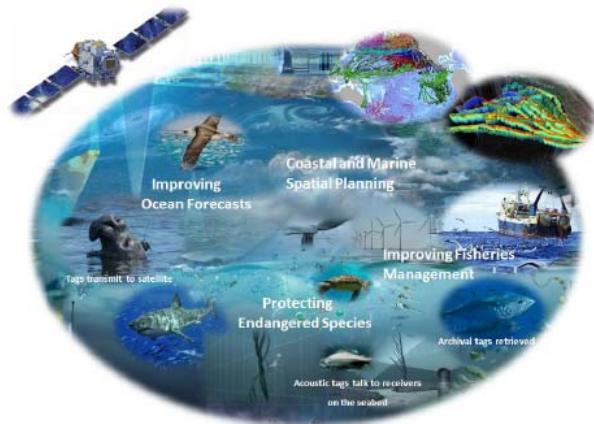


ATN the Animal Telemetry Observing Network US Effort To Unify Animal Telemetry Assets



Toward a National Animal Telemetry Observing Network (ATN) for our Oceans, Coasts and Great Lakes: Workshop Synthesis Report



July 2011



NOAA Technical Memorandum NMFS

This TM series is used for documentation and timely communication of preliminary results, interim reports, or special purpose information. The TMs have not received complete formal review, editorial control, or detailed editing.

JULY 2011

TOWARD A NATIONAL ANIMAL TELEMETRY OBSERVING NETWORK (ATN) FOR OUR OCEANS, COASTS AND GREAT LAKES: WORKSHOP SYNTHESIS REPORT

Hassan Moustahfid (Lead Author)¹, Churchill Grimes², John Kocik³, Barbara Block⁴, Kim Holland⁵, John Payne⁶, Dewayne Fox⁷, Andrew Seitz⁸, and Charles Alexander¹

TOWARD A US ANIMAL TELEMETRY OBSERVING NETWORK (US ATN) FOR OUR OCEANS, COASTS AND GREAT LAKES

B. A. Block¹, K. Holland², D. Costa,³ J. Kocik⁴, D. Fox⁵, B. Mate⁶, C. Grimes⁷, H. Moustahfid⁸, A. Seitz,⁹ M. Behzad¹⁰, C. Holbrook¹¹, S. Lindley⁷, C. Alexander⁹, S. Simmons¹², J. Payne¹³, M. Weise¹⁴ and R. Kochavar¹

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³Long Marine Lab, University of California, Santa Cruz, CA, USA, email: costa@ucsc.edu

⁴NOAA Fisheries NEFSC Maine Field Station, Orono, ME, email: john.kocik@noaa.gov

⁵CARS, Delaware State University, Dover, DE, USA, email: dfox@desu.edu

⁶Hatfield Marine Science Center, Oregon State University, Newport, OR, USA, email: bruce.mate@oregonstate.edu

⁷NOAA, SWFSC, 110 Shaffer Road, Santa Cruz, CA, USA, email: Churchill.Grimes@noaa.gov

⁸NOAA IOOS, 1100 Wayne Ave, Silver Spring, MD, USA,

email: hassan.moustahfid@noaa.gov, email: Charles.Alexander@noaa.gov

⁹School of fisheries and Ocean Sciences, University of Alaska, Fairbanks, AK, email: acseitz@alaska.edu

¹⁰Fish and Wild life Research Institute, Saint Petersburg, FL, USA, email: Behzad.Mahmoudi@myfwc.com

¹¹USGS Great Lakes Science Center, Hammond Bay Biol. Station, Millersburg, MI, USA, email: cholbrook@usgs.gov

¹²Marine Mammal Commission, Bethesda, MD, USA, email: SSimmons@mmc.gov

¹³Pacific Ocean Shelf Tracking Project, Vancouver, B.C., Canada, email: jcpayne@uvic.edu

¹⁴Office of Naval Research, Arlington, VA, USA, email: michael.j.weise@navy.mil

Abstract

Aquatic animal tracking is the science of elucidating the behavior of animals as they move through the world's oceans and lakes. Tracking devices ("tags")

1. BACKGROUND

The development of the Integrated Ocean Observing System (IOOS) initially focused on the acquisition and integration of physical and

Biologging Data Is Vital For Ecosystem Management & Protection: Major Need for Surveillance Technology



Societal Benefits of Animal Telemetry Data are Large but Not Being Realized to Date Globally

- Animal Borne Sensors (*In Situ* Oceanography)
- Monitoring Ecosystems, & MPA Health
- Advance Fisheries Management Models & Assessments
- Protected Species Monitoring
- Animals as Sentinels of Climate Change
- Education and Outreach



