerel.</p>	<p>Given the low numbers of operators allowed in the fishery, the vast geographic area of the fishery and the highly migratory nature Spanish mackerel, DPIFM believes the fishery is being managed in a sustainable manner with minimal risk of localised depletion or overfishing.</p> <p>The fishery’s observer program includes collection of samples of the age and size information for the Spanish mackerel stock. With approaches being developed in the Genetag project, due to be completed in mid-2008, this will provide the basis for monitoring of harvest rates and the development of other alternative performance measures.</p> <p>Until the Genetag project’s results are available, a preliminary biological reference point of 450 t has been legislated for the fishery.</p>	<p>The 450 t total allowable catch provides a guideline until further information regarding the fishery and stock structure are known.</p> <p>A recommendation has been made for DPIFM to analyse and develop harvest rate and/or abundance estimates for Spanish mackerel and review current management arrangements. Once results from the Genetag project become available, they may be incorporated into management arrangements, where appropriate (see Recommendation 5, Table 4).</p>

<p>11. Monitor the species composition of bycatch and byproduct with a view to undertaking a more rigorous risk analysis, if there is a significant increase in the catch of individual species.</p>	<p>The commercial fishery catches very little apart from its primary target species and almost all bycatch items are returned to the water alive. Fishery observers collect information and provide advice regarding target, byproduct and bycatch species, the details of which are included in the annual Fishery Status Reports. Monitoring of the commercial fishery identified very low levels of bycatch which illustrates the highly targeted nature of this fishery.</p> <p>Performance indicators and trigger points for target, byproduct and bycatch species have been incorporated into the <i>Spanish Mackerel Fishery Management Plan</i>. It is a requirement of the plan that if the amount of bycatch or byproduct in the fishery increases to 10% of the total catch taken in the year (whole weight) then a review of the fishery management arrangements must be conducted.</p>	<p>While the current risk of the fishery to byproduct and bycatch species is considered low, DEWHA recommends DPIFM, in conjunction with relevant stakeholders, conduct an Ecological Risk Assessment (ERA) on the current impact of the fishery on target, byproduct, bycatch species (including protected species) and the ecosystem to assist with the ecologically sustainable management of the fishery (see Recommendation 7, Table 4).</p> <p>In addition, within 3 months of becoming aware of a triggered reference point for target, byproduct, bycatch or protected species, DPIFM will review and consider appropriate management responses, including a clear timetable for implementation (see Recommendation 6, Table 4).</p>
<p>12. Monitor the size composition of the commercial catch of Spanish mackerel and introduce additional management measures if the catch composition shifts to pre mature fish.</p>	<p>Work is being conducted by DPIFM that evaluates the mean and actual size, and sex composition of the fishery's harvest. Logbook returns provide information on catch weight and number of fish which enables the mean size of the catch to be estimated. Fishery observers also monitor and measure size, and the reproductive state of Spanish mackerel catches, which provides information on the catch's age structure and reproductive status.</p>	<p>Should research determine significant changes in any aspect of the fishery, a review of the management arrangements will be undertaken. A recommendation has been made for DPIFM to continue to regularly monitor size composition of the commercial catch of Spanish mackerel and introduce appropriate management measures should the catch composition shift to immature fish (see Recommendation 10, Table 4).</p>

Table 3: DEWHA assessment of the NT Spanish Mackerel Fishery against the requirements of the EPBC Act related to decisions made under Parts 13 and 13A

Please Note – the table below is not a complete or exact representation of the EPBC Act. It is intended as a summary of relevant sections and components of the EPBC Act to provide advice on the fishery in relation to decisions under Parts 13 and 13A. A complete version of the EPBC Act can be found on the DEWHA website.

