Marine and Coastal

National Environmental Science Program

Sawfish sustainability:

Collaborating with industry and Indigenous Rangers to inform management

Richard Pillans

March 2025

CSIRO

I would like to begin by acknowledging the Traditional Owners of the land that we're meeting on today, and pay my respect to their Elders past and present.

Project Team & Collaborators

CSIRO staff
Richard Pillans
Toby Patterson
Gary Fry
Pierre Feutry
Richard Hillary
Rasanthi Gunasekera
Anthea Donovan
Lauren Hardimen
Denham Parker
Geoff Carlin

CDU:
Joni Pini-Fitzsimmons
Sam Amini

Murdoch University:
David Morgan

Industry partners and Industry Champions

Gulf of Carpentaria Commercial Fishermen's Association
Northern Prawn Fishing Industry
NT Seafood Council
Barramundi fishers NT

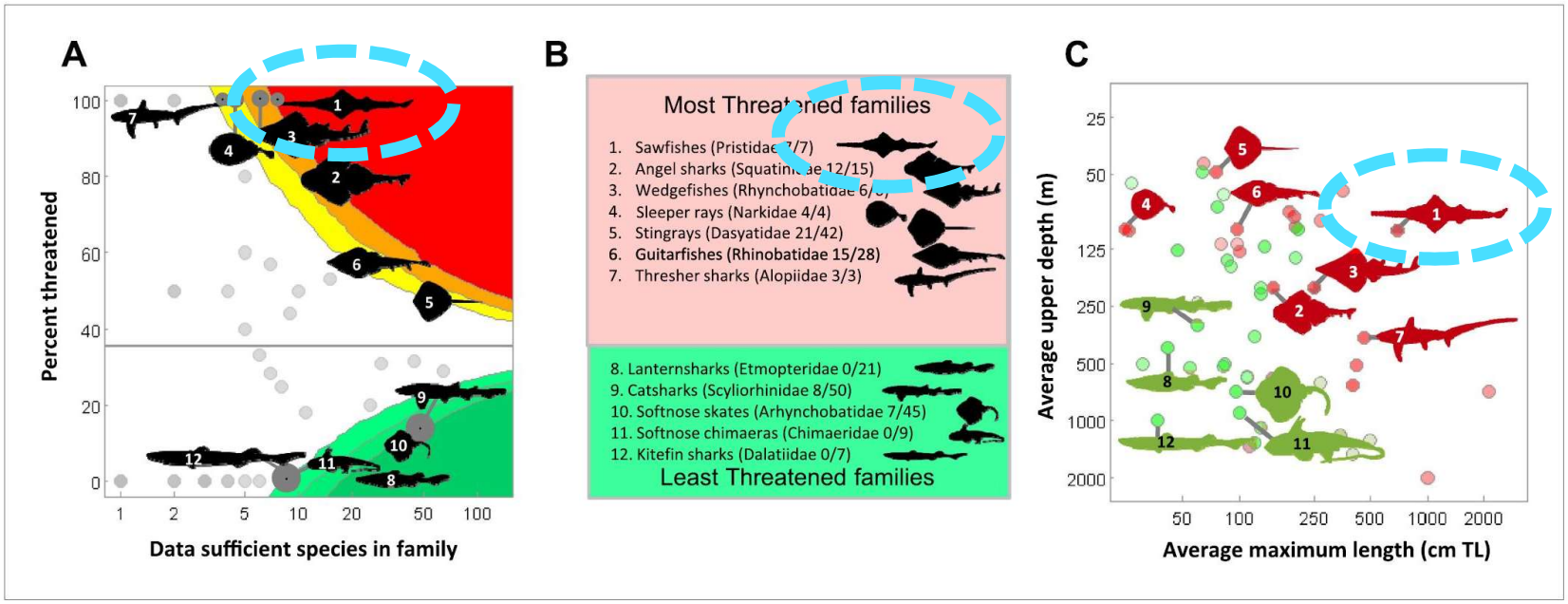
Indigenous Ranger Groups

Carpentaria Land Council Aboriginal Corporation (QLD)
Aak Puul Ngantam Cape York Rangers (QLD)
Northern Land Council - Timber Creek Rangers (NT)
Malak Malak Rangers (NT)

