

U.S. Animal Telemetry Network (ATN)

IOOS AC Update

June 28, 2023

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45 Years of Animal Tracking by Argos

150,000+ animals tracked since 1978

<https://www.noaasis.noaa.gov/POLAR/ARGOS/apps.html>

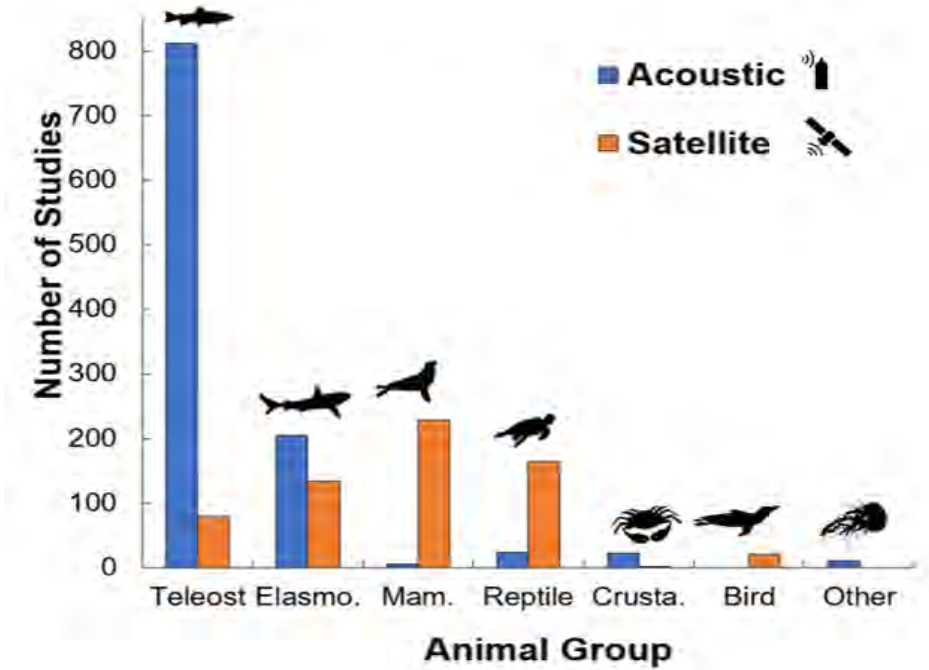
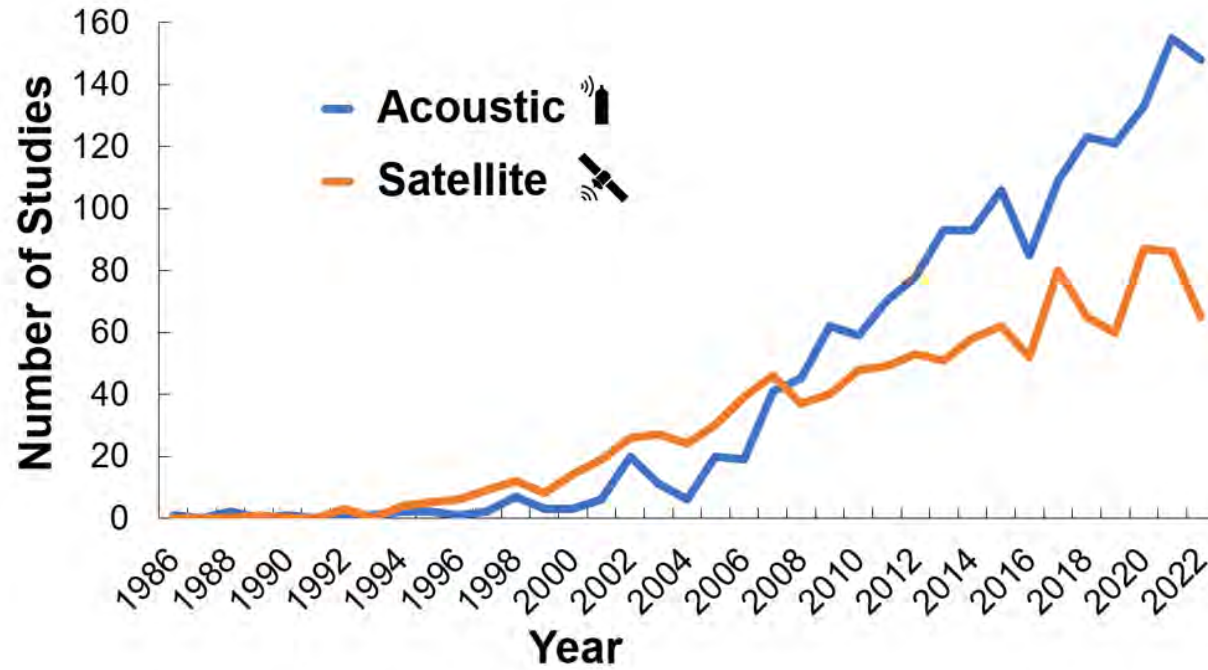


