National Plan of Action for the Conservation and Management of Sharks - Australia

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ABSTRACT

The Australian Department of Agriculture, Fisheries and Forestry (DAFF) coordinated the national implementation of the International Plan of Action for the Conservation and Management of Sharks and the development of Australia's National Plan of Action (Shark-plan). The Shark-plan was developed by a Shark Advisory Group comprising of representatives from: relevant Australian Government and State and Territory agencies; the commercial fishing industry; recreational fishing groups; indigenous groups; scientific agencies and conservation groups. The Shark-plan recognises that while Australia is not a major shark fishing nation, sharks are an important part of the total quantity of Australia's wild fish production and that Australian vessels regularly take sharks as target and non-target catch. Australia's Shark-plan was formally endorsed and released in April 2004. The plan identifies 43 actions to improve conservation and management of Australia's shark stocks.

CONTENT

Recognition of the expanding global catch of sharks and the potential negative impacts on shark populations led to the adoption of an *International Plan of Action for the Conservation and Management of Sharks* (IPOA-SHARKS) by the 23rd session of the United Nations Food and Agriculture Organisation's (UN FAO) Committee on Fisheries, Rome, 1999.

Sharks generally have a low reproduction rate, mature late and have small populations. As a result, sharks may be susceptible to overfishing and slow to recover if overfished. The IPOA-SHARKS is a voluntary international instrument developed to encourage and assist nations to take positive action to ensure the conservation and management of sharks and their long-term sustainable use.

The Australian Department of Agriculture, Fisheries and Forestry (DAFF) had responsibility for coordinating the national implementation of the IPOA-SHARKS and development of Australia's *National Plan of Action for the Conservation and Management of Sharks (Shark-plan)*. The Shark-plan was developed by a Shark Advisory Group comprising of representatives from: relevant Australian Government and State and Territory agencies; the commercial fishing industry; recreational fishing groups; indigenous groups; scientific agencies and conservation groups.

There is a considerable body of literature concerning some Australian shark species and stocks. The first task of the Shark Advisory Group was to describe the current state of knowledge of these stocks in the Shark Assessment Report which was completed in 2001. A number of significant issues pertaining to the conservation and management of sharks emerged from the preparation of this document. The Shark-plan was developed following a period of consultation but is largely based on the findings of the Shark Assessment Report.

The Shark-plan recognises that while Australia is not a major shark fishing nation, it is acknowledged that sharks are an important part of the total quantity of Australia's wild fish production and that Australian vessels regularly take sharks as target and non-target catch.

In addition to commercial fishing, sharks may be captured by recreational fishers, shark control devices for bather protection and the aquarium trade. Sharks are also of cultural and spiritual significance to Australian Indigenous people. The spiritual connection to shark varies regionally.

Sharks are valued for their contribution to the marine environment where they often fill the role of peak predator. Australian Government and some State government legislation provides for the listing and protection of threatened shark species, and fisheries are managed according to the principles of ecologically sustainable development.

The resultant Shark-plan aims to address shark conservation and management issues through several key components, including:

- examining management practices in targeted shark fisheries, as well as fisheries where shark is caught as bycatch;
- improving data collection and species identification;
- developing and implementing risk assessments for shark species
- encouraging countries with neighbouring fisheries to work with us to ensure shark species are managed sustainably and responsibly;
- and a community education strategy to raise awareness of shark species, including their role in the overall marine ecosystem, and information on key threatened species.

The Shark-plan was formally endorsed and released in April 2004. The plan identifies 43 actions under six major themes to improve conservation and management of Australia's shark species (see list of actions at Attachment). The Shark Assessment Report and Shark-plan are available at the website:

http://www.daff.gov.au/content/publications.cfm?ObjectID=4914EFAD-E68A-4614-A2A8096C1E824C7A

Extract of the list of actions identified in Australia's Shark-plan, organised under six themes identified in the plan. Note that the table contains material that requires reference to the full Shark-plan for its context.

