



Colclough's Shark  
Image: Nigel Marsh Photography

## The Action Plan for Australian Sharks and Rays 2021

### QUESTIONS AND ANSWERS

#### 1. What is *The Action Plan for Australian Sharks and Rays 2021*?

*The Action Plan for Australian Sharks and Rays 2021* (hereafter Shark Action Plan) provides a national extinction risk assessment for all 328 chondrichthyan fishes (sharks, rays, and chimaeras) occurring in Australian waters. Extinction risk is assessed for each species at the national-scale by applying the International Union for Conservation of Nature (IUCN) Red List of Threatened Species Categories and Criteria. This system provides an objective framework for the classification of extinction risk. Extinction risk assessments under this framework consider all available information on a species' taxonomy, distribution, population status, habitat and ecology, major threats, use and trade, and conservation measures. The IUCN Red List Categories and Criteria utilise a series of thresholds to evaluate extinction risk based on population size reduction, geographic range, population size, or the probability of extinction. Assessments allow for the use of all available data and information and allow for the use of observation, estimation, inference, and suspicion. Information sources used in the assessments include global IUCN Red List assessments; the reports and documents listed in Question 5 below; the primary literature; and fisheries reports, combined with

the expert judgment of the authors and consulted colleagues. The assessments presented here have been prepared in a standardised and consistent format for the Shark Action Plan by the authors.

The Shark Action Plan provides a national extinction risk status assessment and recommends actions for conservation at the species level for all Australian sharks, rays, and chimaeras. Fisheries assessments of populations and stock status take several forms including stock assessments, sustainability assessments, and ecological risk assessments; the Shark Action Plan does not present these types of assessments.

The Shark Action Plan is intended to inform policy makers, resource managers, and researchers about species extinction risk status within Australian waters to help underpin management initiatives such as threatened species listings at State, Territory, and Commonwealth levels. Categorisation of species extinction risk status and associated information have identified data gaps, areas of research need, and species which should be a focus of additional study to refine their status. This information should help guide research projects and prioritisation as well as management processes.

---

*The Marine Biodiversity Hub is funded by the Australian Government's National Environmental Science Program.*



## 2. Why do we need a shark action plan?

The 2013 report of the Senate Environment and Communications References Committee Inquiry into 'The effectiveness of threatened species and ecological communities' protection in Australia' recommended the establishment of specialist scientific sub-groups to support the work of the Commonwealth Threatened Species Scientific Committee (TSSC), with a particular focus on systematic reviews of the *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act) threatened species lists. An incorrect listing may lead to regulatory inefficiency (by triggering regulatory provisions of the EPBC Act) or poor targeting of conservation effort. The Department of Agriculture, Water and the Environment works with the TSSC to ensure the EPBC Act lists of threatened species are as accurate and up to date as possible, partly through the development of Species Expert Action Plans.

Australia has Action Plans for a variety of taxa including *The Action Plan for Australian Birds 2010*, *The Action Plan for Australian Mammals 2012*, and *The Action Plan for Australian Lizards and Snakes 2017*, but there has been an absence of an Action Plan for our diverse sharks and their relatives, the rays and chimaeras. The Shark Action Plan reviews the national extinction risk status of each Australian shark, ray, and chimaera species against IUCN threatened species listing criteria and provides recommendations that may be used in the prioritisation of future EPBC Act listing assessments. An Action Plan is needed to provide managers of sharks and their habitats with a national-scale assessment that identifies priority at-risk species, species that may need future protection, and species of no immediate conservation concern.

The Shark Action Plan provides the first complete extinction risk assessment of all Australian sharks, rays, and chimaeras. It provides species-level extinction risk status and actions to address knowledge gaps and conservation. For each threatened species, a recommendation is made in relation to the EPBC Act, which includes consideration of listing under the Act, consideration of up-listing under the Act, consideration of down-listing under the Act, and prioritisation of data collection where further data are required to strengthen the evidence-base underlying the extinction risk status determinations.