Ocean Observation & Monitoring with Biologging Tags

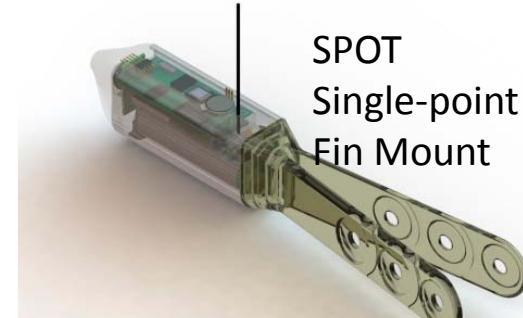
Most Tag data is not available so this limits its effective use in ocean observation



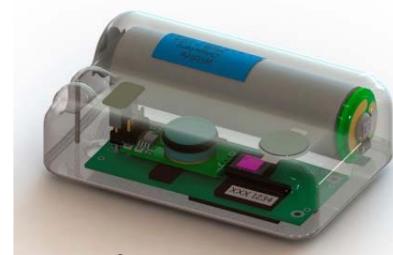
MiniPAT
Pop-up



Acoustic
Tags



SPOT
Single-point
Fin Mount



Accelerometer



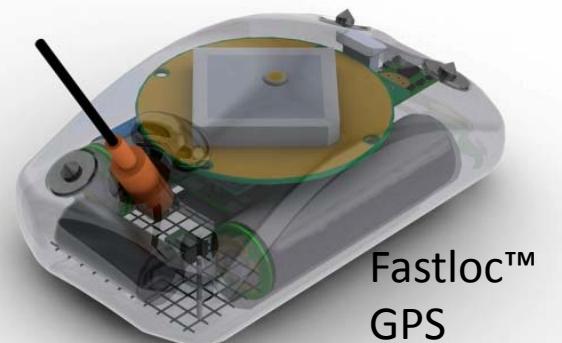
Satellite Relay Data Logger (SRDL)



Archival
Tag



Fin
Mount



Fastloc™
GPS

How Can We (US ATN) Create an Ocean Observatory Network of data from Biologging Tags, Acoustic Tag Data, Receivers, Buoys, Gliders & AUVs?





Quick Info 1

Animal Telemetry Network

Quick Info 2

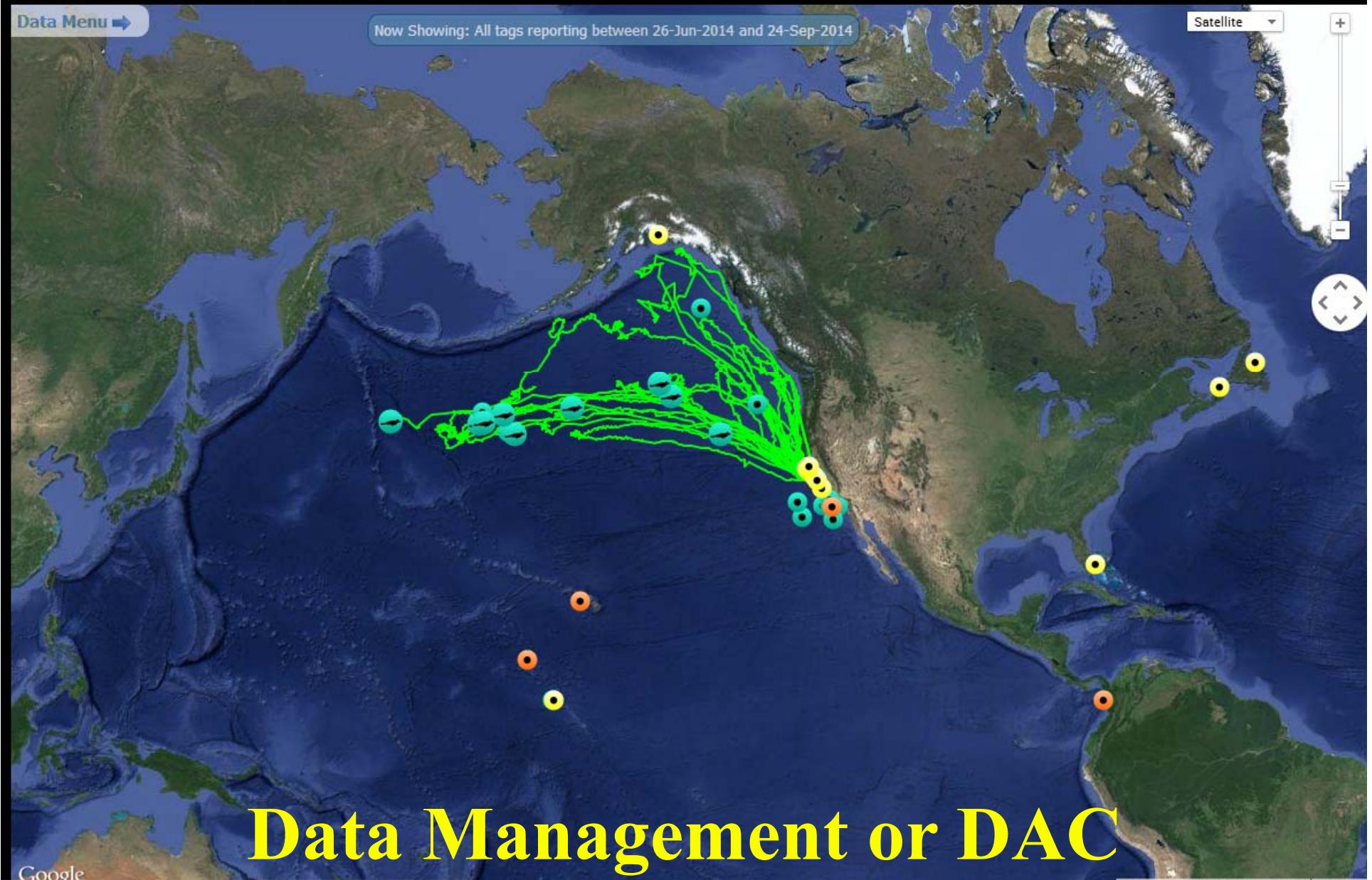
Comments/Questions?