■ BIRDS

■ LAND
ANIMALS

■ MARINE
ANIMALS

■ FISH

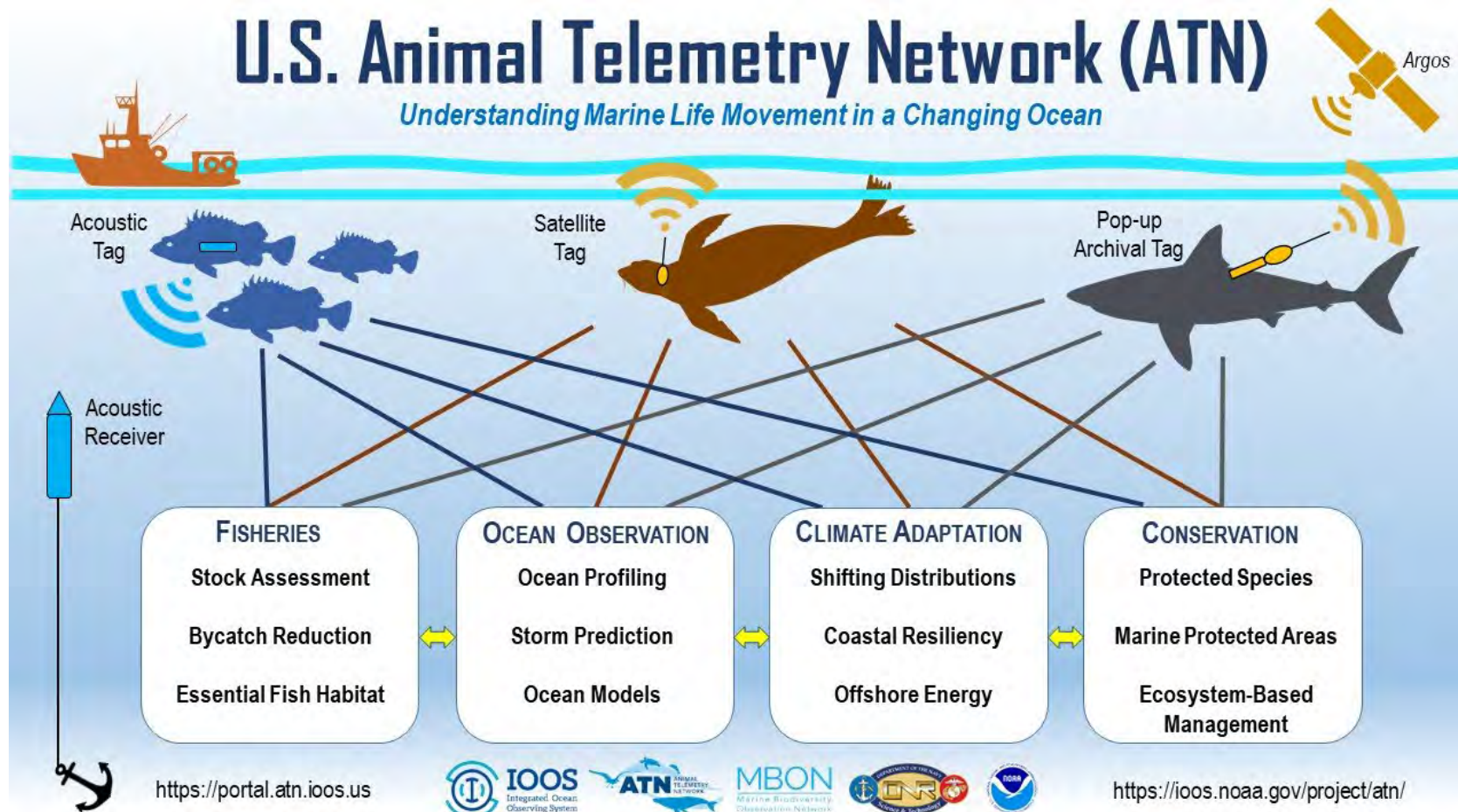


Kessel et al. (in prep), modified from Hussey et al. (2015) *Science*

- Telemetry is a tool, but an extremely powerful and adaptable tool for marine life observation
- The use of telemetry is expanding rapidly worldwide
- *The need for data management, products, and delivery is growing commensurately*