## 3. Why was the IUCN Framework used to assess the extinction risk of sharks?

The Australian Government and all states and territories in Australia have agreed to establish a common assessment method for the assessment and listing of threatened species. The common assessment method

is a consistent approach to the assessment and listing of nationally threatened species across the Australian jurisdictions. It is based on the best practice standard developed by the IUCN as used to create the IUCN Red List of Threatened Species, with some amendments to suit the Australian context.

The national extinction risk status assessments in the Shark Action Plan are largely consistent with the Australian common assessment method. The Australian system does not however recognise IUCN Red List categories designed to accommodate species with lower levels of extinction risk (the categories Near Threatened and Least Concern) or undefined extinction risk (the category Data Deficient). The Shark Action Plan identifies those species that meet these IUCN Red List categories.

Applying this full spectrum of categorisation is particularly important to demonstrate the high level of secure species: 70% of Australian sharks were assessed as Least Concern and 10% as Near Threatened. There may still be actions required to maintain the status of these species and the Action Plan provides a species account for each species summarising extinction risk status and recommended actions. Using the IUCN system also allowed the Shark Action Plan to highlight Data Deficient species for which Red List status cannot be determined on the basis of existing information and thus are priorities for research.

## 4. How does the shark action plan deal with subpopulation structure?

The Shark Action Plan assessed extinction risk status at the national level, that is, for the entire Australian geographic range of a species. Separate assessments are not provided for subsections of a species' range whether that be a state/territory or subpopulation.

The scale of an assessment can effect a species' extinction risk status. For example, under the EPBC Act, the Grey Nurse Shark has separate listings for the eastern Australian (Critically Endangered) and western Australian (Vulnerable) subpopulations. Data from New South Wales and Queensland shark control programs showed significant population reductions of >97% over the last three generations (75 years), and therefore the Grey Nurse Shark eastern Australian subpopulation would meet Critically Endangered if it was assessed separately. The Shark Action Plan assessed the national extinction risk status of the species as Vulnerable, balancing severe population declines in eastern Australia with low catch levels in western Australia (with an historical stable trend) and a lack of significant threats across its wide northern Australian range (albeit where records are sparse). Significant population reduction outside of eastern Australia is therefore unlikely.





## 5. What other plans and assessments exist for sharks in Australia and how do they differ from the shark action plan?

The Shark Action Plan provides a comprehensive standardised national assessment of extinction risk status of all 328 shark, ray, and chimaera species occurring in Australian waters. Following are some of the other plans and assessments that differ from the Shark Action Plan. The Shark Action Plan drew upon the information available in these plans and assessments.

### ***Shark Action Plan Policy Report 2018***

The National Environmental Science Program Marine Biodiversity Hub Project 'Shark Action Plan' has delivered two major documents: the *Shark Action Plan Policy Report (2018)* and *The Action Plan for Australian Sharks and Rays 2021* book. The Policy Report provided an overview of extinction risk status and distribution focusing on threatened species, an overview of data gaps and data needs, priority actions for national species assessments and listings, research priorities and future needs, a review of common threats to listed species, a review of research related to climate change effects on sharks, and policy advice on internationally-listed shark species and EPBC listed Conservation Dependent shark species.

The Policy Report provides high-level overviews and commentary on species falling within threatened categories, while the Shark Action Plan provides the complete extinction risk assessment of each species (i.e. threatened, non-threatened, and Data Deficient) and recommends actions for their conservation at the species level. Individual extinction risk status assessments in the Shark Action Plan include the IUCN Red List category, a summary of the reason for that listing, key ecological information (distribution, habitat, depth, maximum size), an assessment justification, threats, knowledge gaps, current management, and conservation actions needed. The extinction risk status of a small number of species changed between the publication of the Policy Report and the Shark Action Plan as assessments were reviewed and standardised and new information incorporated.

