

Revised National Plan of Action for the Conservation and Management of Sharks (Revised Shark-plan 2)

<i>Issues for shark conservation and management identified in Shark-plan</i>		<i>Actions</i>	<i>Priority of issue</i>
Issue 1.	Ongoing measures to aid identification of shark species by all resource users	<ul style="list-style-type: none"> • Continuously improve shark species identification guides, implementing the best available identification guides in all relevant fisheries: <ul style="list-style-type: none"> – ensure guides are culturally appropriate; – including the use of Indigenous species names, noting that most widely distributed species will have multiple Indigenous names; – ensure the best available guides are provided to relevant user groups, including fishers, processors, compliance officers, observers and scientists; and – recognise the importance of, and need to support, taxonomy and collections in the production of up-to-date species identification guides. • Monitor the effectiveness of identification guides. • Investigate the potential for additional tools for shark identification, such as morphological diagnostic tools or DNA identification kits. 	High

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Issue 2.	Secure, accessible, and validated data sets that record all catch data and are relevant to management decisions and consistent over time with compatible resolution between jurisdictions over the full range of each species from all resource users	<ul style="list-style-type: none"> • Establish agreed definitions for main data items, including catch, discard, release and landings. • Obtain better understanding of illegal, unregulated and unreported (IUU) shark catch occurring in Australian waters. • Develop, implement and integrate data verification systems with clear objectives and performance measures. • Enhance the use of data in the management of sharks in Australian fisheries. 	High
Issue 3.	Improved understanding of the markets for and trade in shark products	<ul style="list-style-type: none"> • Monitor and assess the effectiveness of “Fins Naturally Attached” legislation and enforcement measures for all Australian fisheries across jurisdictions. Measures should be promoted for adoption regionally and internationally. • Assess the potential for more comprehensive trade data collection, including the use of appropriate traceability systems, to improve shark and ray conservation and management outcomes, enhance compliance with 	Medium–high

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		<p>Australia's international obligations. and implement a more comprehensive trade data collection system for shark, rays and all their derivative products as appropriate.</p> <ul style="list-style-type: none"> • Consider options for better understanding and regulating imports and exports of sharks and shark products to and from Australia, particularly sharks listed on CITES Appendix II 	
Issue 4.	Coordination of shark research and better integration of all sources of knowledge	<ul style="list-style-type: none"> • Investigate opportunities for collaborative research initiatives to address the aims and objective of Shark-plan 2. • Better incorporate Indigenous knowledge into scientific research in a meaningful way to inform shark conservation and management, following best practice examples where appropriate. 	High
Issue 5.	Maintain and improve the standard of stock assessments for target shark species in dedicated shark fisheries	<ul style="list-style-type: none"> • Ensure appropriate level of assessments for target shark species. • Assess the need for implementation of formal harvest strategies to manage shark catch. • Integrate non-fishing impacts into stock assessment where possible. 	High

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Issue 6.	Assessment of adequacy of management for all shark species and more innovative approaches to dealing with identified shark management issues	<ul style="list-style-type: none"> • Iterative/ongoing jurisdictional assessment of the adequacy of shark management, including the implementation of harvest strategies and compliance, enforcement and education strategies to support sustainability objectives for sharks. • Explore mechanisms for greater collaboration and innovation among jurisdictions regarding research, assessment and management of shared stocks. • Improve education around shark depredation and promote best practice mitigation measures to reduce both shark depredation and mortality in all impacted fisheries. • Better understand the impact of aquaculture on impacted shark species and develop appropriate management and conservation responses. 	High
Issue 7.	Improved understanding of the impacts of and, where required, implementation	<ul style="list-style-type: none"> • Review the effectiveness of management measures for recreational and game fishing in achieving sustainability objectives for shark species and develop recommendations for future management approaches, should this be found to be necessary. Where reliable data on recreational, game and charter fishing take is available, ensure total catch is incorporated into 	Medium

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	<p>of better management for, recreational and game and charter fishing</p>	<p>management decisions.</p> <ul style="list-style-type: none"> • Assess the findings of the reviews mentioned above and relevant recreational and Indigenous fishing surveys to: <ul style="list-style-type: none"> - identify gaps in existing monitoring and data collection programs for recreational, charter and Indigenous fishing. - determine the nature and role of state and territory recreational fishing surveys. - determine the required frequency of future national surveys. - determine the adequacy of reporting on recreational, charter and Indigenous fishing issues at national level. - where necessary, update existing survey methodologies or introduce effective supplementary or alternative data collection mechanisms. - review and where necessary revise recreational, charter and game fishing management arrangements to ensure that impacts on sharks are sustainable. • Where necessary, increase education and enforcement programs in recreational and game-fishing sectors. 	

