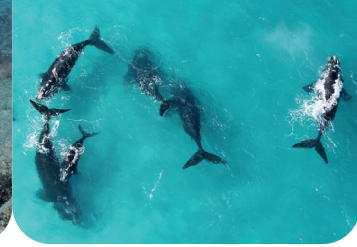




Marine and Coastal

National Environmental Science Program



## RESEARCH OVERVIEW 6.

# Threatened species and ecosystems

**Governments in Australia play an important role in promoting and managing the recovery of threatened species and ecological communities.**

They need timely conservation advice in order to assess nominations for threatened category listings and recovery actions, and determine policies to mitigate threats.

Marine and Coastal Hub projects bring people together to share knowledge, identify research needs, and collect data through surveys, tagging, mapping, citizen science, sampling and experimentation.

Project co-design, participation and delivery supports First Nations peoples' cultural connections and growing involvement in research leadership and management of land and sea Country.



CSIRO

### MITIGATING THREATS

- Assess the potential impacts of offshore renewable energy (ORE) development on priority species and advise on monitoring and mitigation.
- Prioritise research for sawfish sustainability and foster effective sawfish reporting by commercial fishers, to support population estimates.
- Raise capacity for sea-snake bycatch reporting in fishery crew member observer programs.

### STATUS, TRENDS AND HABITAT USE

- Conduct aerial surveys and genetic analyses for dugong population assessment and develop dugong research techniques for northern Australia sea Country.
- Use satellite telemetry to track sawfish in northern WA.
- Monitor southern right whale recovery, identify aggregation areas and improve data flow for population assessment.
- Use drones and underwater cameras to assess critical Australian sea lion habitat use and risks to population recovery.
- Refine abundance and trend estimate for the eastern Australian grey nurse shark population and investigate aggregation sites.
- Use next generation genetic sequencing and novel imaging survey tools to estimate the Macquarie Harbour Maugean skate population.
- Update national trend analyses for 15 migratory shorebirds and assess conservation actions and population recovery.
- Survey and assess changes in black rod cod abundance and size.



David Harasti

### INDIGENOUS LEADERSHIP AND COLLABORATION

- Support participation in environmental markets and develop Indigenous-led feral ungulate management to improve turtle hatching success and coastal wetland condition.
- Develop Indigenous-led dugong monitoring in the Kimberley through collaborative research, knowledge and data sharing.
- Train and equip Indigenous rangers to monitor southern Gulf of Carpentaria sawfish.
- Work with Indigenous rangers to tag and survey Australian sea lions in SA and WA.
- Gather Indigenous knowledge on cultural connection to southern right whale, humpback whale, orca, dolphins and sharks in south eastern Australia.



Christophe Cleguer



## COLLABORATIVE RESEARCH

## OUTCOMES FOR RESEARCH USERS

**Consolidating knowledge** and evaluating risks of ORE development to priority threatened species

Mitigating threats

**DCCEEW, NOPSEMA, ORE proponents, other stakeholders and rights holders** > improved capacity to identify and mitigate risk

**Forging** a collaborative research and data-collection pathway for sawfish conservation; tracking WA and Gulf of Carpentaria (GoC) sawfish dispersal with satellite telemetry

**Commercial fishers, coastal councils, Parks Australia, Traditional Owners, state and territory governments** > population monitoring supported by fishery bycatch reporting

**Improving** sea-snake bycatch reporting in commercial fisheries to support population assessment

**DCCEEW, park and fishery managers, state and territory governments** > improved capacity for sea-snake by-catch reporting and conservation

**Aerial surveys** and genetic analyses of GoC dugongs; new dugong research methods for northern Australia sea Country

Status, trends and habitat use

**DCCEEW, GBRMPA, Aboriginal land councils and corporations, state and territory governments** > knowledge for sustainable dugong management; Indigenous-led monitoring and management

**Deploying drones** and underwater cameras to map and assess critical Australian sea lion habitat in collaboration with Indigenous rangers

**DCCEEW, state governments, SA and WA Aboriginal corporations** > knowledge for conservation including recovery planning and healthy Country management

**Monitoring**, identification of aggregation areas, and efficient data flows for population estimation and conservation assessment: southern right whales, eastern Australian grey nurse sharks, Maugean skate and black rock cod

**DCCEEW, state governments, Traditional Owners, Parks Australia** > new knowledge for conservation plans, policies and actions, recovery monitoring, risk assessment, adaptive management and fisheries management

**Estimating population trends** and survival rates for migratory shorebirds

**DCCEEW, Birdlife Australia** > evidence for threatened species listings and reviewing conservation actions

**Supporting** environmental market participation through ungulate control for carbon abatement; developing integrated feral pig management with the North Australian Indigenous Land and Sea Management Alliance

Indigenous leadership and collaboration

**DCCEEW, NT Government, Aboriginal land councils and corporations, Cape York NRM, and the Indigenous Carbon Industry Network** > Indigenous-led feral pig control that significantly improves turtle hatchling success and wetland condition

**Sharing** Indigenous connections to cetaceans and related species in south-eastern Australia

**Indigenous communities, DCCEEW** > reawakening of Indigenous cultural connections to sea-kin

**Equipping** Indigenous rangers to monitor Southern Gulf sawfish

**Indigenous communities, DCCEEW** > Indigenous-led sawfish monitoring

**Tagging** Australian sea lions in SA and WA with Indigenous rangers

**Indigenous communities, DCCEEW** > knowledge and skills for conservation

Top panel images left to right: David Harasti, Christophe Cleguer, Graeme Edgar, Joshua Smith, Nathan Angelakis



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