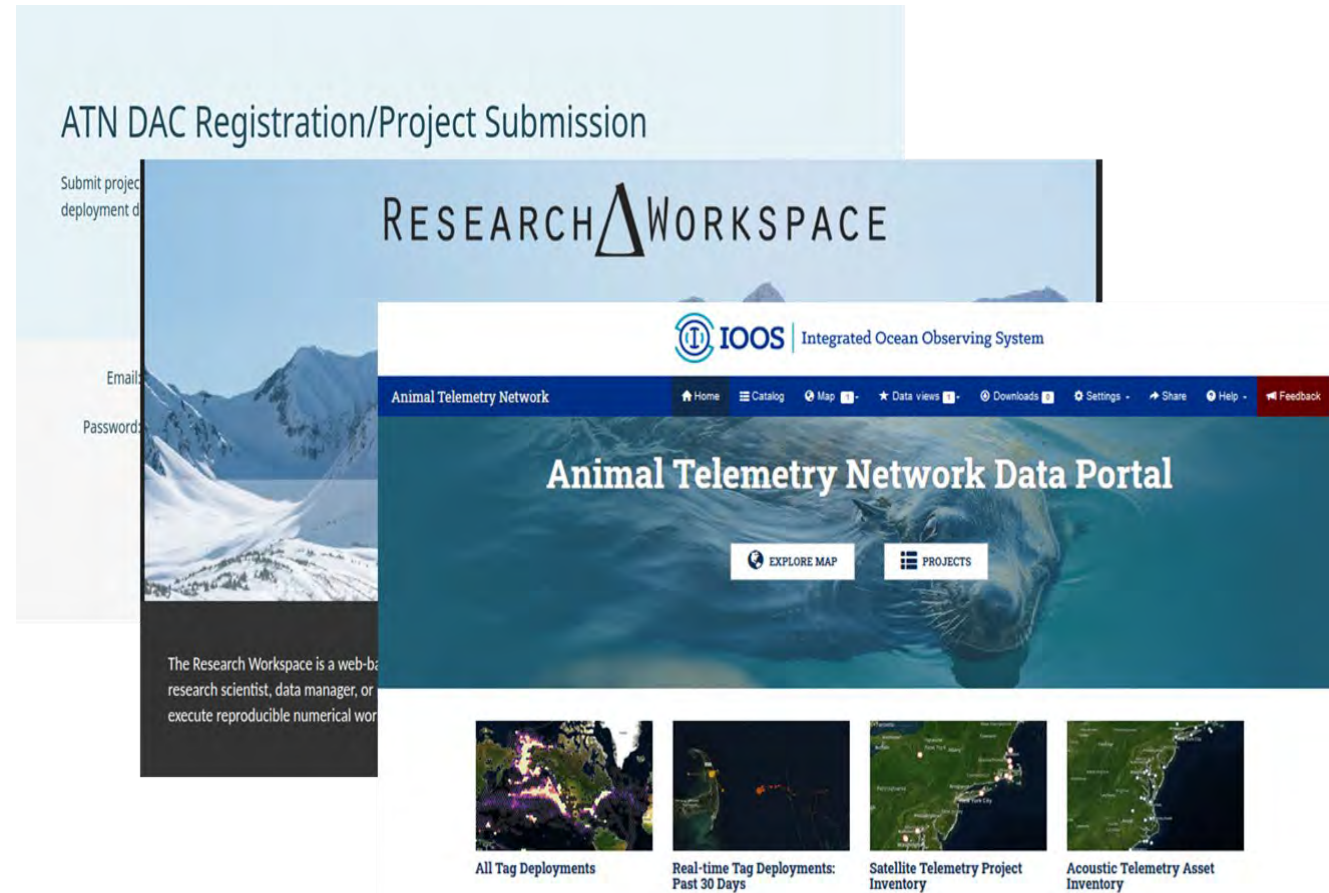
- ATN was established with these needs in mind
- Serving the missions of multiple agencies and the broader scientific community



Provide Unity, Stability and
Continuity to the U.S. Marine Animal
Telemetry Network and Promote its
Integration into the Nation's Ocean
Observing System Capabilities

ATN Data Assembly Center (DAC)

- Community resource
- Receives data from multiple sources/tag types
- Enables/promotes data availability and sharing among community partners
- Maximizes access to telemetry data
- Enhances and expands electronic tag data products
- Enables permanent archiving at NCEI, DataONE; DOI minting