Part 13

<p>Division 1 Listed threatened species Section 208A Minister may accredit plans or regimes</p>	<p>DEWHA assessment of the NT Spanish Mackerel Fishery</p>
<p>(1) Minister may, by instrument in writing, accredit for the purposes of this Division:</p> <p style="padding-left: 40px;">(c) a plan of management, or a policy, regime or any other arrangement, for a fishery that is:</p> <p style="padding-left: 80px;">i. made by a State or self-governing Territory; and</p> <p style="padding-left: 80px;">ii. in force under a law of the State or self-governing Territory;</p> <p>if satisfied that:</p> <p style="padding-left: 40px;">(f) the plan, regime or policy requires persons engaged in fishing under the plan, regime or policy to take all reasonable steps to ensure that members of listed threatened species (other than conservation dependent species) are not killed or injured as a result of the fishing; and</p>	<p>The fishery is managed under the NT <i>Spanish Mackerel Fishery Management Plan 2005</i>, in force under the NT <i>Fisheries Regulations 1993</i> and the NT <i>Fisheries Act 1988</i>.</p> <p>In 2003, the Spanish Mackerel Fishery Management Plan (1 February 1993) was accredited under Part 13 of the EPBC Act. The fishery is now managed under the <i>Spanish Mackerel Fishery Management Plan 2005</i>.</p> <p>DEWHA considers that the <i>Spanish Mackerel Fishery Management Plan 2005</i> is appropriately precautionary and is unlikely to represent a significant impact on protected species given the existing extremely low rate of interaction. In addition, DPIFM has implemented a protected species identification and education program since the last assessment, which will enable them to gather more reliable information on the nature and frequency of protected species interactions. Given the legislation in force in the NT, DEWHA considers that all</p>

<p>(g) the fishery to which the plan, regime or policy relates does not, or is not likely to, adversely affect the survival or recovery in nature of the species.</p>	<p>reasonable steps are being taken to prevent the killing or injuring of threatened species and the capture of any threatened species would be incidental to and not the purpose of the operation of the NT Spanish Mackerel Fishery.</p> <p>Currently, evidence suggests that the NT Spanish Mackerel Fishery has negligible interactions with listed threatened species. Therefore, DEWHA considers the current operation of the NT Spanish Mackerel Fishery is not likely to adversely affect the survival or recovery in nature of any threatened species.</p>
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<p>Division 2 Migratory species Section 222A Minister may accredit plans or regimes</p>	<p>DEWHA assessment of the NT Spanish Mackerel Fishery</p>
<p>(1) Minister may, by instrument in writing, accredit for the purposes of this Division:</p> <p>(c) a plan of management, or a policy, regime or any other arrangement, for a fishery that is:</p> <ol style="list-style-type: none"> i. made by a State or self-governing Territory; and ii. in force under a law of the State or self-governing Territory; <p>if satisfied that:</p> <p>(f) the plan, regime or policy requires persons engaged in fishing under the plan, regime or policy to take all reasonable steps to ensure that members of listed migratory species are not killed or injured as a result of the fishing; and</p>	<p>The fishery is managed under the NT <i>Spanish Mackerel Fishery Management Plan 2005</i>, in force under the NT <i>Fisheries Regulations 1993</i> and the NT <i>Fisheries Act 1988</i>.</p> <p>In 2003, the Spanish Mackerel Fishery Management Plan (1 February 1993) was accredited under Part 13 of the EPBC Act. The fishery is now managed under the <i>Spanish Mackerel Fishery Management Plan 2005</i>.</p> <p>DEWHA considers that the <i>Spanish Mackerel Fishery Management Plan 2005</i> is appropriately precautionary and is unlikely to represent a</p>

<p>(g) the fishery to which the plan, regime or policy relates does not, or is not likely to, adversely affect the conservation status of a listed migratory species or a population of that species.</p>	<p>significant impact on protected species given the existing extremely low rate of interaction. In addition, DPIFM has implemented a protected species identification and education program since the last assessment, which will enable them to gather more reliable information on the nature and frequency of protected species interactions. Given the legislation in force in the NT, DEWHA considers that all reasonable steps are being taken to prevent the killing or injuring of migratory species and the capture of any migratory species would be incidental.</p> <p>Currently, evidence suggests that the NT Spanish Mackerel Fishery has negligible interactions with listed migratory species. Therefore, DEWHA considers the current operation of the NT Spanish Mackerel Fishery is not likely to adversely affect the survival or recovery in nature of any listed migratory species.</p>
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<p>Division 3 Whales and other cetaceans Section 245 Minister may accredit plans or regimes</p>	<p>DEWHA assessment of the NT Spanish Mackerel Fishery</p>
<p>(1) Minister may, by instrument in writing, accredit for the purposes of this Division:</p> <p>(c) a plan of management, or a policy, regime or any other arrangement, for a fishery that is:</p> <ul style="list-style-type: none"> i. made by a State or self-governing Territory; and ii. in force under a law of the State or self-governing Territory; <p>if satisfied that:</p> <p>(f) the plan, regime or policy requires persons engaged in fishing under the plan, regime or policy to take all</p>	<p>The fishery is managed under the NT <i>Spanish Mackerel Fishery Management Plan 2005</i>, in force under the NT <i>Fisheries Regulations 1993</i> and the NT <i>Fisheries Act 1988</i>.</p> <p>In 2003, the Spanish Mackerel Fishery Management Plan (1 February 1993) was accredited under Part 13 of the EPBC Act. The fishery is</p>

