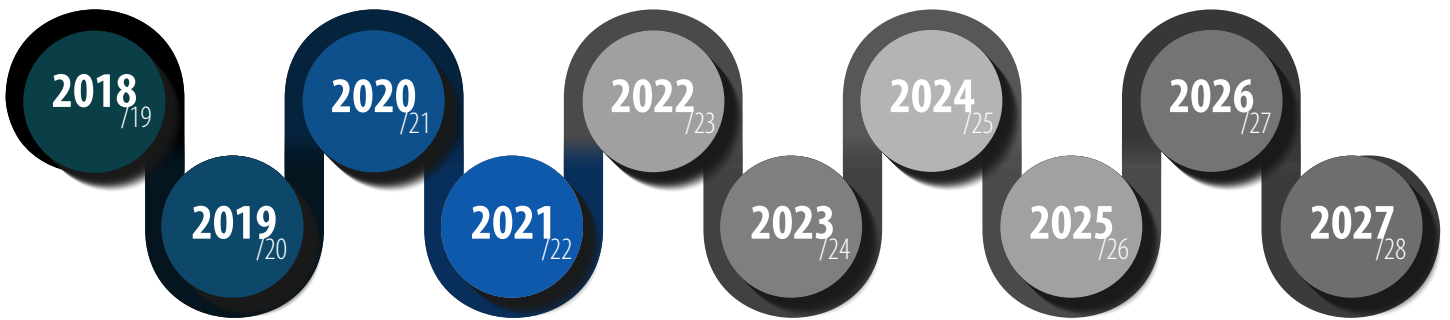


Marine Estate Management Strategy Achievements



2018-2022

Our key achievements for the first four years of the Strategy



Water quality & litter

1,700 m² of intertidal Sydney rock & 1000 m² subtidal native flat **oyster reef bases** constructed as part of the Wagonga Inlet Living Shoreline project at Narooma



Oyster Reef Restoration
7,500 tonnes of rock & 180 m³ of shell substrate laid to **rehabilitate 2.5 ha of oyster reef** in the Port Stephens - Great Lakes Marine Park



Priority actions developed through collaborative partnerships on the Risk-based Framework for Waterway Health - Richmond River Pilot



New standard conditions for **residential developments** developed & instated, which streamlines how we manage **erosion and sediment control**

Oyster Reef Research
55 million oysters on the new Port Stephens oyster reefs improve water quality by collectively **filtering** approximately **7.5 million litres of water per hour**



Clean Coastal Catchments
12 educational webinars attracting over **1500** viewers
43 articles published on evidence-based best practice



188km+ of riverbank **vegetation rehabilitated** to improve water quality

10 horticulture industry practice workshops reaching over **300 participants**



3 livestock industry workshops reaching **66 producers & industry stakeholders**



Erosion control works on **50 macadamia orchards** on the North Coast to reduce on-farm sediment runoff into waterways

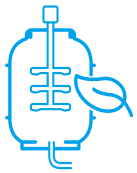
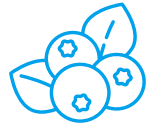
170+ estuaries monitored for water quality & ecosystem health.

90% are rated good - moderate



Blueberry nutrition research facility built

Trials underway on **300 potted blueberry plants** & 7 farmers trialling on-farm nutrient management solutions



3 bioreactors & 1 constructed wetland established to assess natural strategies for mitigating nutrient loss to waterways

408 ha of coastal wetland now protected



Over **11.5 ha of coastal floodplain wetlands** studied to identify remediation options and inform planning
On-ground hydrological rehabilitation works completed at **2 wetland locations**

\$50+ m reducing water pollution

Community understanding has **increase by 25%**, that dropping litter will impact marine life



13% reduction in litter volume between 2018-2020
90% of NSW residents agree littering has a negative impact on waterways & beaches

548 ha of riverbank vegetation improved & **71,300 native plants** planted



Surveyed 8,000 NSW residents to identify their environment values & use of waterways

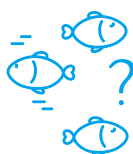


14 government workshops on water quality values for the NSW Water Quality Objectives held

36 km of gravel roads sealed at **81 sites** to reduce sediment & erosion entering coastal waterways