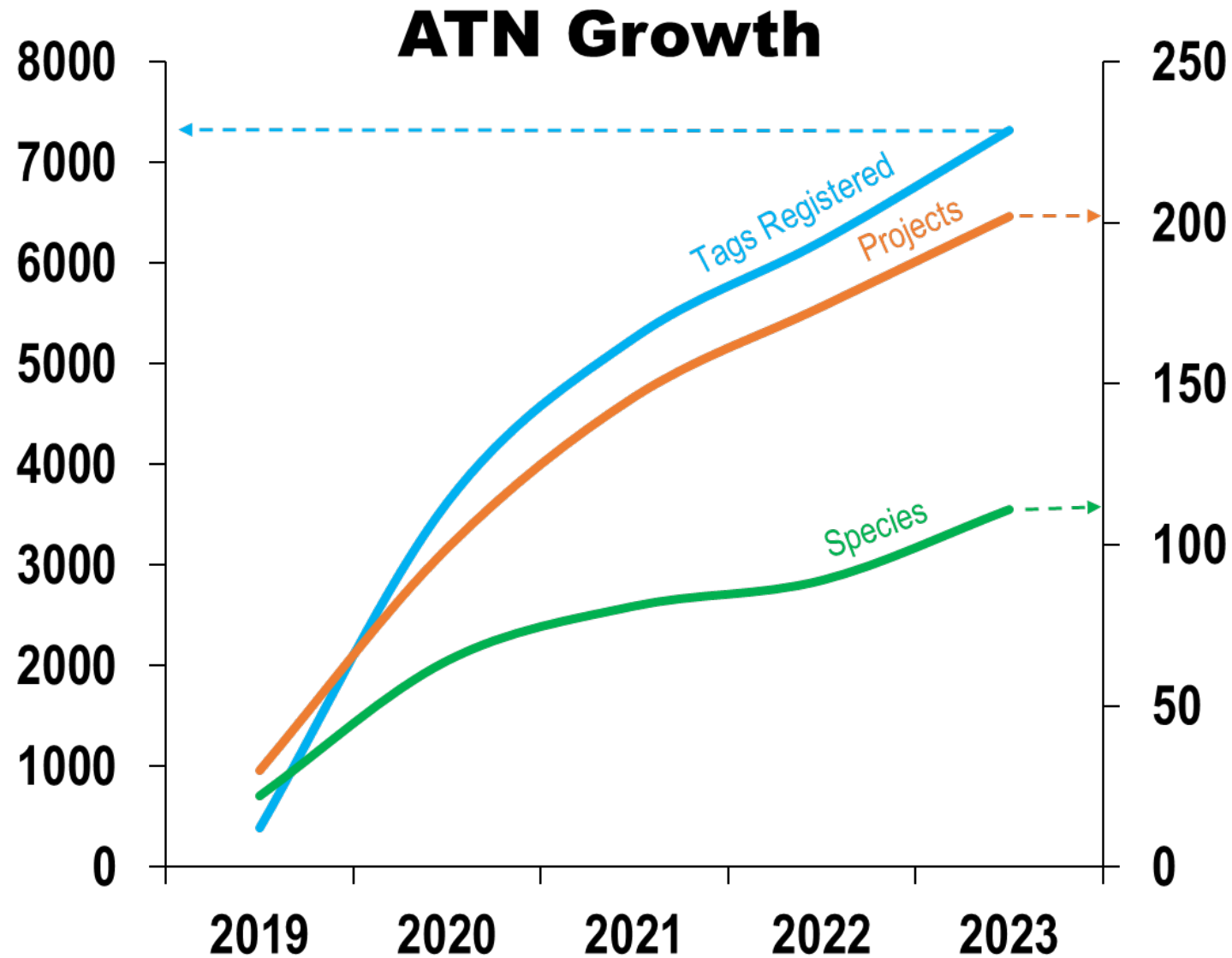


ATN Registration App –
<https://dacregistration.atn.ioos.us>

Research Workspace –
<https://researchworkspace.com>

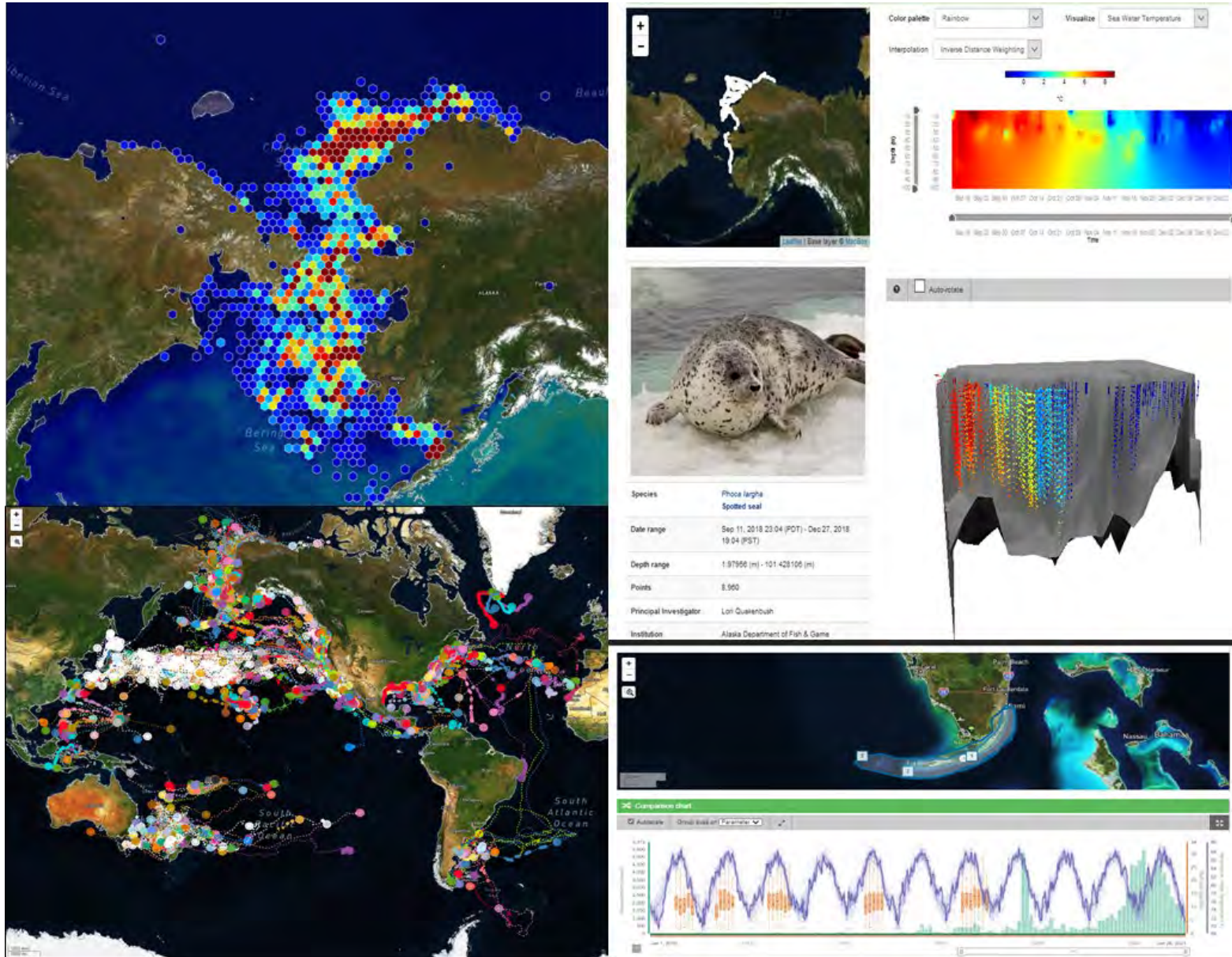
ATN Data Portal –
<https://portal.atn.ioos.us>