Action	**Priority**
THEME 1 REVIEW EXISTING CONSERVATION AND MANAGEMENT MEASURES	
1 (a) Assess current management arrangements for sharks against the objectives of this Shark-plan and the issues that this Shark-plan seeks to address; (b) in particular, assess whether these arrangements are consistent with ecological sustainability of sharks and a precautionary approach, and are enforceable; and (c) address any deficiencies within 12 months of that assessment.	1A
2 (a) Assess current management arrangements for listed threatened shark species against the requirements of recovery plans for those species; and (b) address any deficiencies within 12 months of that assessment.	1A
3 (a) Assess the effectiveness of current shark bycatch reduction measures in reducing shark mortality, paying particular attention to: i) the effectiveness of limits and bans on retention of shark by-product; and ii) the effectiveness of "generic" limits on shark byproduct in non-target fisheries; (b) address any deficiencies identified in these assessments; and (c) encourage the adoption of effective shark bycatch reduction measures.	1A
4 (a) Initiate an assessment of the impact of current shark bycatch reduction measures in order to detect any unintentional increases in bycatch of any species, particularly threatened species; and (b) assess the impact of bycatch reduction measures for other species on shark bycatch.	3
5 (a) Assess whether finning bans, requiring fins to be landed when either attached to or accompanied by trunks, are being implemented effectively and are achieving their objectives; and (b) identify any deficiencies and address these.	1A
6 Review the effectiveness of Offshore Constitutional Settlement arrangements in the management of sharks, identify any deficiencies and take action to develop cooperative management arrangements to address these.	2
7 Initiate an assessment of the ecological impacts of shark control programs for bather protection (including drumlines and nets) or if this assessment has recently been undertaken, continue to monitor the ecological impacts.	2
8 Review the effectiveness of management measures for recreational and game fishing in achieving ecological sustainability of shark species.	2
9 Assess the impact of existing management measures for sharks on Indigenous fishing.	1C

THEME 2 IMPROVE MANAGEMENT AND CONSERVATION MEASURES	
10 Ensure that management arrangements for target shark species include precautionary management triggers and pre-determined management processes, including timeframes, should these triggers be reached.	1C
11 Ensure that, where a species is taken in two or more fisheries within a jurisdiction or in two or more jurisdictions: (a) processes are in place to collect/report data from all fisheries and jurisdictions involved in the management of that species uniformly and are included, when data became available, in subsequent stock assessments or risk assessments conducted for that species; (b) the potential of multi-jurisdictional or 'across-fishery' approaches to shark management have been assessed and introduced where possible; (c) effective communication and consultation mechanisms between all stakeholders are in place; and (d) management measures are complementary and consistent with an ESD approach.	1C
12 (a) Initiate action to identify habitat critical to the survival of shark species and where identified as necessary take action to protect, and minimise threats, to these habitats; and (b) within the relevant statutory timeframes protect, and minimise threats to, habitats critical to the survival of species listed under Commonwealth/State/NT legislation.	1B
13 Within 12 months of risk assessments being completed identify those species requiring rehabilitation and develop rehabilitation strategies for these species based on the requirements set out in Guidelines 1.2.1 and 1.2.2 of the Commonwealth Guidelines for the Ecologically Sustainable Management of Fisheries.	1C
14 Within 12 months of a risk assessment finding of "high risk" for a shark species initiate management and research actions to minimise risk including the introduction of precautionary management triggers and pre-determined managed processes, including timeframes, should these triggers be reached.	1C
15 Identify areas of uncertainty in current stock assessments for target shark species in target shark fisheries and ensure that research efforts for these species are focused on reducing this uncertainty, or where stock assessments do not exist, give priority to undertaking them.	2
16 Implement processes to ensure that the scientific research potential of sharks caught in shark control programs is maximised.	1A
17 Initiate action to ensure effective bycatch reduction methods are developed and introduced in all fisheries in which shark are caught as bycatch giving significant priority to species identified as 'high risk": i) in fisheries taking species currently identified by risk assessments or other processes as being at "high risk" methods should be introduced by 2003; and ii) where "high risk" is identified after the adoption of this Shark-plan, methods should be introduced within 12 months of identification.	1C
18 Investigate the potential for DNA identification kits for use in identifying shark	1A