<p>reasonable steps to ensure that cetaceans are not killed or injured as a result of the fishing; and</p> <p>(g) the fishery to which the plan, regime or policy relates does not, or is not likely to, adversely affect the conservation status of a species of cetacean or a population of that species.</p>	<p>now managed under the <i>Spanish Mackerel Fishery Management Plan 2005</i>.</p> <p>DEWHA considers that the <i>Spanish Mackerel Fishery Management Plan 2005</i> is appropriately precautionary and is unlikely to represent a significant impact on protected species given the existing extremely low rate of interaction. In addition, DPIFM has implemented a protected species identification and education program since the last assessment, which will enable them to gather more reliable information on the nature and frequency of protected species interactions. Given the legislation in force in the NT, DEWHA considers that all reasonable steps are being taken to prevent the killing or injuring of cetacean species and the capture of any cetacean species would be incidental.</p> <p>Currently, evidence suggests that the NT Spanish Mackerel Fishery has negligible interactions with whales and other cetaceans. Therefore, DEWHA considers the current operation of the NT Spanish Mackerel Fishery is not likely to adversely affect the conservation status of a species of cetacean or a population of that species.</p>
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<p>Division 4 Listed marine species Section 265 Minister may accredit plans or regimes</p>	<p>DEWHA assessment of the NT Spanish Mackerel Fishery</p>
<p>(1) Minister may, by instrument in writing, accredit for the purposes of this Division:</p> <p>(c) a plan of management, or a policy, regime or any other arrangement, for a fishery that is:</p> <ul style="list-style-type: none"> i. made by a State or self-governing Territory; and ii. in force under a law of the State or self-governing Territory; 	<p>The fishery is managed under the NT <i>Spanish Mackerel Fishery Management Plan 2005</i>, in force under the NT <i>Fisheries Regulations 1993</i> and the NT <i>Fisheries Act 1988</i>.</p>

<p>if satisfied that:</p> <p>(f) the plan, regime or policy requires persons engaged in fishing under the plan, regime or policy to take all reasonable steps to ensure that members of listed marine species are not killed or injured as a result of the fishing; and</p> <p>(g) the fishery to which the plan, regime or policy relates does not, or is not likely to, adversely affect the conservation status of a listed marine species or a population of that species.</p>	<p>In 2003, the Spanish Mackerel Fishery Management Plan (1 February 1993) was accredited under Part 13 of the EPBC Act. The fishery is now managed under the <i>Spanish Mackerel Fishery Management Plan 2005</i>.</p> <p>DEWHA considers that the <i>Spanish Mackerel Fishery Management Plan 2005</i> is appropriately precautionary and is unlikely to represent a significant impact on protected species given the existing extremely low rate of interaction. In addition, DPIFM has implemented a protected species identification and education program since the last assessment, which will enable them to gather more reliable information on the nature and frequency of protected species interactions. Given the legislation in force in the NT, DEWHA considers that all reasonable steps are being taken to prevent the killing or injuring of listed marine species and the capture of any listed marine species would be incidental.</p> <p>Currently, evidence suggests that the NT Spanish Mackerel Fishery has minimal interactions with listed marine species (one reported interaction in 2005 with a sea snake, which was released alive). Therefore, DEWHA considers the current operation of the NT Spanish Mackerel Fishery is not likely to adversely affect the conservation status of a listed marine species or a population of that species.</p>
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Section 303AA Conditions relating to accreditation of plans, regimes and policies	DEWHA assessment of NT Spanish Mackerel Fishery
(1) This section applies to an accreditation of a plan, regime or policy under section 208A, 222A, 245 or 265.	DEWHA recommends that NT <i>Spanish Mackerel Fishery Management Plan 2005</i> be accredited under sections 208A, 222A, 245 and 265.
(2) The Minister may accredit a plan, regime or policy under that	No condition has been imposed on the NT Spanish Mackerel Fishery to

<p>section even though he or she considers that the plan, regime or policy should be accredited only:</p> <ul style="list-style-type: none"> (a) during a particular period; or (b) while certain circumstances exist; or (c) while a certain condition is complied with. <p>In such a case, the instrument of accreditation is to specify the period, circumstances or condition.</p>	<p>satisfy section 208A 222A, 245 and 265 under Part 13.</p>
<p>(7) The Minister must, in writing, revoke an accreditation if he or she is satisfied that a condition of the accreditation has been contravened.</p>	<p>The declaration by the then Minister for the Environment and Heritage on 4 February 2003 to accredit the <i>Spanish Mackerel Fishery Management Plan</i> (1 February 1993) under Part 13 of the EPBC Act will be revoked.</p>