ATN Data Assembly Center (DAC)



- Primarily satellite telemetry, from Argos platforms
- Projects = 202
- PIs = 94 (183 researchers including collaborators)
- Organizations = 70 (109 including collaborators)
- Species = 111
- Deployments = 7325
- Over 13 million tag locations

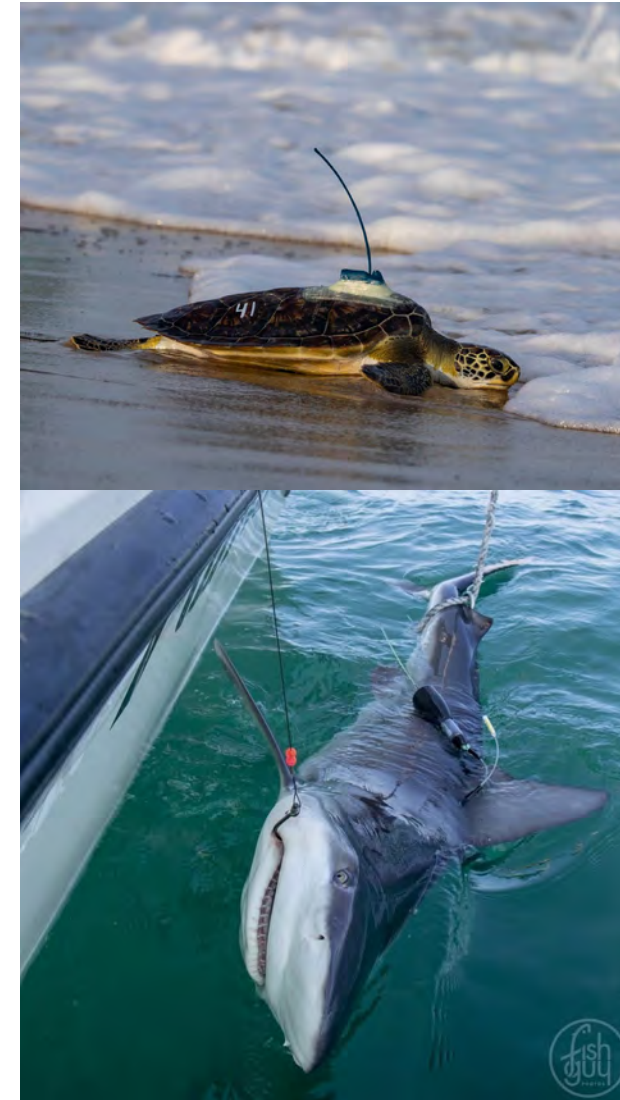
ATN Data Assembly Center (DAC)



- The DAC is growing, but remains under-resourced
- Work In Progress
 - Archive pathways
 - Improved visualization
 - Auto-ingest pipelines from multiple tag manufacturers
 - Acoustic telemetry support
 - Multi-sensor biologging support
 - Analytical tools

