

A tale of two whale sharks – detecting marine megafauna around O&G structures using acoustic telemetry

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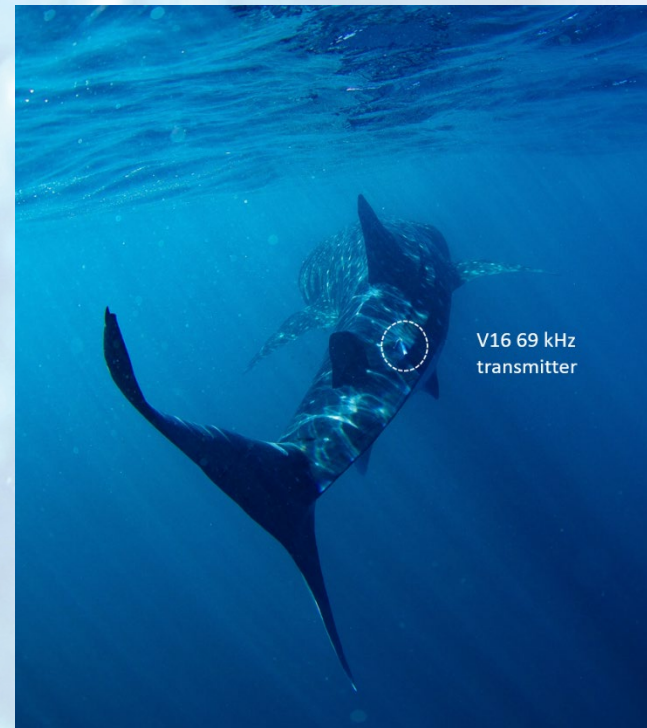
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Leave a structure in the water long enough and
it becomes an artificial reef that attracts fish
and megafauna

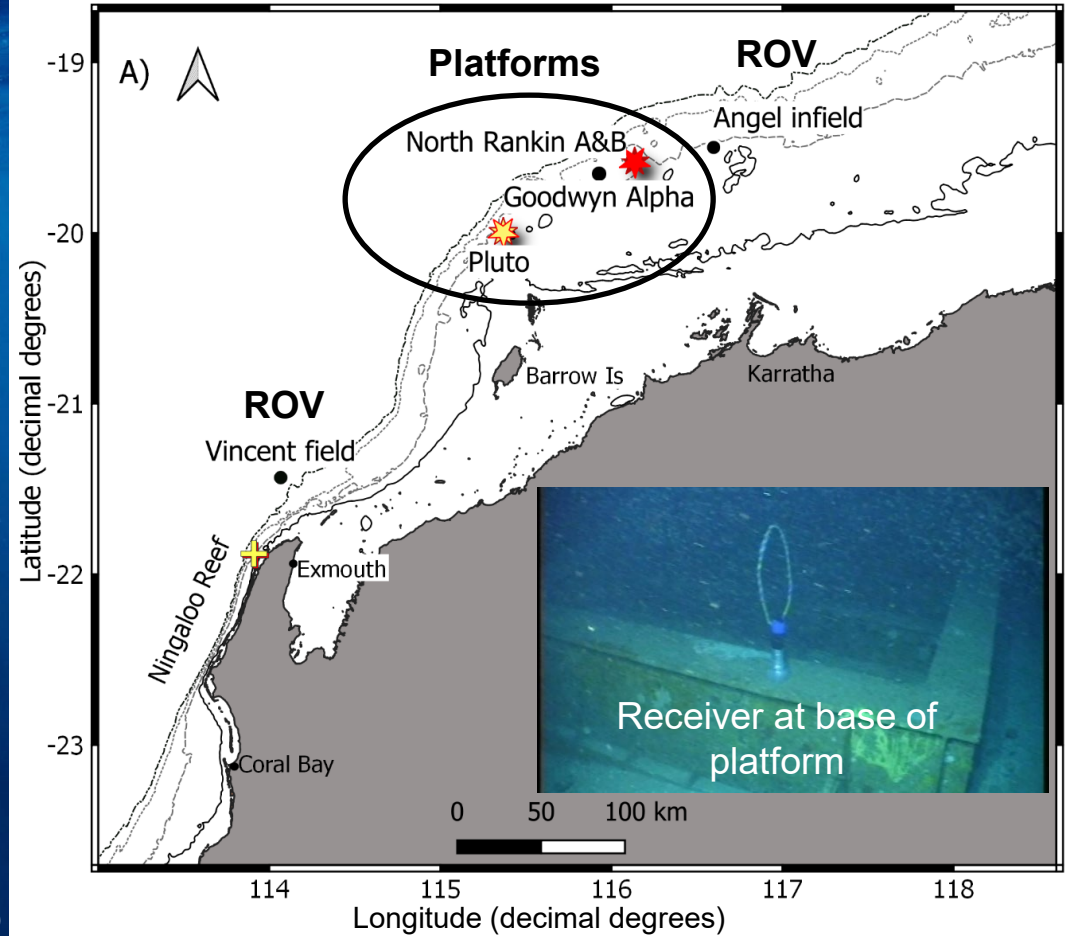
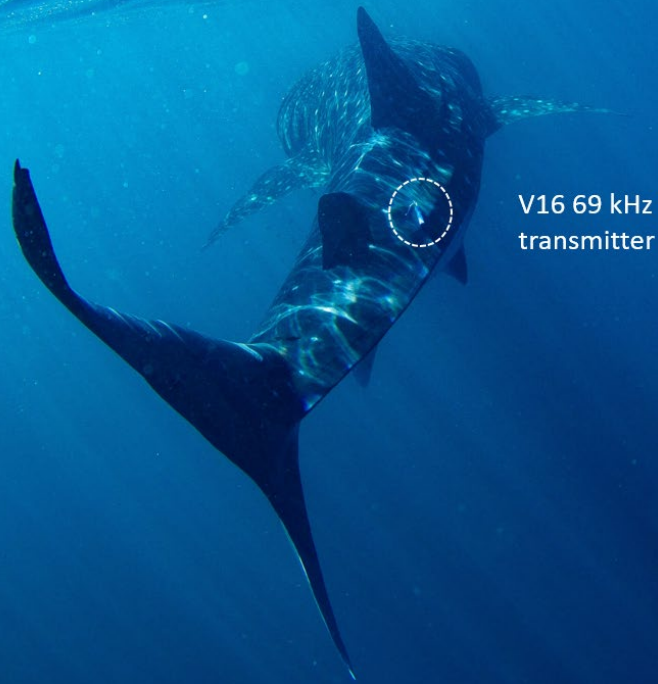
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What is acoustic telemetry?