Part 13A

Section 303DC Minister may amend list	DEWHA assessment of the NT Spanish Mackerel Fishery
<p>(1) Minister may, by instrument in published in the Gazette, amend the list referred to in section 303DB (list of exempt native specimens) by:</p> <ul style="list-style-type: none"> (a) including items in the list; (b) deleting items from the list; or (c) imposing a condition or restriction to which the inclusion of a specimen in the list is subject; or (d) varying of revoking a condition or restriction to which the inclusion of a specimen in the list is subject; or (e) correcting an inaccuracy or updating the name of a species. 	
<p>(3) Before amending the list referred to in section 303DB (list of exempt native specimens), the Minister:</p> <ul style="list-style-type: none"> (a) must consult such other Minister or Ministers as the Minister considers appropriate; and (b) must consult such other Minister or Ministers of each State and self-governing Territory as the Minister considers 	<p>The public comment period on the NT Spanish Mackerel Fishery submission sought comment on the submission for the fishery and provided sufficient opportunity for consultation with other persons and organisations.</p> <p>A letter to the Hon Chris Natt MLA, Minister for Primary Industry,</p>

<p>(c) appropriate; and may consult such other persons and organisations as the Minister considers appropriate.</p>	<p>Fisheries and Mines advises him of the intention to declare the fishery exempt from the export provisions of the EPBC Act.</p>
<p>(5) A copy of an instrument made under section 303DC is to be made available for inspection on the Internet.</p>	<p>The instrument for the NT Spanish Mackerel Fishery made under sections 303DC will be gazetted and made available on the DEWHA website.</p>

<p>Section 303FR Public consultation</p>	<p>DEWHA assessment of the NT Spanish Mackerel Fishery</p>
<p>(1) Before making a declaration under section 303FN, the Minister must cause to be published on the Internet a notice:</p> <ul style="list-style-type: none"> (a) setting out the proposal to make the declaration; and (b) setting out sufficient information to enable persons and organisations to consider adequately the merits of the proposal; and (c) inviting persons and organisations to give the Minister, within the period specified in the notice, written comments about the proposal. 	<p>Under the EPBC Act, a decision to amend the LENS does not require a public consultation period. However, a public notice, which set out the proposal to grant export approval to the NT Spanish Mackerel Fishery and included the submission <i>Northern Territory Spanish Mackerel Fishery Export Exemption Submission, Re-assessment Report November 2007</i>, was released for public comment which closed on 23 November 2007 with one submission received.</p>
<p>(2) A period specified in the notice must not be shorter than 20 business days after the date on which the notice was published on the Internet.</p>	<p>A public notice, which set out the proposal to grant export approval to the NT Spanish Mackerel Fishery and included the submission for the fishery was released for public comment on 25 October 2007 and closed on 23 November 2007, a total of 20 business days.</p>
<p>(3) In making a decision about whether to make a declaration under section 303FN, the Minister must consider any comments about the proposal to make the declaration that were given in response to the invitation in the notice.</p>	<p>One public comment was received on the submission for the fishery. The DEWHA assessment has considered the public comment received on the submission.</p>

Part 16

<p>Section 391 Minister must consider precautionary principle in making decisions</p>	<p>DEWHA assessment of the NT Spanish Mackerel Fishery</p>
<p>(1) The Minister must take account of the precautionary principle in making a decision under section 303DC and/or section 303FN, to the</p>	<p>The precautionary principle must be considered when making a decision to include specimens on the LENS.</p>

extent he or she can do so consistently with the other provisions of this Act.	
(2) The precautionary principle is that lack of full scientific certainty should not be used as a reason for postponing a measure to prevent degradation of the environment where there are threats of serious or irreversible environmental damage.	

Objects of Part 13A

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

Final recommendations to DPIFM for the NT Spanish Mackerel Fishery

The material submitted by DPIFM indicates that the NT Spanish Mackerel Fishery operates in accordance with the Australian Government *Guidelines for the Ecologically Sustainable Management of Fisheries – 2nd Edition*. DEWHA considers that the fishery is well managed and unlikely to have an unacceptable or unsustainable impact on the environment in the short to mid term. Overall, DEWHA recognises that limited entry (19 licences), gear restrictions, catch sharing arrangement with other user groups (total of 450 t total allowable catch) and formalised objectives, performance indicators, trigger points and management responses (incorporated into management plan) are conservative and suggest that the fishery is being managed in an ecologically sustainable way.