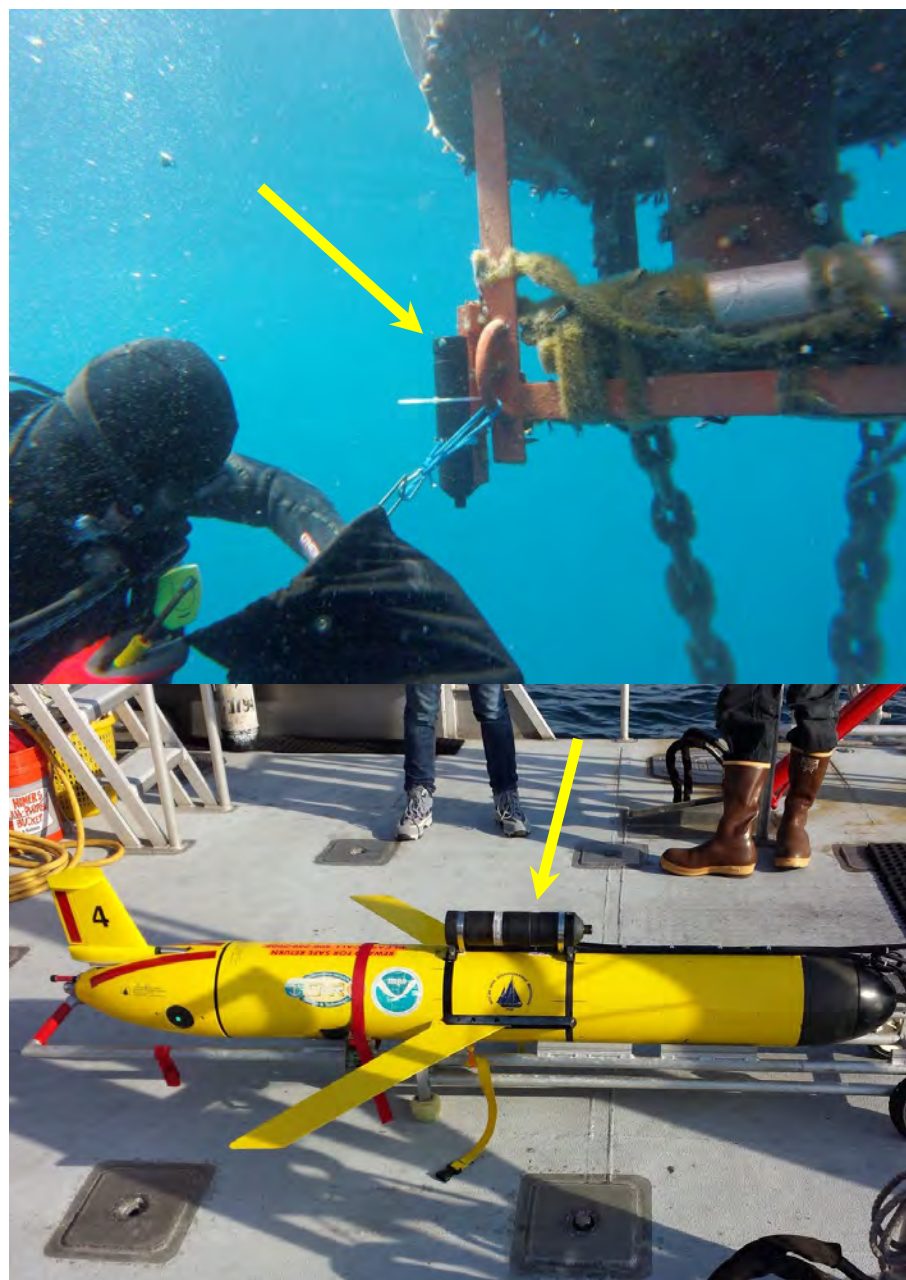
Near Term Goals and Priorities

- Support regional acoustic nodes and fill regional gaps with OTN/ATN-compatible nodes
- Leverage existing infrastructure (buoys, gliders, etc.) for acoustic monitoring