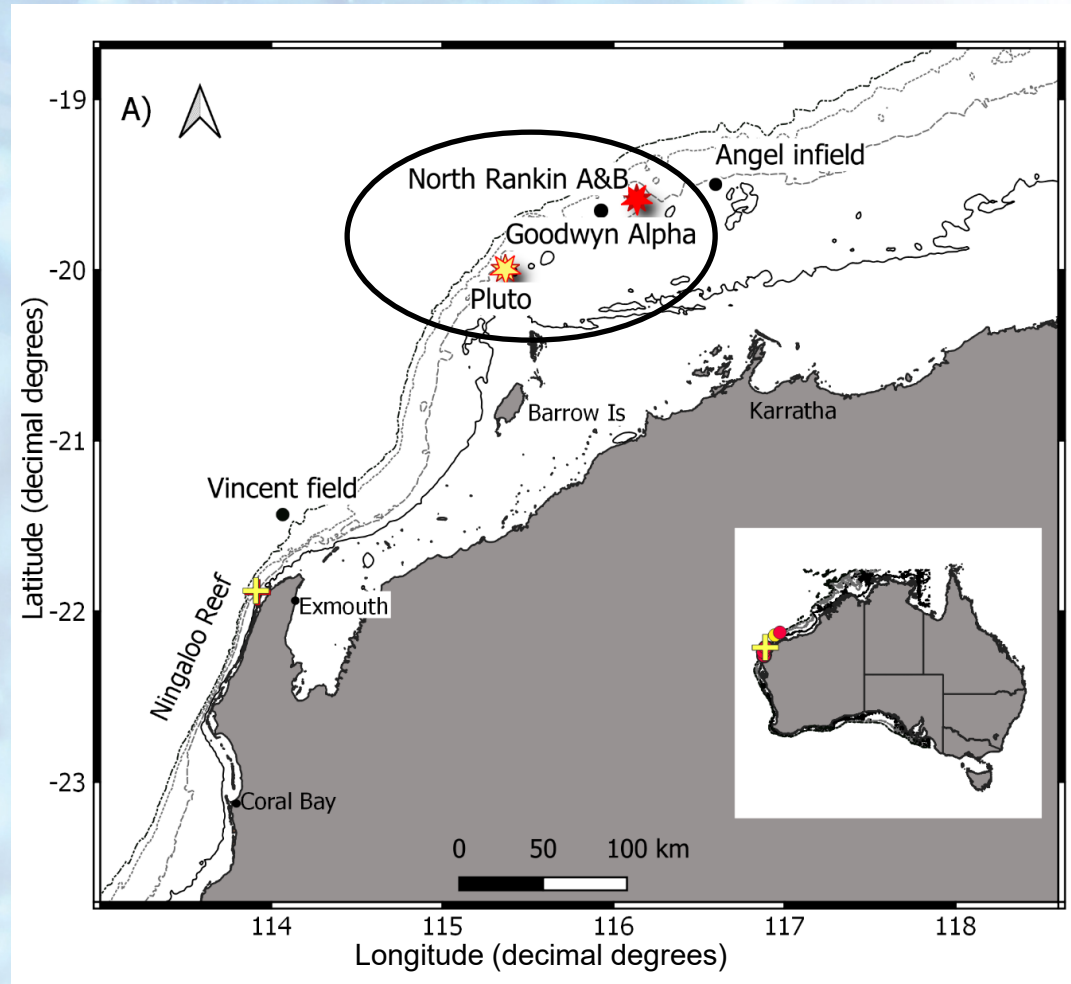
What did we do?