In making its assessment, DEWHA considers that the range of management measures are sufficient to ensure that the fishery is conducted in a manner that does not lead to over-fishing and that stocks are not currently overfished. Taking into account the combination of management arrangements, data gathering, and nature of the fishery, DEWHA considers that fishing operations are managed to minimise their impact on the structure, productivity, function and biological diversity of the ecosystem.

DEWHA is satisfied that the fishery will not be detrimental to the survival or conservation status of the taxon to which it relates in the short term. Similarly, it is not likely to threaten any relevant ecosystem in the short term. To contain and minimise the risks in the longer term the recommendations listed below have been made. DEWHA believes that product taken in the fishery should be exempt from the export controls of Part 13A of the EPBC Act, with that exemption to be reviewed in 5 years.

DEWHA considers that the operation of the fishery does not, or is not likely to, adversely affect the survival in nature of a listed threatened species or population of that species, or the conservation status of a listed migratory species, cetacean or listed marine species or a population of any of those species. DEWHA also considers that under the management plan operators are required to take all reasonable steps to avoid the killing or injuring of protected species, and the level of interaction under current fishing operations is low.

In the initial assessment of the fishery in 2003, the Spanish Mackerel Fishery Management Plan (1 February 1993) was accredited under Part 13 of the EPBC Act. The fishery is now managed under the *Spanish Mackerel Fishery Management Plan 2005*. DEWHA considers that the *Spanish Mackerel Fishery Management Plan 2005* is appropriately precautionary and is unlikely to represent a significant impact on protected species given the existing extremely low rate of interaction. In addition, DPIFM has implemented a protected species identification and education program since the last assessment, which will enable them to gather more reliable information on the nature and frequency of protected species interactions. DEWHA therefore believes it appropriate to accredit the *Spanish Mackerel Fishery Management Plan 2005* for the fishery under Part 13 of the EPBC Act.

Recommendations are provided below with a brief explanation of the related issue/intent. Unless a specific time frame is provided in the recommendation each recommendation must be addressed within the life of the declaration (5 years).

Table 4: NT Spanish Mackerel Fishery Assessment– Summary of Issues and Recommendations, February 2008

	Issue	Recommendation
1	<p><u>General Management</u> Export decisions relate to the arrangements in force at the time of the decision. In order to ensure that these decisions remain valid and export approval continues uninterrupted, DEWHA needs to be advised of any changes that are made to the management regime and make an assessment that the new arrangements are equivalent or better, in terms of ecological sustainability, than those in place at the time of the original decision.</p> <p>DEWHA notes that future assessment needs for the NT Spanish Mackerel Fishery are made available through the annual NT Fishery Status Reports, which outlines potential intended changes to the fishery’s management arrangements. DEWHA supports the continued reporting of future assessment needs for the fishery, but reinforces the need for the DPIFM to advise DEWHA of any intended change to the NT Spanish Mackerel Fishery management arrangements, including legislated amendments that may affect sustainability of the target species or negatively impact on byproduct, bycatch, protected species or the ecosystem.</p>	<p>Recommendation 1: Operation of the NT Spanish Mackerel Fishery will be carried out in accordance with the Spanish Mackerel Fishery Management Plan 2005 in force under the NT Fisheries Regulations 1993 and the NT <i>Fisheries Act 1988</i>.</p> <p>Recommendation 2: DPIFM to advise DEWHA of any intended change to the NT Spanish Mackerel Fishery management arrangements that could affect the criteria on which EPBC Act decisions are based.</p>
2	<p><u>Annual Reporting</u> It is important that reports be produced and presented to DEWHA annually in order for the performance of the NT Spanish Mackerel Fishery and progress in implementing the recommendations in this report and other managerial commitments to be monitored and assessed throughout the life of the declaration. Annual reports should follow Appendix B to the <i>Guidelines for the Ecologically Sustainable Management of Fisheries - 2nd Edition</i> (the Guidelines) and include a description of the fishery, management arrangements in place, research and monitoring outcomes, recent catch data for all sectors of the fishery, status of target stock, interactions with protected species, impacts of the fishery on the ecosystem in which it operates and progress in implementing</p>	<p>Recommendation 3: DPIFM to produce and present reports to DEWHA annually as per Appendix B to the ‘Guidelines for the Ecologically Sustainable Management of Fisheries - 2nd Edition’.</p>