State & Commonwealth Agencies

QLD Department of Agriculture and Fisheries
NT Fisheries
AFMA

Background

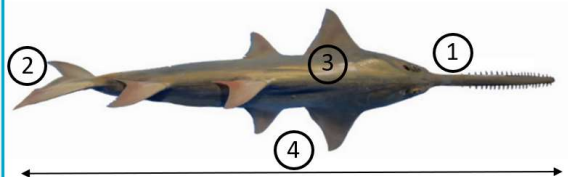


Dulvy et al 2014. Extinction risk and conservation of the worlds sharks and rays. eLife

Sticks like ** to a blanket…..**
Sticks like sawfish to a net!

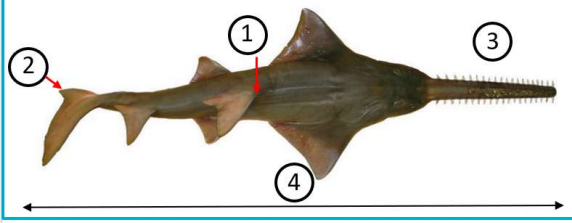
Australian sawfish species

Narrow sawfish – *Anoxpristis cuspidata*



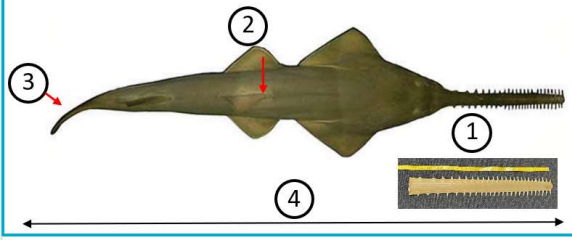
1. No teeth at base of rostrum
2. Forked tail
3. Skin is shiny and smooth
4. Grows to 3.5 m

Largetooth sawfish – *Pristis pristis*



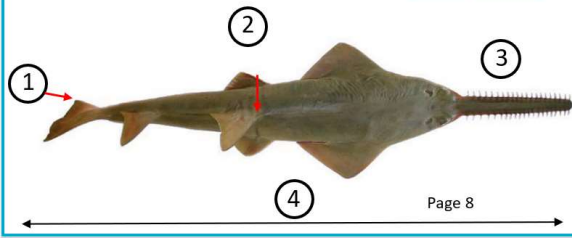
1. Dorsal fin in front of pelvic fin
2. Small lower lobe on tail
3. 17 – 23 evenly spaced teeth
4. Grows to 6-7 m