Regionally Coordinated (Inter)Nationally Interoperable

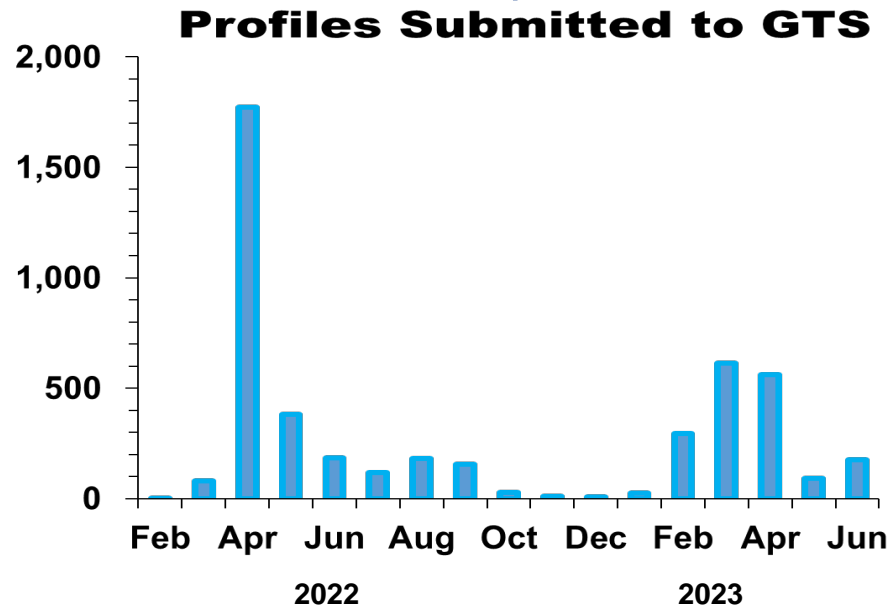
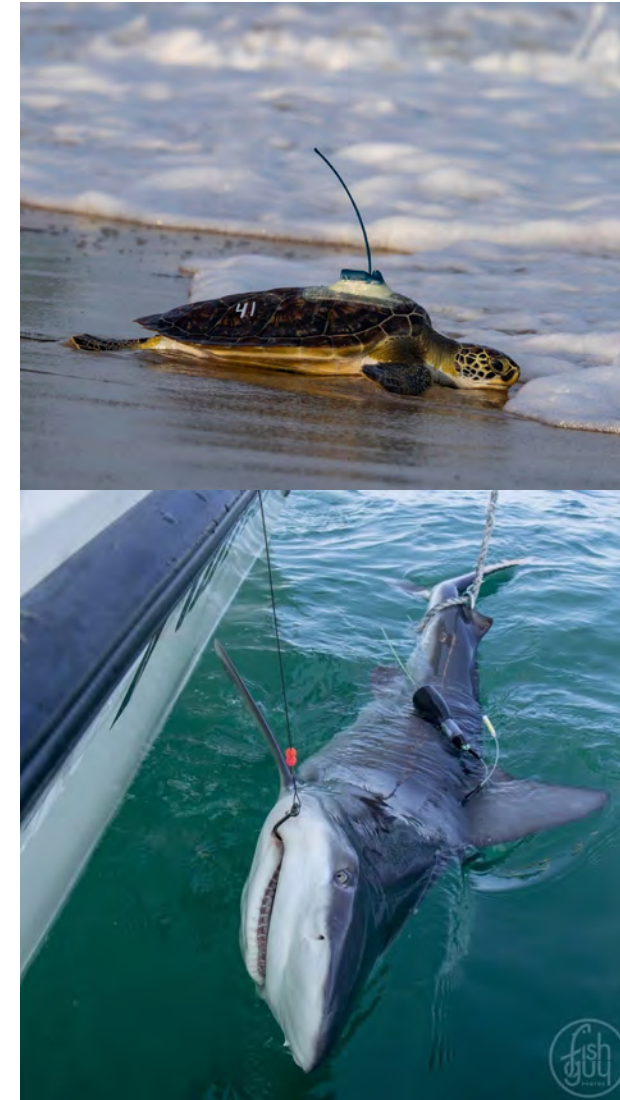


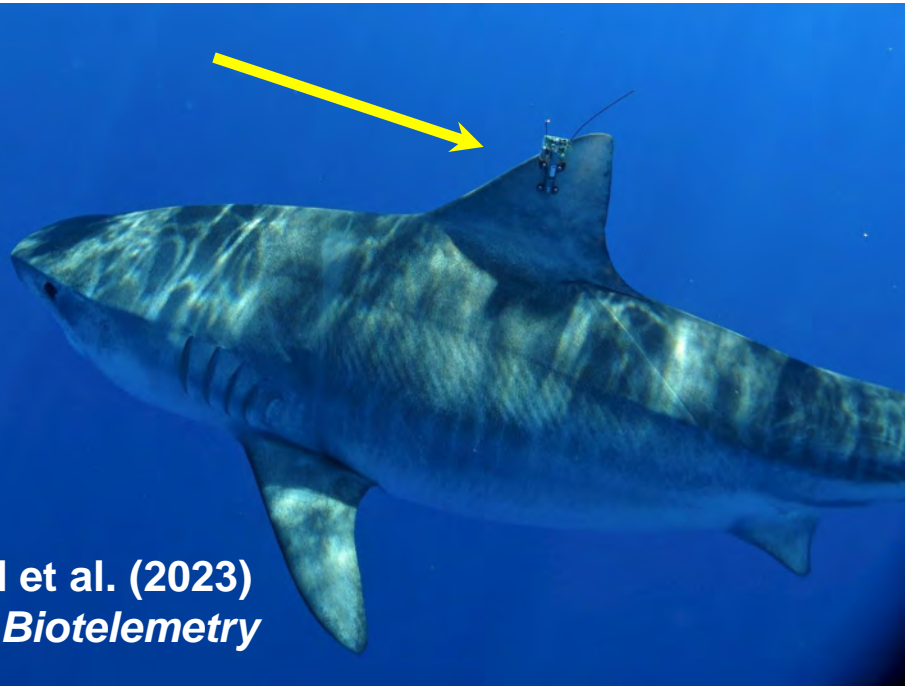


- Small investments in marine life monitoring equipment (acoustic receivers, etc.) attached to existing assets could be transformative for the IOOS Marine Life Program
- This is already in practice in some RAs
- The ATN DAC and Marine Life Data Network can manage, archive, and deliver these data