Over **850 tonnes per year** of sediment kept from entering Wallagoot Lake by sealing 230m of unsealed road



Development of cutting edge **indicators to rapidly assess fish biodiversity** in 63 estuaries

Risk-based framework

- adopted in strategic & local planning instruments as best practice for managing cumulative impacts of urban development



- co-designed statewide capacity building program

6.1 km of riverbank stabilised
to reduce erosion & sediment
entering waterways

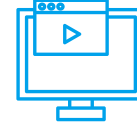


322 ha (49 km) of riverbank fenced to reduce stock access to foreshore areas

Assisting local government to keep fish & coastal habitats healthy

230+ Council Officers trained in fish friendly coastal works techniques

7 educational videos produced



184 coastal catchments mapped for high ecological value aquatic ecosystems

Delivering healthy coastal habitat

Audit of commercial dredging & sand extraction activities in estuaries completed



Updated **Coastal Design Guidelines** publicly exhibited

Stakeholder engagement to improve ICOLL management resulting in **45 ICOLLs audited**

134 breakwater structures audited for multi-use and eco-features

New guidelines developed for including multi-use & eco-features into breakwater maintenance & upgrades

1,695+ km² of marine vegetation in 9 estuaries assessed for threats and risks
37 priority areas identified in 2 estuaries included in strategies for action



37 priority sites identified to **rehabilitate 1,254 km² of marine vegetation**

Reef fish assemblages sampled at **550 sites** using baited remote underwater video systems (BRUVS)



300 jetties inspected for seagrass presence and impacts, and enhancements implemented

700+ floodgate structures on coastal floodplains **assessed** for threats to water quality & 880 soil samples tested



7 floodgate surveys completed for Hastings, Tweed, Macleay, Manning, Clarence, Richmond & Shoalhaven for floodplain infrastructure management planning



3 Domestic Waterfront Structure Strategies released for North Coast rivers delivering a consistent management framework

2 barriers to fish passage removed to collectively **reinstate 275km of fish passage**



6,805 artificial structures mapped in 9 estuaries - jetties, pontoons, breakwalls & groynes

426 km of 3 estuaries assessed using an online mapping tool **to identify suitable sites for jetties & pontoons**



Light Detection & Ranging (LiDAR) data for **3D modelling of terrain** in Brunswick, Tweed & Hastings estuaries delivered



Australia's first state-wide assessment of blue carbon storage completed. **78 sites identified as blue carbon priorities**, to reinstate 61 km² of mangrove & saltmarsh to sequester carbon

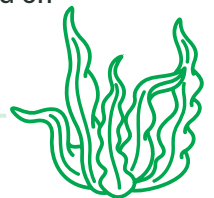
Planning for climate change

Seagrass, mangrove and saltmarsh **maps finalised for 32 estuaries** & released on spatial data portal

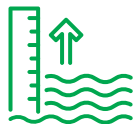
656 observations made by **234 citizen scientists** of marine species outside their historical distributions



Climate change monitoring
Early warning signs identified: distribution & abundance of kelp, coral & urchins monitored on reefs statewide



Predicted mangrove & saltmarsh response to sea level rise assessed



23 marine species found to be experiencing climate-induced distributional changes

Redmap report card for NSW published

Predicting the **future impacts** of climate change **on underwater forests** completed

Protecting Aboriginal cultural values of the marine estate

216 Aboriginal people trained in General Boat Licence (GBL)
30 obtained a Certificate II in Marine Operations
10 obtained a Coxwains Grade 1 qualification
29 completed a Certificate 1 in Marine Operations (Deck Hand)
15 completed flat water training



Sea Country **School Education program** extended to the Worimi & Yaegl Nations & released online.



Skills training led to a Yaegl community member securing a **boat building apprenticeship**

\$10 million invested to protect **Aboriginal cultural values** of the marine estate

Tura Headland Boardwalk completed by Aboriginal rangers from Bega Local Aboriginal Land Council to enhance the protection of this important cultural site

Construction of a dedicated **Aboriginal training vessel** to support training program delivery



8 cultural tourism business plans developed to assist with aspirations & growth of cultural tourism in the marine estate



Reviving traditional cultural practices making boats & nets, Elders sharing knowledge with school children on the South Coast



Engagement with 500+ community members on Sea Country management and Elders as Mentors project launched.