species.	
THEME 3 IMPROVE DATA COLLECTION AND HANDLING	
19 Within 6 months of this Shark-plan being adopted prepare a submission to all fisheries agencies seeking commitment to and proposing a process to achieve inter-jurisdictional data compatibility at the level recommended by the *FAO technical guidelines for responsible fisheries* (No. 4, Suppl. 1. FAO, Rome) and including consideration of the recommendations in Appendix D of this Shark-plan.	1A
20 Assess the findings of the National Recreational and Indigenous Fishing Survey to: (a) identify gaps in existing monitoring and data collection programs for recreational, charter and Indigenous fishing; (b) determine the nature and frequency of future national surveys; (c) determine the nature and role of State/Northern Territory recreational fishing surveys; (d) determine its adequacy for reporting on the issues for the whole of Australia; and (e) where necessary introduce appropriate and effective supplementary or alternative data collection mechanisms to ensure adequate information on recreational, charter and Indigenous fishing is collected for management purposes.	2
21 Ensure that where possible processes for the validation of shark catch data from commercial fisheries and charter operations, using observer, monitoring, fishery-independent research programs or other appropriate methods, have been initiated.	1A
22 Ensure that processes for the collection of data necessary for risk assessments of shark species (including availability, catchability, productivity, distribution) have been implemented.	1C
23 Develop protocols whereby data can be shared between relevant agencies, yet remain secure through appropriate confidentiality agreements that protect commercially sensitive information and intellectual property rights.	2
24 Ensure data are well managed in data bases such that data are secure, have automated internal verification and validation checks, are corrected for double reporting and have procedures for efficient data extraction, exchange and summarisation.	2
25 (a) Ensure, where feasible, that appropriate data is collected on quantifiable aspects of cryptic fishing mortality as an input to stock assessments and risk assessments; and (b) evaluate the sublethal effects of gamefishing, the scientific benefits of targeted/permitted tag and release activities and, where possible, the extent of cryptic fishing mortality arising from recreational and game fishing.	1B
26 Assess availability of Australian export and import data for shark products against the recommendations of the *FAO technical guidelines for responsible fisheries* (No. 4, Suppl. 1. FAO, Rome) and CITES decisions on trade codes identify deficiencies and address these.	2

THEME 4 TARGETED RESEARCH AND DEVELOPMENT	
27 Evaluate the methodologies for risk assessment and adopt a single national risk assessment framework (see Appendix E), consistent across species, fisheries and other impacts, for shark species and a timetable for carrying out risk assessments.	1A
28 Based on the methodology developed under Action 27 initiate risk assessments for all target, byproduct and bycatch shark species including, as far as possible, the risks associated with all impacts on these species, in accordance with the agreed national risk assessment framework and risk assessment timetable and ensure that the data necessary to undertake these risk assessments is collected.	1C
29 Initiate an assessment of opportunities for increasing utilisation/value adding of shark products from currently harvested species and encourage commercial fisheries to exploit these opportunities subject to the long-term ecologically sustainable harvest of shark species.	1A
30 Initiate research to determine the impact on the biology and behaviour of sharks of electromagnetic fields including personal shark protection devices.	2
31 Initiate an evaluation of the methodology, and where possible apply the methodology, to assess the impact of shark management and conservation measures on ecosystem structure and function.	3
32 Produce an information paper on Indigenous shark fishing highlighting the traditional, cultural and spiritual significance of sharks to Indigenous people so as to better accommodate these issues in the development of management arrangements.	1A
33 Identify gaps in knowledge about Indigenous shark fishing and, where the need is identified, develop research proposals to address these gaps.	1C
34 Aim to initiate development of appropriate methods for modelling the population dynamics of chondrichthyans in the ecosystem and develop a basis for distinguishing between natural variation and trends in the system so as to assist in understanding population status, rates of recovery, population structure and distribution.	3
35 Develop a quantitative framework to assess the recovery of listed threatened species.	2
36 Initiate a review of shark handling practices to identify any areas of concern and possible solutions where the need is identified for the conservation and management of sharks. This review could include: (a) the chase of the shark common in game fishing; (b) the issue of finning of live sharks; (c) the issue of towing live sharks back to shore; and (d) the keeping of live shark in aquaria either for display or for restaurant use.	2

