Why did I, the TMAG invertebrate collection manager, end up on the 2022 voyage to the Gasgoyne Marine Park in northern Western Australia?





- Proclaimed in 2013 and management plan into force in 2018
- 20 kilometres off the coast and adjacent to Ningaloo Marine Park
- covers 81,766 square kilometres, with depths from 15 metres to 6000 metres.



Objectives

- describe the habitats and quantify fish and seabed biodiversity
- likely to discover new species of marine animals and ensure that conservation needs are more fully understood
- identify and assist managers to maintain the park's natural values into the future







The gear

- beam trawls
- towed video
- fish trawls
- fish traps
- Baited Remote Underwater Video

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First impressions



























How to start?

we want all the specimens which look the same to be together, separated from things which look different, hopefully photographed, labelled something consistent and preserved correctly





















Crunch time

- decide on what we are calling them
- label them
- allocate a barcode
- "dirty" photograph them
- count and weigh
- enter the data

Gascoyne MP 2021







• if new to us then ask for "fine"

• preservation







Towed camera and baited cameras

- camera towed over the lines of trawls first
- · live feed back to ship
- baited cameras left overnight









Octocorals

- Sea pens or soft corals or gorgonians
- Polyps each have eight tentacles
- Can be branching, encrusting, bunched, bulky, fine, brittle, soft, hard
- Found in all oceans, shallow to abyssal
- Important habitat for others in the deep sea





Photos by Cindy Bessey & Emily Gumina

Octocorals





Photos by Cindy Bessey & Emily Gumina

- Three different soft corals on one sponge spicule
 - Anthomastus-like (mushroom coral) red colony on top
 - White colony of Telestula
 - Purple Trachythela n.sp.



- Williams 1995 42 described species, only 9 Valid
- WoRMS has 12 species listed (none described since 1975, all but two described before 1900)





- Many species have no sclerites
- Morphological differences such as number and size of polyps, length of tentacles, cross-section shape of stalk etc
- Left with the 'vibe'
- Almost impossible to confidently assign an existing name

The beast



Flashy species



Photos by Cindy Bessey & Emily Gumina; Slide prepared by Dr Lisa Kirkendale

Show stopping squids (+ friends)





Glass Scallops









Photos by Cindy Bessey & Emily Gumina (& probably Corey); Slide prepared by Dr Lisa Kirkendale



Check the deck!

Photos by Cindy Bessey & Emily Gumina; slide prepared by Dr Lisa Kirkendale

Crustaceans

Photos by Cindy Bessey & Emily Gumina



 Same family as scampi and clawed lobsters





Crustaceans

King Crabs

- · Related to hermit crabs
- Few known species in WA
- · Common in BRUV footage



Flinders' King Crab

- Named in 2010
- Known from south-east corner

BRUV2 PORT:953



Crustaceans

Pylocheles - rock dwelling hermit



Echinoderms

- "spiny skin"
- pentamerous radial symmetry
- five classes











Photos by Cindy Bessey & Emily Gumina; Slide prepared by Dr Kate Naughton

Echinoderms

Eremopyga denudata

dBRUV1_PORT:190.7m

Slide prepared by Dr Kate Naughton



Photos by Cindy Bessey & Emily Gumina



Swimming sea-cucumbers

Slide prepared by Dr Kate Naughton

Swimming sea-cucumbers

Slide prepared by Dr Kate Naughton

DATE: 24/11/2022

P:2.1_R:1.4

Swimming sea-cucumbers





Photos by Cindy Bessey & Emily Gumina

Loaves and footballs



Slide prepared by Dr Kate Naughton

Pretty in Pinkish Hues - Sea Cucumbers and seastars



Pretty in Pink – Liomera rubra (A. Milne Edwards, 1865)







Photos and slide prepared by Dr Cindy Bessey

Pretty in Hints of Pink – Family Eunicidae (Berthold, 1827)



Eunicidae is a family of polychaete worms.

Some live in tubes which they form by their own secretions.

A new species of giant *Eunice* (at least 1m) from the east coast of Australia was recently described by Zanol and Hutchings (2022).



Pink Fish, New Fish ... Teeth Fish, Wee Fish!



Pink Fish, New Fish ... Teeth Fish, wee Fish!



Pink Fish, New Fish ... Teeth Fish, Wee Fish!



Slide prepared by Dr Cindy Bessey

Pink Fish, New Fish ... Teeth Fish, Wee Fish!

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Pink Fish, New Fish ... Teeth Fish, wee Fish!

Slide prepared by Dr Cindy Bessey

Sponges

- Class Hexactinellida deep sea glass sponges
- Family Cladorhizidae carnivorous deep sea sponges
- Class Demospongiae incredibly diverse and colorful in the shallows
- Clear shift in sponge representation at 100 m
- At the most diverse site ~20 species encountered
- Some were massive, and strong smelling!

Slide prepared by Dr Belinda Glasby