Tagged whale sharks at Ningaloo.



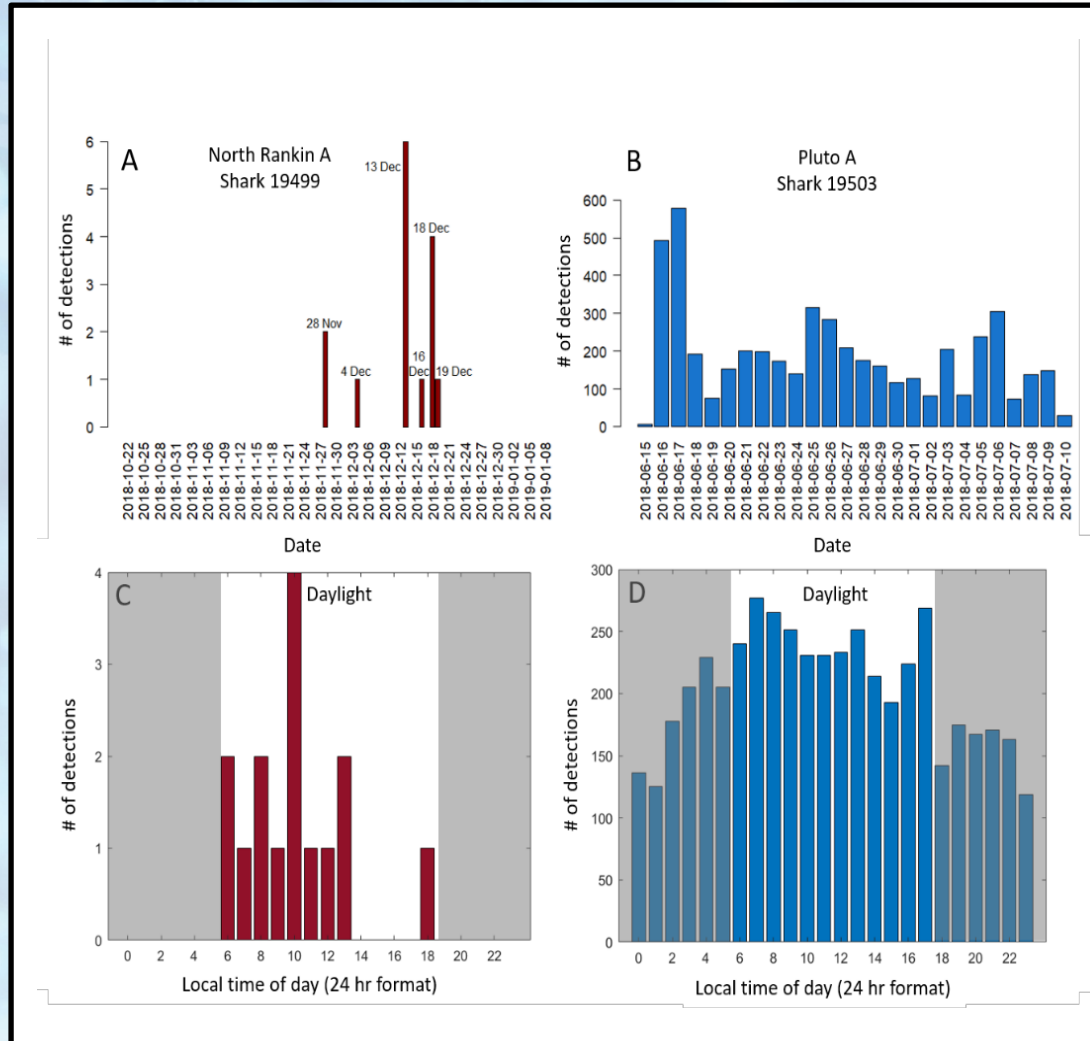
What did we find?