Green sawfish – *Pristis zijsron*



1. Teeth at base further apart
2. Dorsal fin in behind pelvic fin
3. Very small lower lobe on tail
4. Grows to 5-6 m

Dwarf sawfish – *Pristis clavata*



1. No lower lobe on tail
2. Dorsal fin behind pectoral fin
3. 18 – 22 evenly spaced teeth
4. Grows to at least 3.1 m

EPBC Listing

Migratory

Vulnerable

Vulnerable

Vulnerable

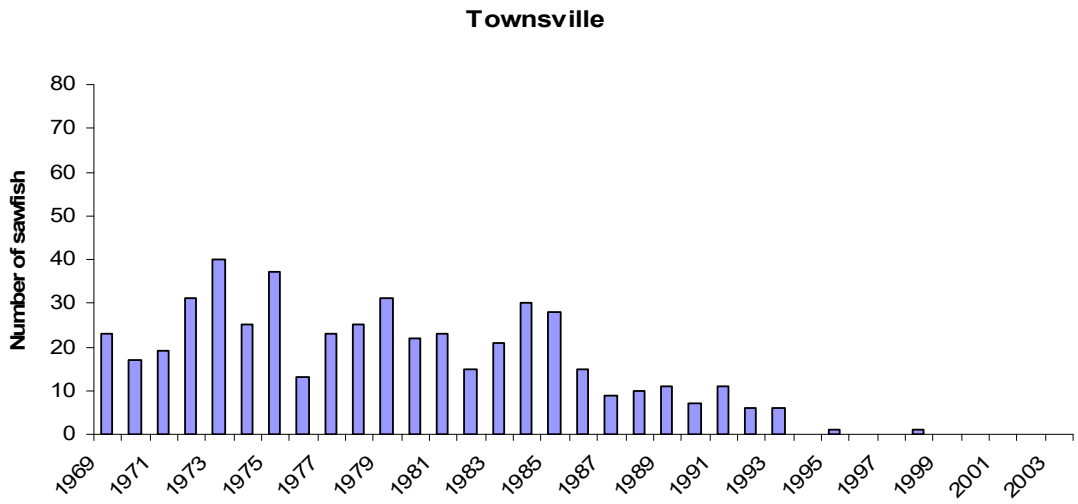
Key threats to sawfish

Water extraction

Barriers to flow/movement
Coastal development

Bycatch in fisheries

Australian sawfish population status



- **Under-reported (no reliable estimates of catch)**
- **No data on abundance**
- **No data on at vessel/post release survival**

Current projects

- FRDC 2021-015: Estimating narrow sawfish (*Anoxypristis cuspidata*) abundance using close-kin mark recapture (led by Toby Patterson)

- NESP Project 3.11: Multi-fishery collaboration to assess population abundances and post release survival sawfish captured in commercial fisheries (FRDC co-funded)

- NESP Project 4.18: Indigenous Ranger-led monitoring of threatened sawfish in the southern Gulf of Carpentaria **(Co-designed)**

- DCCEEW:Two-way science: Ngaliwurru/Ngarinyman Rangers & CSIRO baseline estimates of largetooth sawfish in the Victoria River **(Co-designed)**

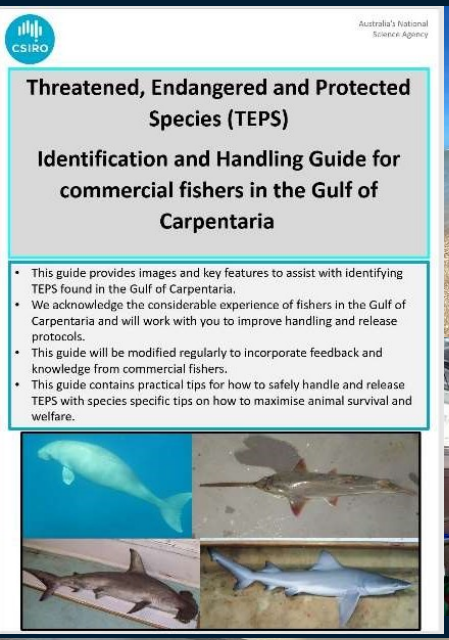
Aims

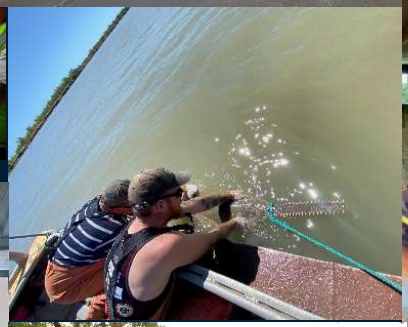
- Develop relationship and build trust with industry and First Nations groups
- Collect accurate bycatch data (Improve reporting and species ID)
- Obtain tissue samples (industry and ranger groups)
- Fishers to deploy satellite tags to estimate post release survival

Outputs

- Increased trust and improved relationships with industry
- Develop capacity within First Nations Ranger Groups
- Close-kin mark recapture (CKMR)
- Baseline population estimates (abundance)
- Population trajectory/trend
- Survival of bycaught sawfish
- Estimates of sustainable bycatch
- Improved management

Engagement with commercial fishers





Building capacity: First Nations Rangers

Timber Creek Rangers - NLC

Aak Puul Ngantam Cape York Rangers

APN Cape York
118 followers
29m • Edited •

APN Rangers are back on the Archer River with Dr Richard Pillans and his team from CSIRO monitoring the local sawfish population, but this time students from Koolkan Aurukun State School are joining them.

Can't see it can't be it. Next generation of land and sea managers in the making.