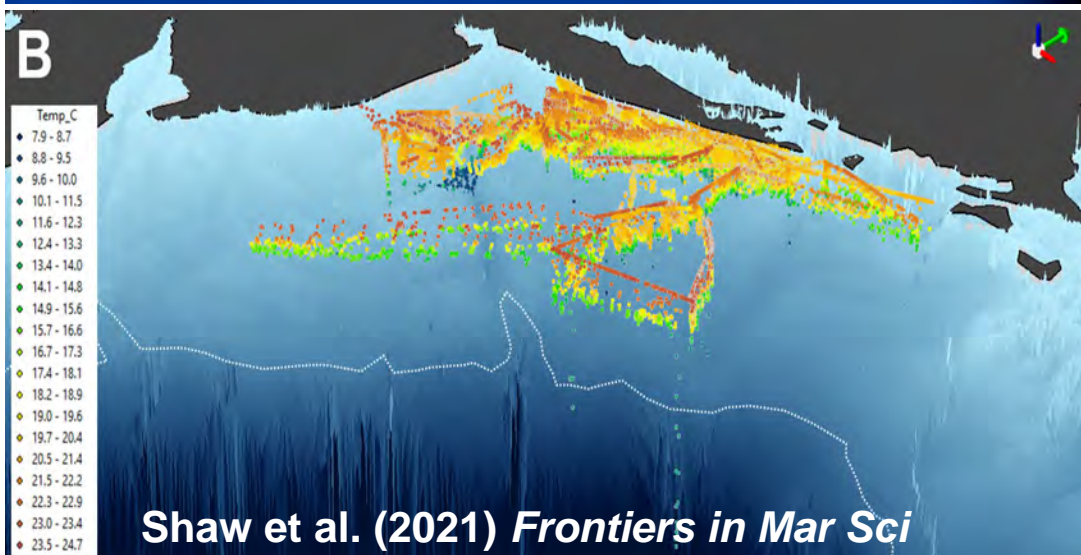
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- Support regional acoustic nodes and fill regional gaps with OTN/ATN-compatible nodes
- Leverage existing infrastructure (buoys, gliders, etc.) for acoustic monitoring
- Advocate for expanded animal-borne ocean profiling



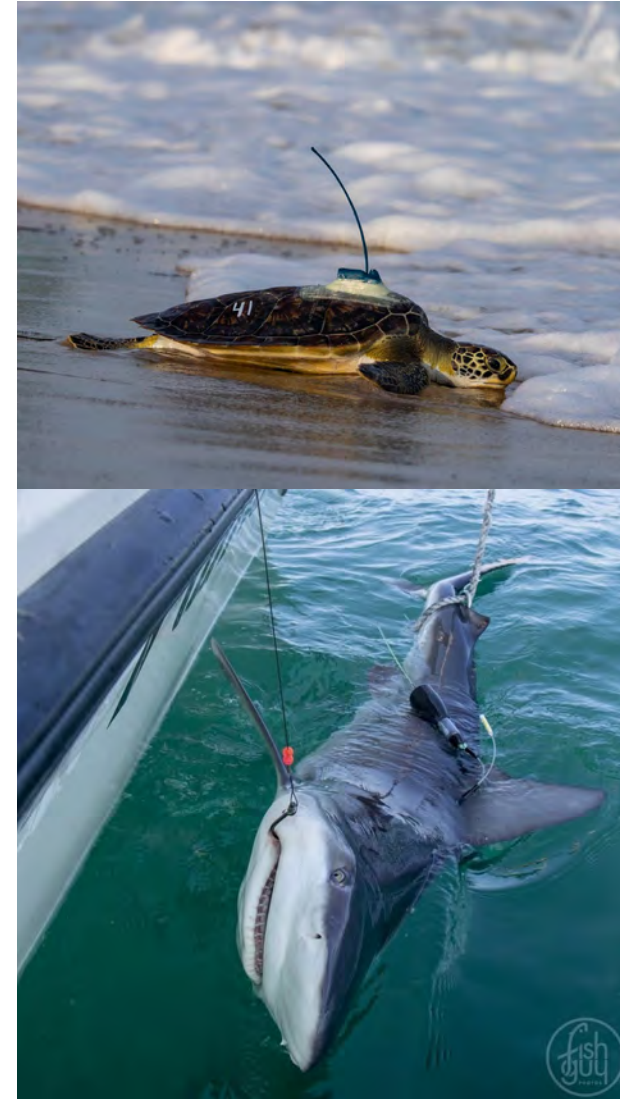


- Leveraging Marine Life to enhance ocean observation
- One animal can provide hundreds of ocean profiles (CTD or TD) in under-sampled regions (Cost ~\$6,000)
- ATN already pipelines animal-borne profile data to the GTS and it's being used in ocean models and storm predictions
- Consider animal-borne platforms as part of regional ocean heat content portfolios



Near Term Goals and Priorities

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- Leverage existing infrastructure (buoys, gliders, etc.) for acoustic monitoring
- Advocate for expanded animal-borne ocean profiling
- Keep ATN in the discussion regarding new opportunities to address climate resilience, New Blue Economy, offshore wind, marine life observation, data delivery
- Secure long-term investment and support



THANK YOU!

For More Information on ATN:

- <https://ioos.noaa.gov/project/atn/>
- Email ATN.NC@noaa.gov and mmckinzie@mbari.org