6 meet and greet days on Country in marine parks



2 Aboriginal-owned & run businesses **awarded a SMART drumline contract** supporting cultural economic development

20 Aboriginal people trained in marine wildlife responses & events



31 awarded Certificate II in Tourism

3 purpose-built engagement trailers delivered to showcase Aboriginal connection to Sea Country and boost engagement with Aboriginal communities



6 Yuin divers trained & completed 3 weeks of intense research scuba diving training on the South Coast



1 purpose build training vessel constructed to assist Aboriginal communities gain marine industry skills.

Reducing impacts on threatened and protected species



Preferred habitat & movements of **Right Whales** identified through a citizen science project

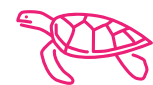
\$35,000 in grants provided to support wildlife rescue & rehabilitation groups targeting welfare & survivorship

87% of seal event response training attendees reported an increase in confidence in responding to an event



Disentanglement training aligns with the NSW NPWS Registered Training Organisation & the next round of training delivered will be Nationally Accredited

Engaging with fishing industry to test innovative fishing gear to reduce interactions with threatened & protected species, **12 seabird management plans were developed** for individual vessels in the NSW ocean fish trawl northern zone fishery



Monitoring of turtle nests documented **200+ successful hatchlings**



9 seahorse hotels installed in Sydney Harbour, housing **140 bred & tagged threatened seahorses**

Commercial Fishing Observer Program

279 observer days over 2 years (~55,000 hook deployments) for the northern NSW Ocean Trap and Line Fishery

Only 2 incidences of bycatch of threatened, endangered, or protected sharks recorded – both released alive

Only 1 incidence of seabird bycatch recorded, from the 4,200+ seabirds observed around fishing vessels



840+ observations days
61,150 hook deployments
12,680 trap lifts monitored, in the Estuary General Meshnet Fishery



80 vets trained in marine wildlife to improve survivorship & understanding of threats



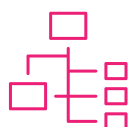
Training provided to over **120 community members** on the protection of beach nesting shore birds

Fabrication of **marine wildlife rescue gear** including dolphin slings, turtle mats & satellite tracking buoys for entangled whales

Collaborated with the University of NSW to research the impacts of the East Australian Current on **Humpback Whale migratory pathways**



NPWS Draft **Operating Model & Prioritisation Procedures** for marine wildlife response finalised & Marine Wildlife Duty Officer training completed to assist coordination of marine wildlife responses



Sustainable fishing & aquaculture

670,000+ views of live events on the Fishing Stream promoting NSW fishing businesses & responsible fishing practices



Eat More NSW Seafood campaign

\$1.5m + in grants delivered to NSW Seafood industry for marketing & promoting NSW seafood

Partnered with NSW recreational fishing trusts projects to **release 250,000+ fingerlings** into Recreational Fishing Havens.

76,500 dusky flathead fingerlings stocked in Lake Conjola, Burrill Lake, St Georges Basin, Lake Macquarie & Camden



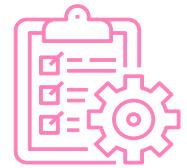
Tide to tip campaign
22,550 kg of waste removed in oyster industry-led clean up



NSW Fisheries Harvest Strategies

Policy & Guidelines developed.

NSW Trawl Whiting Harvest Strategy & NSW Lobster Fishery Harvest Strategy completed & implemented.



5 Harvest Strategy Working groups for Spanner Crab, Trawl Whiting, Lobster, Mulloway & Line & Trap Fishery established.

Marine Biosecurity Awareness

Statewide survey completed informing behaviour change campaign.



2,000 marine biosecurity fact sheets boost biosecurity awareness.

4 offshore artificial reefs deployed at Wollongong, Newcastle, Tweed Heads & Eurobodalla to boost biodiversity & create recreational fishing locations

1,000+ environmentally responsible crab traps & lift nets delivered to Fisheries education officers & the community

130+ commercial fishers completed **best-practice training**

Enabling safe & sustainable boating



NSW Boating Now Program
\$28 m funding 69 projects in Round 3.
258+ projects delivered since the program was launched.