About | Partners | Documents | Contact |

Data Menu ➔

Now Showing: All tags reporting between 26-Jun-2014 and 24-Sep-2014

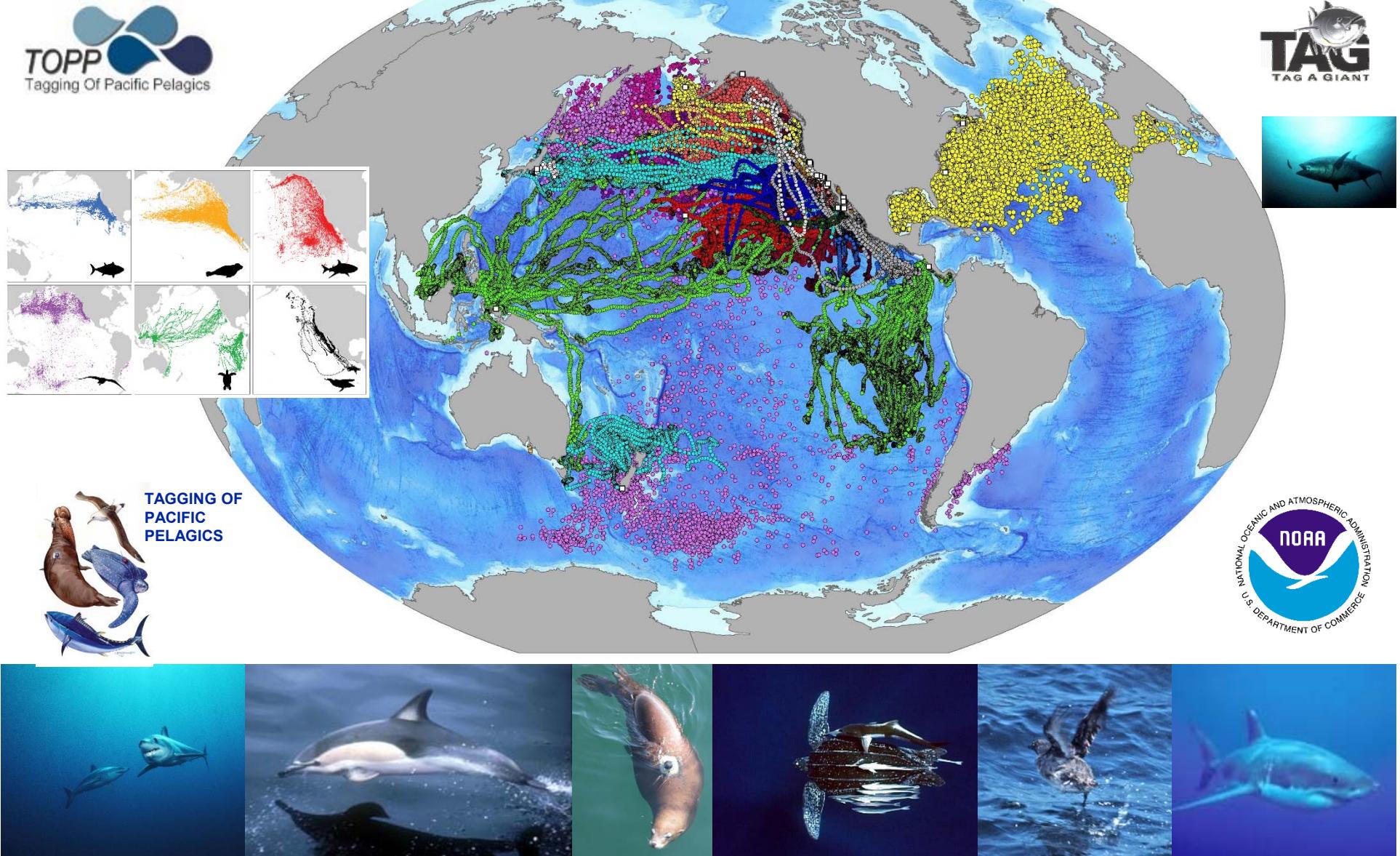
Satellite



Data Management or DAC

Google

Leverage Prior Census (CoML) Efforts in Data Management and Tag Deployment Management (~ 7500 Biologging Tag Events)



GulfTOPP
Tagging of Pelagic Predators
Gulf of Mexico

Home About Resources For Users Data Access

Gulf of Mexico (NRDA NOAA) Using GTOPPP Protocols for Animal Telemetry Post Oil Spill (Protected Site)

Welcome

Welcome to the GulfTOPP website. This site is designed to provide access to telemetry data from tagged animals in the Gulf of Mexico, as part of the NRDA response to the Deepwater Horizon oil spill. Click here to read more...

User Login

Click here to log into data management system.

Login

Announcements

- New Feature
- Contact Us
- Welcome



Extract tags in selected region by species and time range.

Choose species: Atlantic Bluefin Tuna

Time: Sep 20, 2010 to Mar 26, 2011

2007 2008 2009 2010 2011

Atlantic Bluefin Tuna

- 2007
- 2008
- 2009
- 2010
 - 5110056-MA0110A0662-SS
 - 5110058-MA0110A0674-SS
 - 5110059-MA0110A0675-SS
 - 5110060-MA0110A0677-SS
 - 5110061-MA0110A0678-SS
