

OTN and US acoustic telemetry nodes

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New for the OTN Data Center





Emerging Nodes in the US region

Publication to OBIS and Data Sharing Initiatives



OCEAN TRACKING NETWORK

How It Started

Support research via direct funding of scientific exploration, build new expertise and infrastructure



- Born in 2008 under a 168m joint Science and Infrastructure investment from NSERC / CFI
- Canadian and International components
 - led to development of capacity across
 Canada
 - but also in Europe, Africa, South America, and Australia
- One centralized data system for all arenas and communities the OTN data warehouse
- By 2018: ~300m detections in a single, global database



How It's Going

Enable research with established expertise + continued infrastructure investment and support



Canada Foundation for Innovation's (CFI)
 Major Science Initiatives (MSI) Fund

First cycle of 6 years

- Renewed in 2022 for another 6 year cycle (2023-2029) <u>Not research funding</u>
- Expectation is renewal while we are relevant
 - and meeting our mandates
- Many intercompatible databases growing in tandem, with over 1.4b detections between all compatible data nodes



OTNDC new developments

Updates to org chart:





Three main components of acoustic telemetry data



Detection data: protected but not very informative without associated tagging activity data to add the 'what' to the 'where' and 'when'.

Tagging activity: The history of which tags are in which animals, where those animals were released, how long the tag will live, and all auxiliary measurements and observations made at tagging time by the researchers. Very sensitive, embargoed for tag life + 2 years (for data at OTN).

Receiver deployments: generally uncontroversial and publishable data. Useful for informing potential collaborators of existing equipment deployed in their intended study areas that could detect their tags.



OTN Nodes and Data Partners









Tobler's first law of geography:

"Everything is related to everything else. But near things are more related than distant things." Data collation and management within regions is the proper-scaled approach to organic collaboration and coordination of effort Nodes allow regional organizations to cross-reference data and metadata with OTN and provide more data to their end-users

Report-once, track-everywhere from the PI perspective simplifies reporting of metadata and data and keeps a project's data authoritatively in one place





Nodes Hosted by OTN















Nodes Hosted by others



Nodes and Networks

In order to form a more perfect union?

- Direct inter-compatibility
- Detections matched between nodes
- Same QA/QC process and data output formats
- Develop new features
 alongside OTNDC
- Periodic training session and ongoing support for node managers





Publication to OBIS

- First non-OTN dataset published 2023
- Tracking and deployment • URL datasets represented in Event Core
- ETN co-designed format Published • First regis recommends Occurrence Abstract Core w/ decimation, Event Core for tag + receiver effort, or where other (abiotic) data was collected
- Filtering via Pincock
 - Future: PI-informed 0 detection filtering Citation
 - Future: full-auto 0 publication



Reposito

Node

Rights

> Zero coordingtes

HOME ABOUT -DATA -MANUAL RESOURCES -ACTIVITIES * CONTACT

MANGA - (Tag) Habitat use of oceanic manta rays

Occurrence records	76	
> Species level	76	
Absence records	0	
Event records	0	
MoF records	0	
Sequence records	0	
Species	1	
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MBON / A-BioTrack

Shared format to easily aggregate acoustic telemetry data

- Data sharing from 50+ projects across three nodes, plus iTAG, aggregating and producing species distribution models using OBIS data and telemetry together.
- Highlight of the project was the high intercompatibility of the datasets

Acoustic telemetry nodes

 Matching detections (tags & receivers)





From a presentation by T. Couto, June 2023



Data Publication Tools

DaViT - Visualizes acoustically-detected animal movement data on a per-species and per-project level. Soon adding a suite of QC checks to filter incoming data before creating the published polygons

PATH Data publication R Shiny App -

An application to share public detections from the participating PATH partners who opt-in has been redesigned and connected to the OTN Node at UC Davis. OTN staff are consulting on data summarization, managing permissions and optimizing the interaction between app and database.

https://github.com/PATHucd/PATH_shinyapp

Data Visualization Tool (DaViT)

Choose species and timeframe to see the distribution and range of acoustically tagged animals!





US Animal Telemetry Network and AniBOS







CEAN TRACKING NETWORK



Intergovernmental Oceanographic Commission of UNESCO International Oceanographic Data and Information Exchange



OCEAN BIODIVERSITY INFORMATION SYSTEM

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for Innovation pour l'innovation





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