### ***A Report Card For Australia's Sharks 2019***

The Fisheries Research and Development Corporation (FRDC) funded *A Report Card for Australia's Sharks* to assess the sustainability status of sharks and a small number of rays from Australian waters. The Report Card for Australia's Sharks assessed sharks and shark-like rays (196 species) representing 60% of the fauna covered in the Action Plan (328 species). A main focus of *A Report Card for Australia's Sharks* was to present assessments of sustainability by using criteria of the Australian Government's Status of Key Australian Fish Stocks Reports to indicate the sustainability of these shark species in Australian fisheries.



To do this, the Report Card for Australia's Sharks considered the published global Red List status of species and used an equivalency table to derive assessments of sustainability status. A *Report Card for Australia's Sharks* focused on sustainability status for a subset of species while the Shark Action Plan provides the national extinction risk status for all species.

### **Australia's Second National Plan of Action for the Conservation and Management of Sharks 2012 (Shark-plan 2)**

Australia's Second National Plan of Action for the Conservation and Management of Sharks 2012 (Shark-Plan 2) was developed by state, Northern Territory, and Australian Government agencies to identify research and management actions across Australia for the long-term sustainability of sharks, including actions to minimise fishing impacts on sharks. Shark-Plan 2 meets one of Australia's international obligations under the United Nations Food and Agriculture Organization's *International Plan of Action for the Conservation and Management of Sharks*. Despite the similar titles, Shark-Plan 2 outlines broad-level conservation and management issues and actions for sharks in Australia while the Shark Action Plan provides the extinction risk status of individual species and recommends actions for their conservation at the species level for all Australian sharks, rays, and chimaeras.

### **Shark Assessment Report 2018, Department of Agriculture**

This report is a commitment under the United Nations Food and Agriculture Organisation's *International Plan of Action for the Conservation and Management of Sharks* and Australia's *National Plan of Action for the Conservation and Management of Sharks* (see above). It provides a synthesis of management arrangements, catch, and sustainability of sharks across Australia. It provides a summary of the Status of Australian Fish Stocks Reports (see below) of 10 commercially harvested shark stocks across five species. The report also provides a summary of the stock status of seven stocks across six species of straddling and/or highly migratory oceanic species. The *Shark Assessment Report 2018* presents a high-level synthesis and focuses on a small number of species, while the Shark Action Plan provides the extinction risk status of individual species and recommends actions for their conservation at the species level for all Australian sharks, rays, and chimaeras.

### **Status of Australian Fish Stocks Report 2020**

The *Status of Australian Fish Stocks Report 2020* determines the sustainability status of Australia's key wild fish stocks by bringing together available biological, fisheries catch, and fisheries effort information. Fish

stocks evaluated include a small number of commercially important shark species and groups representing 18 stocks across 10 species and one species-group. The majority of the stocks (12) are whaler sharks of the family Carcharhinidae. The *Status of Australian Fish Stocks Report 2020* presents the sustainability status of exploited stocks including a limited number of sharks, while the Shark Action Plan provides the extinction risk status of individual species and recommends actions for their conservation at the species level for all Australian sharks, rays, and chimaeras.

### **Fishery Status Reports 2020, Department of Agriculture and Water Resources (ABARES)**

*Fishery status reports 2020* provides an independent evaluation of the biological and economic status of 96 fish stocks across 22 fisheries, including those managed both solely and jointly by the Australian Government. The reports summarise the performance of these fisheries against the requirements of fisheries legislation and policy. Fish stocks evaluated include a small number of commercially important shark species and groups (deepwater sharks, Elephantfish, gulper sharks, Gummy Shark, sawsharks, School Shark). This report presents the biological and economic status of exploited stocks including a limited number of sharks, while the Shark Action Plan provides the extinction risk status of individual species and recommends actions for their conservation at the species level for all Australian sharks, rays, and chimaeras.

## Further information

The *Action Plan for Australian Sharks and Rays 2021* is available at: [www.nespmarine.edu.au](http://www.nespmarine.edu.au)

## Contact

**Dr Peter Kyne**

[Peter.Kyne@cdu.edu.au](mailto:Peter.Kyne@cdu.edu.au)

Ph: +61 447 306 344



Coastal Stingaree. Image: David Muirhead