Progress to date

- 145 sampling kits provided to industry
- ~1360 tissue samples collected
- 50 miniPAT tags deployed (most by industry)
- ID and handling courses
- Improved reporting
- Improved handling and ID

- 32 Rangers trained to date (five groups)
- > $350,000 directly to Indigenous Ranger groups
- School presentations
- School incursion

Threatened Species Action Plan – Priority species:

Largetooth sawfish - *Pristis pristis*

Objectives

- Develop new tools ✓
- Establish baseline status and trend ✓
- Identify sustainable bycatch rates ✓
- Measure population trajectory ✓
- Work closely with First Nations people ✓
- Incorporate First Nations knowledge ✓

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Thank you

Contact: Richard.pillans@csiro.au
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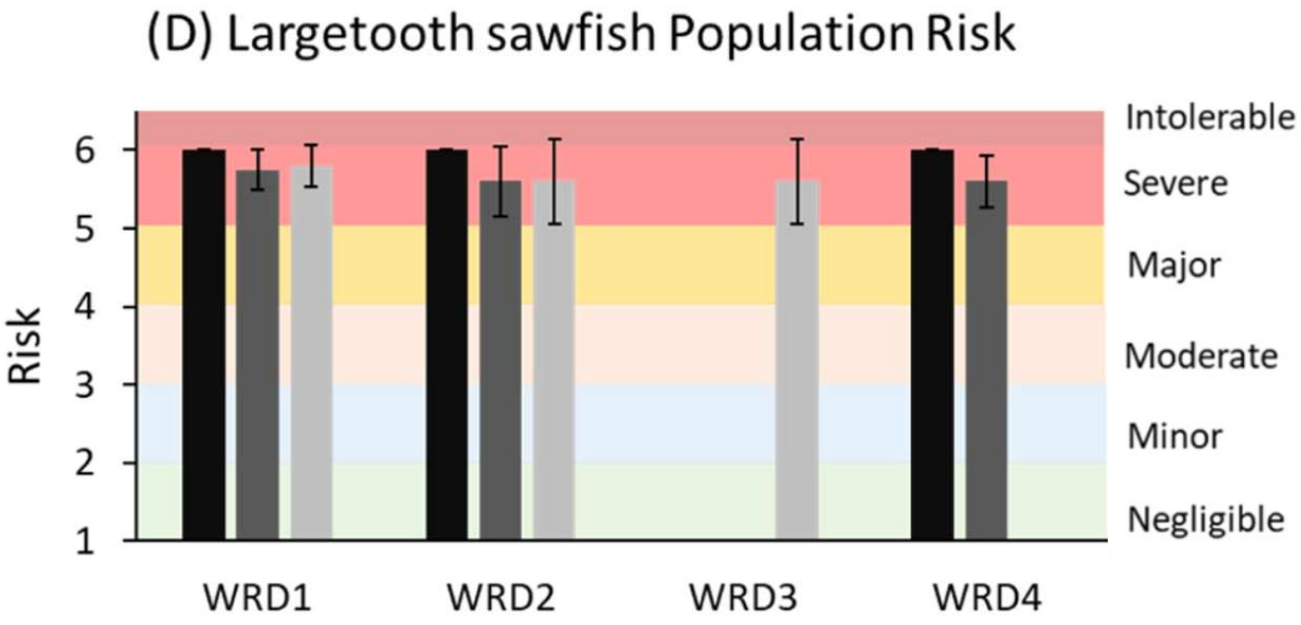
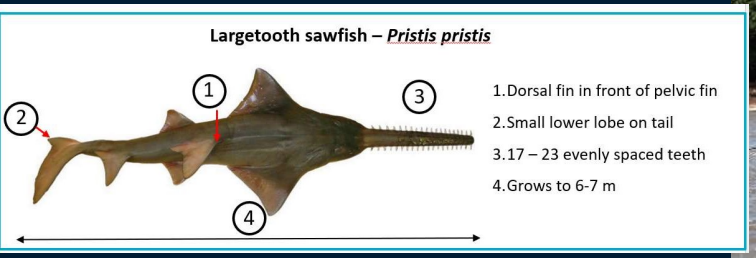
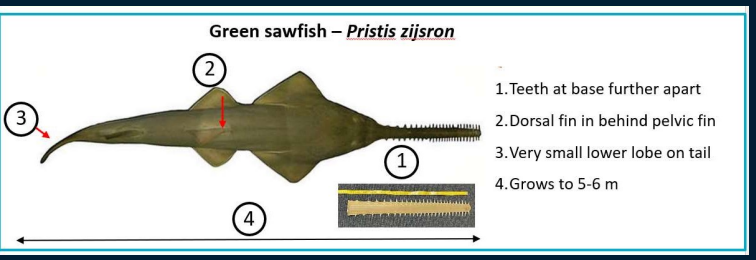
WRD impacts on sawfish in Gulf of Carpentaria