	<p>DEWHA recommendations. Electronic copies of the Guidelines are available from the DEWHA website at http://www.environment.gov.au/coasts/fisheries/publications/guidelines.html</p>	
3	<p><u>Total Allowable Catch / Estimated sustainable yield</u> The NT Spanish Mackerel Fishery exceeded its TAC level of 450 t (for all sectors) in 2005 and 2006. The commercial sector exceeded its 342 t allocation in 2005 (390 t) and 2006 (409 t) and the offshore net and line sector also exceeded their 13.5 t Spanish mackerel allocation in 2004 (26 t), 2005 (20.6 t) and 2006 (26.5 t). The 2006 Fishery Status Report states that the aggregate catch for all sectors in 2005 and 2006 exceeded 90% of the TAC for the fishery, triggering a performance indicator and a review of the fishery's management arrangements.</p> <p>DPIFM indicate that a review into management arrangements, including whether mitigation management measures are required, will be undertaken at the next Spanish Mackerel Fishery Management Advisory Committee (MAC) meeting. While DPIFM indicate that current catches are not sufficiently high to warrant any immediate concern, the management action relating to a trigger of this performance indicator includes ensuring that aggregate landings by all sectors does not exceed the estimated sustainable yield (i.e. the TAC). DEWHA recommends DPIFM, through collaboration with the Spanish Mackerel Fishery MAC, adequately review the fishery's management arrangements, determine how catch rates for all sectors can be reduced to remain within the TAC and implement appropriate management options. This is particularly important since the TAC was adopted to ensure protection of the resource in the absence of information on harvest rates or abundance. This is supported by a public comment that was received by DEWHA in November 2007 which highlighted concern that the fishery has exceeded its TAC for consecutive years.</p>	<p>Recommendation 4: Within two years, DPIFM to review relevant management arrangements and, where appropriate, develop and implement alternative management options to ensure the catch of all sectors of the Spanish Mackerel Fishery remains below the Total Allowable Catch.</p>

<p>4</p>	<p><u>Harvest rates / abundance estimates</u></p> <p>In the absence of more information for alternative assessments, initial management of the fishery used the approximate catch of the Taiwanese fleet (450 t per year) as indicative of an optimum sustainable yield estimate. However, despite a longer time series of catch and effort, as well as age structure information, the 2006 Fishery Status Report states that the real impact of the fishery in any assessments could not be ascertained without better information on harvest rates or abundance. In addition, catch rates are poor indicators of abundance as Spanish mackerel are strongly schooling fish.</p> <p>A Fisheries Research and Development Corporation (FRDC) supported project, GENETAG: <i>Genetic mark-recapture for real-time harvest rate monitoring - pilot studies in northern Australia Spanish mackerel fisheries</i> has commenced and is expected to be completed in 2008. The use of tag-based monitoring could potentially overcome the lack of confidence in the accuracy of the catch data time series and would develop a protocol for directly monitoring catchability and harvest rates. Until the Genetag project's results are known, a preliminary biological reference point of 450 t has been implemented into the fishery's management arrangements, however this reference point also needs to be reviewed prior to harvest rate or abundance estimates being determined (see Recommendation 4).</p> <p>DEWHA recommends DPIFM, in conjunction with relevant stakeholders, analyse and develop harvest rate and/or abundance estimates for Spanish mackerel and review current management arrangements to ensure the ecologically sustainable management of the fishery.</p>	<p>Recommendation 5: Within three years, DPIFM to develop and implement harvest rate and/or abundance estimates for Spanish mackerel and review current management arrangements to ensure the ecologically sustainable management of the fishery.</p>
<p>5</p>	<p><u>Management response to performance triggers</u></p> <p>Objectives, performance indicators, trigger points and management responses are now included in the <i>Spanish Mackerel Fishery Management Plan 2005</i>.</p> <p>The Annual Status Reports for the NT Spanish Mackerel Fishery include guidelines for</p>	<p>Recommendation 6: Within 3 months of becoming aware of a triggered reference point for target, byproduct, bycatch or protected species, DPIFM to review and consider appropriate management responses, including a</p>