3800+ commercial vessel inspections 2018 - 2022 for safety & environmental standards



4 environmentally friendly moorings installed in Shoal Bay (Port Stephens) to trial new mooring designs to ensure they are not impacting sensitive habitat

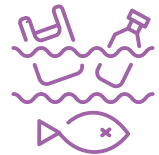
NSW Boating Handbook updated to make boating rules & regulations clearer



Assessed the potential impacts of large ships **anchoring on seabed** habitats, to reduce future impacts



Campaign implemented to educate vessel owners on **garbage pollution regulations**



Marine Infrastructure Plan 2019-2024 released to guide future investments in maritime infrastructure

Private Mooring Map launched, streamlined online platform to search & apply for a mooring



Aboriginal Maritime Safety Plan 2020-2022 delivered, promoting boating safety in NSW Aboriginal communities

Enhancing social, cultural & economic benefits

Indicators & survey methods developed for long-term monitoring of social & cultural benefits & related impacts, & to fill key knowledge gaps

4,000+ participants in the NSW marine estate **community wellbeing surveys**- residents, visitors and youth



562 Sea Country Surveys completed across 11 locations to understand hows Aboriginal people value & culturally connect to Sea Country



Community Wellbeing Framework developed to guide long-term monitoring of social, cultural & economic benefits to the community & related impacts

Marine Estate Education Strategy finalised

Marine Estate Agents school program commenced to enhance stewardship of the NSW marine estate

Economic Contributions Report (2018-2020) completed to assess the economic contribution of the NSW marine estate

Marine Estate Economic Dashboard created to track the economic health of the NSW marine estate



Monitoring and Evaluation Framework completed to guide how we measure the success of the Strategy periodically

Maritime heritage signs installed at Woolgoolga to celebrate the Buster shipwreck

Delivering effective governance

Celebrated the **20th anniversary** of the declaration of **Cabbage Tree Bay Aquatic Reserve** in 2022

Compliance awareness improved with **Sydney Harbour Force, 10-episode TV show** for the Discovery Channel network filmed & aired



Improving Fisheries Compliance
1900+ inspections through education & agency collaboration



Improving Project Governance
28 projects reducing red tape 34 projects improving governance

Program management, monitoring, reporting, evaluation & engagement



100+ projects implemented
cross-agency governance & collaboration rated **STRONG**



\$45 m allocated to partner agencies
through 8 MOUs



10 public snapshots & 4 annual reports published
to communicate progress of Strategy projects



Baseline evaluation of the Strategy's first 2 years found that short-term outcomes are being met

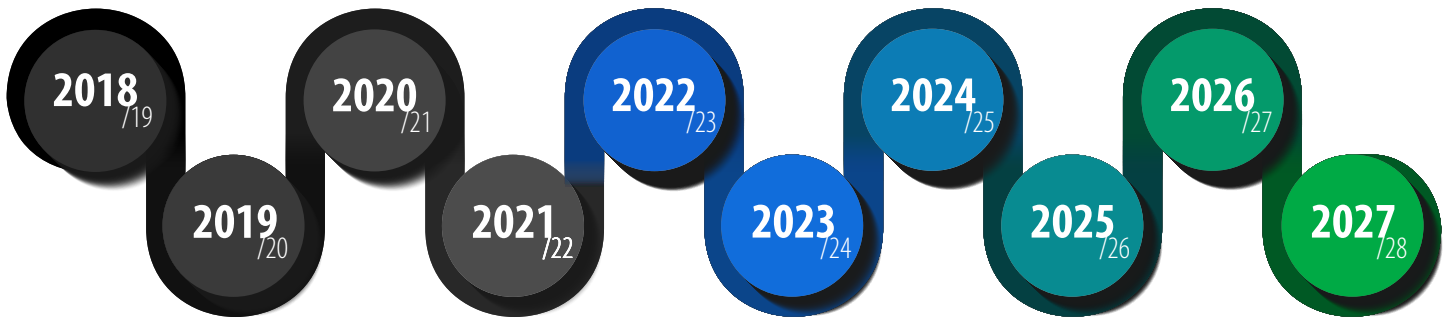
3 Marine Estate Management Strategy Implementation Plans published



Independent review of the MEMS communication & engagement completed to improve processes & delivery in future years



An investment of nearly **\$300 million over 10-years** committed by the NSW Government



Six years ahead to achieve even more!