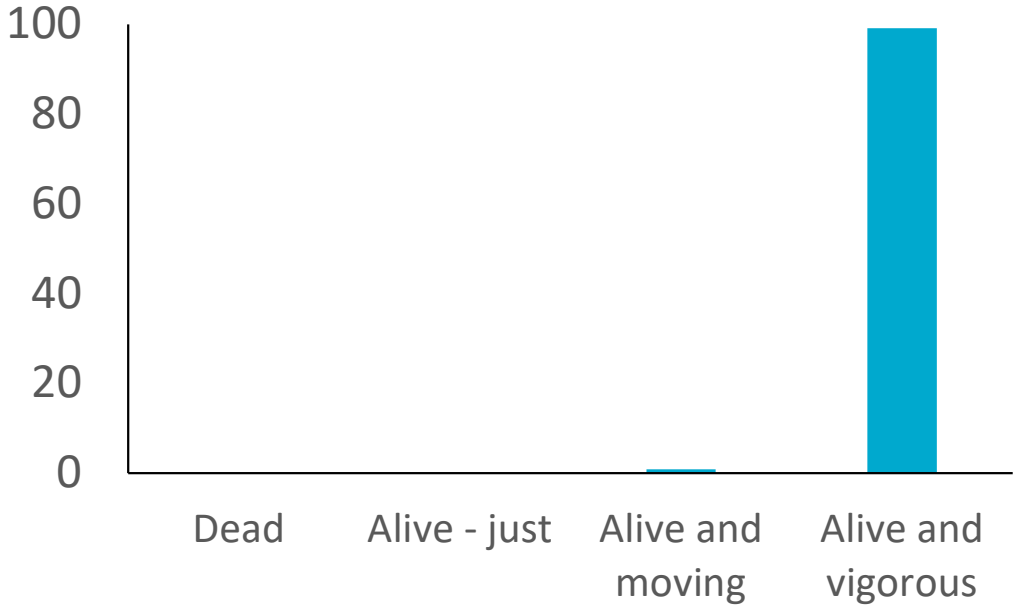


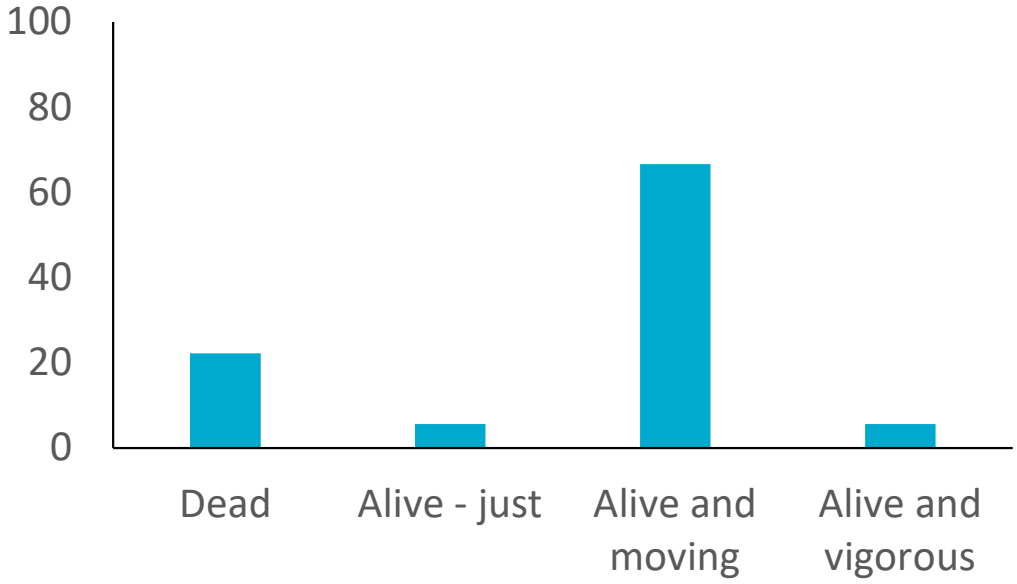
Plagányi et al 2023

At vessel survival





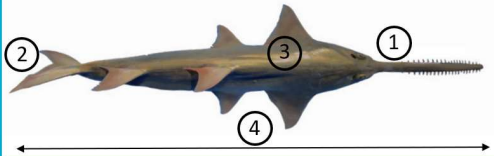




At vessel survival

Sawfish identification