	<p>management response and a timetable to review the fishery should a trigger be reached, however DEWHA notes that only one of the performance indicators contains a timeframe for implementation of management action following a breach. Furthermore DEWHA considers that the 12 month timeframe is too long to ensure that appropriate management responses are implemented when a trigger reference point has been breached in order to ensure that the fishery is being managed in an ecologically sustainable manner.</p> <p>DEWHA considers that a three month timeframe is more appropriate and recommends it should be applied to all management responses in order to determine a timely and appropriate response to the triggering of a reference point.</p> <p>Additionally, DEWHA encourages DPIFM to update details of management actions for triggered performance indicators as listed in the Fishery Status Reports to reflect the three month timeframe for review of triggered reference points.</p>	<p>clear timetable for implementation of management action.</p>
6	<p><u>Ecological Risk Assessment</u></p> <p>While the current risk of the fishery to the ecosystem is considered low, DEWHA recommends DPIFM conduct an Ecological Risk Assessment (ERA) to confirm this assumption. An ERA is a valuable process to discuss and identify among relevant stakeholders the potential risks that should be addressed to assist with the ecologically sustainable management of a fishery. This is evident through the Queensland Department of Primary Industries and Fisheries when they conducted an ERA and discovered that harvest levels for Spanish Mackerel in the Gulf of Carpentaria were a moderate risk to the species sustainability.</p> <p>DEWHA note that industry has developed an Environmental Management System (EMS) for the NT Spanish Mackerel Fishery. DEWHA commends industry for developing such an initiative however an ERA to identify and address potential risks in the fishery has not been conducted.</p>	<p>Recommendation 7: Within three years, DPIFM to conduct an ecological risk assessment for all sectors of the fishery (including the restricted bait net component and other NT fisheries that harvest Spanish mackerel) to determine the cumulative impact on the Spanish mackerel stock. The assessment should also consider the NT Spanish Mackerel Fishery’s impact on byproduct, bycatch, protected species and the ecosystem. DPIFM to implement appropriate measures to ensure that identified risks are minimised.</p>

	<p>DEWHA recommends DPIFM, in conjunction with relevant stakeholders, conduct an ERA on the current impact of the fishery on target, byproduct, bycatch species (including protected species) and the ecosystem to assist with the ecologically sustainable management of the fishery. While all protected species should be assessed under the ERA, special consideration should be given to the impact of the fishery on the critically endangered Speartooth shark (<i>Glyphis sp. A</i>) and the vulnerable freshwater sawfish (<i>P. microdon</i>), particularly in the bait net component of the fishery.</p>	
7	<p><u>Compliance</u></p> <p>In the 2002 assessment of the NT Spanish Mackerel Fishery, a recommendation was made by DEWHA for DPIFM to conduct a compliance risk assessment for the fishery. A risk assessment of compliance issues in the fishery was conducted by DPIFM in May 2006, with risk rankings of ‘moderate’ or above requiring review and possible management action.</p> <p>DEWHA commends DPIFM on completing the compliance risk assessment for the NT Spanish Mackerel Fishery and considers that the implementation of appropriate management responses to address moderate risk issues should be given priority. Justification for appropriate management responses should also be clearly documented. The compliance risk assessment analysed several aspects within the fishery, with five out of the nine issues being ranked as ‘moderate’ and one as ‘extreme’ (illegal foreign fishing). In relation to illegal foreign fishing, DPIFM should continue to actively engage with other State and Commonwealth agencies to minimise the risk posed by illegal fishing and once available, incorporate estimates of the level of take from illegal fishing parties into stock assessments and management arrangements for the fishery.</p>	<p>Recommendation 8: Within three years, DPIFM to develop and implement appropriate management responses for risks ranked as ‘moderate’ in the NT Spanish Mackerel Compliance Risk Assessment. DPIFM to continue to engage with other State and Commonwealth agencies to minimise the risk posed by illegal fishing and once available, incorporate estimates of the level of take from illegal fishing parties into stock assessments and management arrangements for the fishery.</p>
8	<p><u>Overall take by other sectors</u></p> <p>No estimates of recreational or indigenous catch have been determined since the</p>	<p>Recommendation 9: By December 2009, DPIFM to develop and implement an</p>