- No tagged animals were detected by receivers on ROVs
- 2 whale sharks detected at North Rankin A and Pluto!
- Last detected Ningaloo 1.5 and 2 yrs ago
- North Rankin A = 15 detections 90 days
 - 1 – 4 detections/day
 - Max gap between detect 5.25 days
 - Daylight only
- Pluto = 4894 detections 28 days
 - 130 – 580 detections/day
 - Max gap between detect 5 hrs
 - Day (2879) and night (2015)
 - Peak detections at dusk and dawn



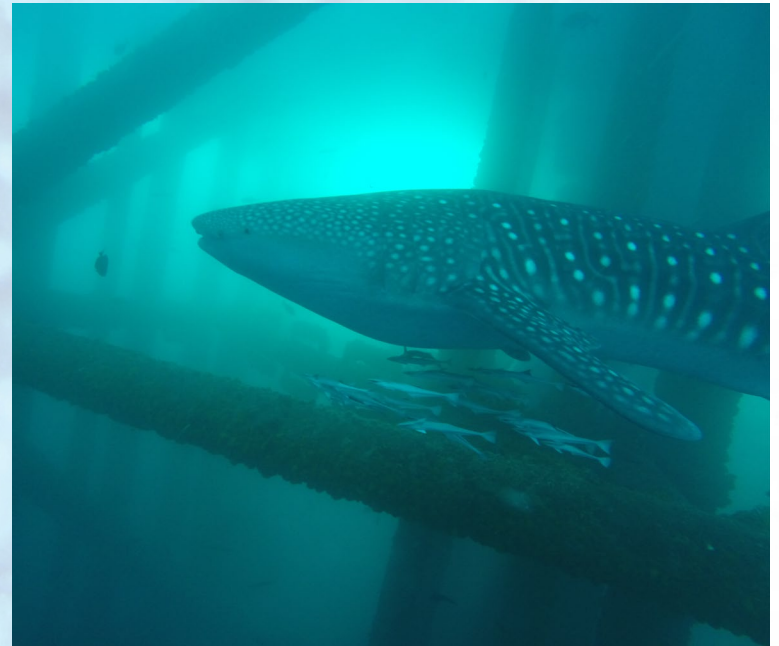
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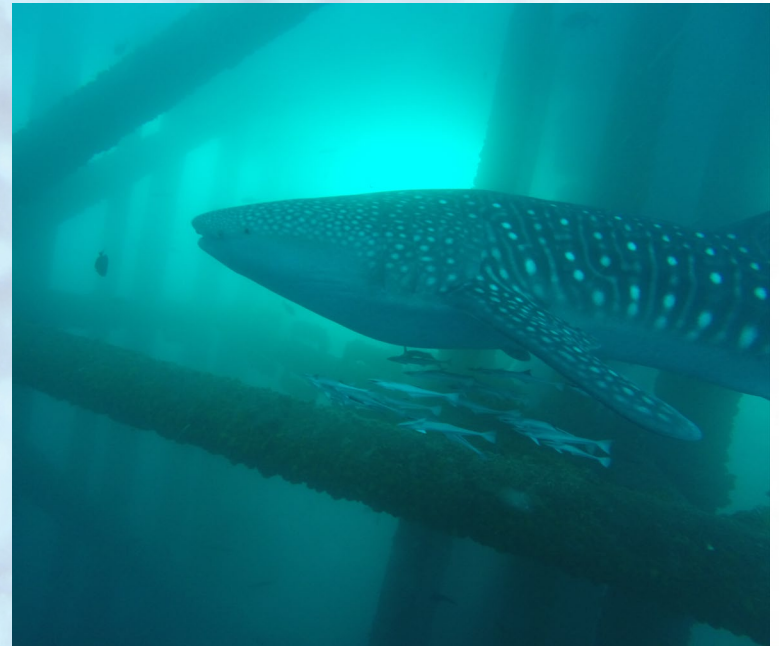
Conclusions?

- Acoustic telemetry around platforms works!
 - First data of its kind around O&G structures on the NWS
 - Potential to extend IMOS acoustic network along west coast of Australia
 - One of only 3 studies ever to demonstrate connectivity between natural habitats and O&G structures (Thums et al. (in review) Impact of O&G infrastructure on seascape connectivity).
 - Of our 2 whale sharks...
 - 1 shark appeared transient
 - While the other appeared resident and likely feeding at the platform
 - Clearly need more data is needed to understand the interactions



Future needs

- Our deployments opportunistic and relied on detecting tagged animals from other projects
- Great potential for success with a targeted study
- Longer term receiver deployments with tagging campaigns at Ningaloo
 - increase chance of detections and account for seasonality
- Finally, acoustic telemetry can be used around most structures such as FADs, artificial reefs, shipwrecks, and with industries including aquaculture and wind farms



Thanks to...

IMOS ATF for the receiver loan, Woodside (logistics), CSIRO (tagging and data to IMOS), OceanWorks at UWA (prototype grant)