Narrow sawfish – *Anoxpristis cuspidata*



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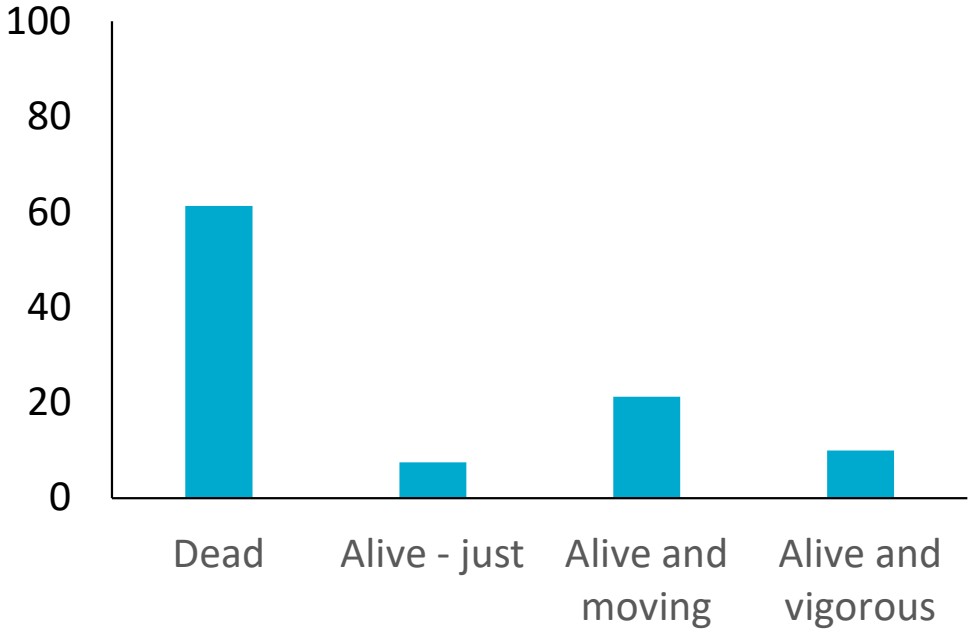
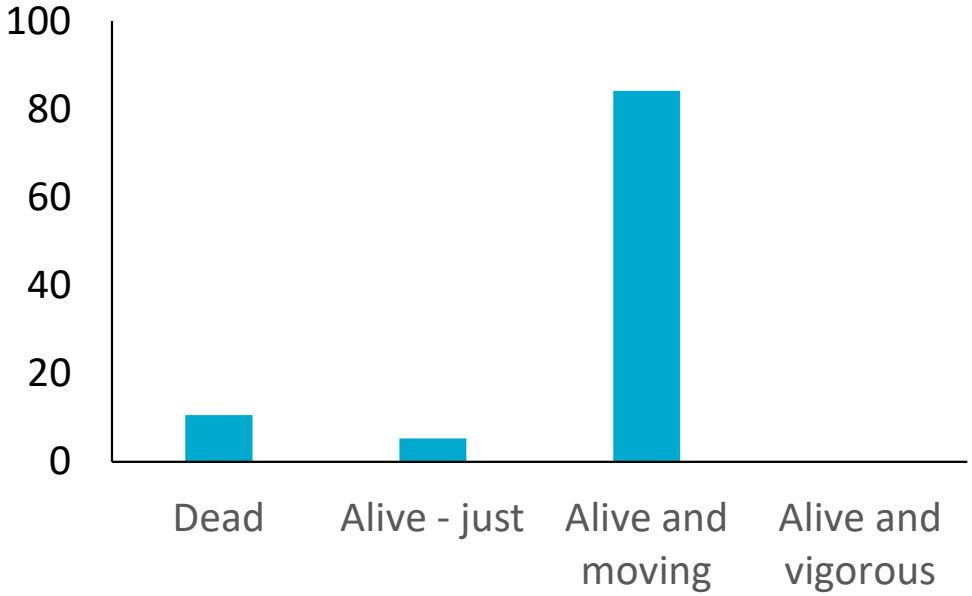
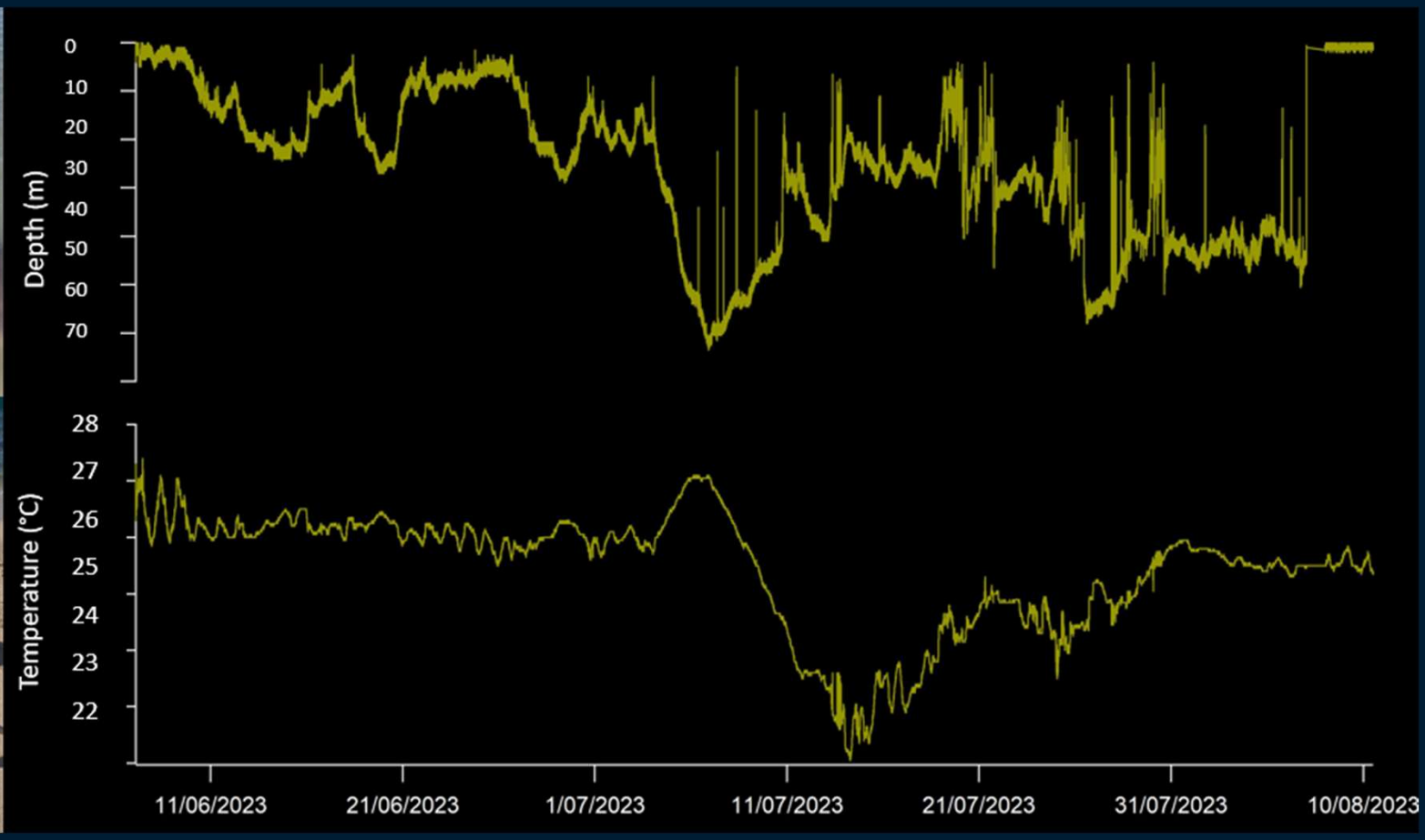




5.7 m freshwater sawfish tagged by commercial fisher

5.7 m freshwater sawfish tagged by commercial fisher

Data from recovered sawfish tag



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