THEME 5 UNDERTAKE EDUCATION AND AWARENESS RAISING	
37 Introduce a community education strategy aimed at the general public, commercial, recreational, Indigenous and game fishers. The strategy should aim to: (a) raise national awareness of the vulnerability of particular shark species and in particular their role in the marine ecosystem, current threats and status, the cumulative impact of shark bycatch, the need to return sharks to the sea and to maximise their chances of survival and of safe swimming and safe diving guidelines; (b) educate resource users about the rationale for and use of recorded shark catch data; (c) raise national awareness of the cultural significance of shark to Indigenous peoples based on the outcomes of relevant research as it becomes available; (d) develop an awareness amongst all resource users of the threatened species provisions, reporting requirements and penalties; (e) encourage the trial of techniques to improve shark species identification(eg photos taken with disposable cameras, retention of unknown species for confirmation of species identification), by user groups; and (f) encourage recreational, game fishing and tourist sectors to address specific issues relevant to those sectors.	1A
38 (a) Undertake an assessment of existing shark species identification guides and those under development; (b) ensure guides are culturally appropriate, including the use of Indigenous species names where appropriate; (c) develop a coordinated approach to production of region specific, waterproof species identification charts using existing species guides; (d) ensure the best available guides have been provided to all user groups, processors, compliance officers, observers and scientists involved in each fishery known to take sharks; and (e) develop measures to monitor the effectiveness of the guides.	1A
THEME 6 IMPROVE COORDINATION AND CONSULTATION	
39 Within 6 months of this Shark-plan being adopted: (a) establish a sub-program for shark research in the Fisheries Research and Development Corporation (FRDC);or (b) if, within 6 months of this Shark-plan being adopted, an FRDC shark subprogram has not been established, form a shark research consultative forum to facilitate coordination and collaboration on shark research and develop a strategic plan that responds to the research needs identified in the Shark-plan.	1A
40 Identify and incorporate appropriate sources of advice on fishing for sharks by Indigenous people into shark management decision-making processes where relevant.	1A
41 Seek the advice of Indigenous representatives to identify and implement where necessary effective mechanisms for obtaining reliable catch information and advice from Indigenous communities.	2

42 Actively promote the implementation of the IPOA-Sharks and improved regional management of shark stocks, particularly shared stocks, and protection of threatened species in relevant regional fisheries management organisations and under other relevant international conventions eg CITES and the Convention on Migratory Species.	1B
43 Initiate discussions with countries in the region eg Indonesia, Papua New Guinea, East Timor, New Zealand, in relation to complementary and collaborative management of straddling shark stocks. These discussions should include: the identification and implementation of collaborative measures to enhance the capacity of these countries to collect, analyse and share data on straddling shark stocks; and encourage and assist with the development of national plans of action.	1B
Priority: **1A** Action initiated within 12 months and completed within 2 years, if not sooner **1B** Action initiated within 12 months and completed in shortest possible timeframe **1C** Action initiated within 12 months of completion of prerequisite work completed in shortest possible timeframe **2** Action initiated and completed within 3 years **3** Action initiated within 4 years if not sooner and completed as soon as feasible	