	<p>National Recreational Fishing Survey and Indigenous Fishing Survey in 2000. The need to include recreational and Indigenous catches into fishery management arrangements is heightened by the fact that it is a shared fishery with total allowable catch limits for each sector operating in the fishery. Log book returns provide catch data for the commercial sector and fishing tour operators but there is no current information on recreational or Indigenous catches.</p> <p>There is now a need for DPIFM to factor current estimates of all removals of Spanish mackerel into management arrangements to ensure overall catch levels are sustainable. This is supported by a public comment that was received by DEWHA in November 2007 which highlighted the lack of any data collection over the past seven years on recreational and Indigenous catches and the failure to account for such catches in stock and ecosystem assessments. It is important to ensure that reliable estimates of non-commercial catch are taken into account to make sure management arrangements are appropriately precautionary.</p> <p>DEWHA recommends that DPIFM develop and implement an appropriate strategy to collect current estimates of the recreational and Indigenous take of Spanish mackerel from NT waters and factor estimates into the fishery's management arrangements. When developing a strategy to collect estimates of the overall take of Spanish mackerel, DPIFM should consider differentiating the <i>Scomberomorus</i> species taken by recreational and Indigenous fishers to determine the true take of the narrow-barred Spanish mackerel (<i>Scomberomorus commerson</i>).</p>	<p>appropriate process to estimate the recreational and indigenous take of Spanish mackerel from NT waters and, once available, factor these estimates into future stock assessments and management arrangements, to ensure overall catch levels are sustainable.</p>
9	<p><u>Size composition of Spanish mackerel</u></p> <p>In the initial assessment of the NT Spanish Mackerel Fishery in 2002, a recommendation was made for DPIFM to monitor the size composition of the commercial catch of Spanish mackerel and introduce additional management measures if the catch composition shifts to juvenile fish. Through logbook returns and observer data, DPIFM conducts research in the fishery to evaluate both the mean and actual size</p>	<p>Recommendation 10: To ensure the sustainability of Spanish mackerel stocks, DPIFM to develop a performance indicator, trigger point(s) and management responses for changes in size composition of the commercial catch of Spanish mackerel. Should the</p>

	<p>and sex composition of the harvest.</p> <p>DPIFM indicate that should research determine significant changes in any aspect of the fishery, a review of the management arrangements will be undertaken. Size, sex and maturity information is an important component to the review of stock status and the fishery's ecologically sustainable management. DEWHA recommends that DPIFM continue to regularly monitor size composition of the commercial catch of Spanish mackerel and introduce appropriate management measures in a timely manner should the catch composition shift to juvenile fish. Additional management measures to deviate from a shift towards juvenile fish may include the introduction of minimum size limits or spatial closures to protect juvenile stock.</p>	<p>performance indicator be triggered, DPIFM to implement appropriate management actions in a timely manner.</p>
10	<p><u>Protected species reporting</u></p> <p>DPIFM considered the non-reporting of protected species interactions in its Compliance Risk Assessment for the fishery, resulting in a risk ranking of 'moderate', noting non-reporting was likely to be rare.</p> <p>While there have been minimal reported interactions with protected species with the NT Spanish Mackerel Fishery, DEWHA notes that there is potential for interactions with protected species and there is a need for ongoing recording/reporting of interactions in the fishery to confirm assumptions that interactions are minimal and to meet legislative requirements of protected species reporting under the EPBC Act. This is particularly important as the fishery operates in areas known to be inhabited by the critically endangered Speartooth shark (<i>Glyphis sp. A</i>) and the vulnerable freshwater sawfish (<i>Pristis microdon</i>).</p> <p>Under sections 199, 214, 232 and 256 of the EPBC Act it is a requirement for individual fishers to report interactions with a protected species in Commonwealth waters within seven days of the incident occurring. In addition, EPBC Regulations specify that the consequence of the interaction should also be reported.</p>	<p>Recommendation 11: In relation to recording interactions with protected species in the fishery DPIFM to continue to ensure:</p> <ul style="list-style-type: none"> (a) fishers are aware of the EPBC Act requirement to report protected species interactions within seven days; (b) fishers (including the bait net component) record all interactions with protected species in logbooks, including the status of the species when released; and (c) industry has the capacity to make these interaction reports at an appropriate level of accuracy.

	<p>As such, DEWHA recommends that DPIFM fisher logbooks (which already provide for interactions to be recorded) be amended to allow recording of the status of the protected species when released.</p>	
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Acronyms

CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CPUE	Catch Per Unit Effort
DEWHA	Australian Government Department of the Environment, Water, Heritage and the Arts
DPIFM	Northern Territory Department of Primary Industry, Fisheries and Mines
EMS	Environmental Management System
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
FTO	Fishing Tour Operators
LENS	List of Exempt Native Specimens
MAC	Management Advisory Committee
NT	Northern Territory
ONLF	Northern Territory Offshore Net and Line Fishery
TAC	Total Allowable Catch
TEP	Threatened, Endangered or Protected