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Issue 8.	Reduce cryptic fishing mortality of shark species	<ul style="list-style-type: none"> • Improve understanding of the cryptic mortality of sharks determined by the relevant jurisdiction to be high-risk in commercial, recreational or Indigenous fisheries. • Implement strategies to reduce cryptic mortality. • Ensure cryptic mortality is accounted for in the setting of catch quotas (where information is available). 	Medium–low
Issue 9.	Better understanding and, where necessary, recognition in management arrangements, of shark fishing by Indigenous people	<ul style="list-style-type: none"> • Improve data on Indigenous fishing for sharks and incorporate into the overall management arrangements. Identify gaps in knowledge about Indigenous shark fishing and, where a need is identified, develop research proposals to address these gaps. • Recognise the social and economic importance of sharks to some Indigenous communities when developing management and conservation measures. • Assess the impact of existing management measures for sharks on Indigenous subsistence fishing practices. 	Medium

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Issue 10.	Education on shark handling practices for the conservation and management of sharks	<ul style="list-style-type: none"> • Improve education and enforcement around any areas of concern around shark-handling practices. • Implement solutions as required, giving consideration to increased training and enforcement requirements. 	Medium–low
Issue 11.	Risk assessments for all shark species from all impacts on those species	<ul style="list-style-type: none"> • Consider ecosystem impacts when developing management responses for species (or species groups) already assessed as high-risk. • Continue to refine risk assessment processes for target, bycatch and byproduct shark stocks, seeking to include all available data and consideration of cumulative impacts. Collection of data on species biology and human impacts will be foundational to the success of this action. • Implement continuous improvement in developing risk assessments for sharks. 	Medium–high
Issue 12.	Develop strategies for the recovery of endangered, threatened or	<ul style="list-style-type: none"> • For species designated as requiring recovery (including those listed as Threatened and/or Migratory under the EPBC Act, or relevant state or Northern Territory legislation), implement recovery strategies. Recovery strategies should be monitored and revised as appropriate to ensure 	Medium–high

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	protected shark species and populations	<p>effectiveness.</p> <ul style="list-style-type: none"> • Appropriate management strategies should be put in place for commercially significant or targeted species. 	
Issue 13.	Reduce or, where necessary, eliminate shark bycatch	<ul style="list-style-type: none"> • Initiate action (as required) to ensure effective bycatch reduction methods have been developed for all fisheries in which shark are caught as bycatch, giving priority to species identified through risk assessment as 'high-risk'. • Assess the effectiveness of current shark bycatch reduction measures in reducing shark mortality (including cryptic mortality) and develop performance measures for shark bycatch reduction. • Promote review of the effectiveness of shark bycatch reduction measures internationally. • Encourage better sharing of information with Indonesia, Solomon Islands, Papua New Guinea, New Zealand and France in relation to bycatch of transboundary stocks. 	Medium–high
Issue 14.	Better understanding of effects of shark	<ul style="list-style-type: none"> • Undertake periodic assessment/support research of the impact of targeted shark fishing on non-target species (particularly threatened species) and 	Medium–low

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	fishing, cage diving and control programs for bather protection and management practices on ecosystem structure and function	identify priority issues for management. <ul style="list-style-type: none"> • Undertake periodic assessment/support research of the impact of fishing operations on structure and function of shark species/stocks and identify priority issues for management. • Periodic assessment of the ecological impacts of shark control programs for bather protection and cage diving tourism. • Investigate methods for modelling the population ecology of sharks and distinguishing between natural and fishing-induced variation, so as to better understand population status and rates of recovery. • Consider ecosystem structure and function in the development and implementation of management measures, including trophic system interactions and how changes in systems may be measured. 	

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Issue 15.	Better understand the potential impact of climate change and consider appropriate management and conservation responses	<ul style="list-style-type: none"> • Encourage research and data collection to improve our understanding of the impact of climate change on the conservation and management of sharks. • Embed climate preparedness in management and conservation decisions, noting the high level of uncertainty in relation to climate impacts on all fish species, including sharks. 	High