 - 5110062-MA0110A0679-SS
 - 5110063-MA0110A0680-SS
 - 5110064-MA0110A0681-SS
 - 5110067-MA0110A0726-SS
 - 5110068-MA0110A0727-SS
 - 5110070-MA0110A0729-SS
 - 5110072-MA0110A0732-SS
 - 5110073-MA0110A0733-SS
 - 5110074-MA0110A0734-SS
 - 5110076-MA0110A0687-SS
 - 5110077-MA0110A0690-SS
 - 5110078-MA0110A0623-SS
 - 5110080-MA0110A0731-SS
 - 5110083-MA0110A0632-SS
 - 5110085-MA0110A0802-SS
 - 5110087-PAM110P0237-SSI
 - 5110088-MA0110A0763-SS
 - 5110089-MA0110A0801-SS
- 2011

Gulf Sturgeon

Sharks

Environmental Data Information:
SST, Blended, Global, EXPERIMENTAL (8 Day Composite)
Provided by: CoastWatch WEST Coast Regional Node

Home

GulfTOPP
Tagging of Pelagic
Predators
Gulf of Mexico

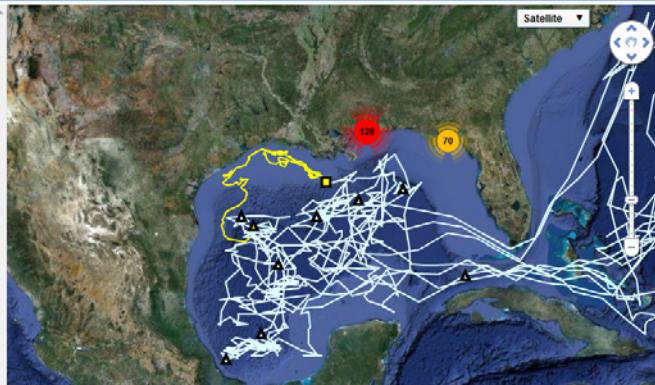
Logged in as Barbara Block (The Chief Scientist)
[Log In](#) [Log Out](#)

[Home](#) [Help](#)

Browse GulfTOPP tags with the tree OR extract tags in a region by species and time range with the menu below the map.

Fish

- Atlantic Bluefin Tuna
 - 2007
 - 2008
 - 2009
 - 2010
 - Gulf Sturgeon
- Sharks**
 - Whale Shark



Now Showing: All tags reporting between 5-Oct-2010 and 5-Oct-2011 | [Terraplot Metrics](#) • [Terms of Use](#)

Extract tags in selected region by species and time range.

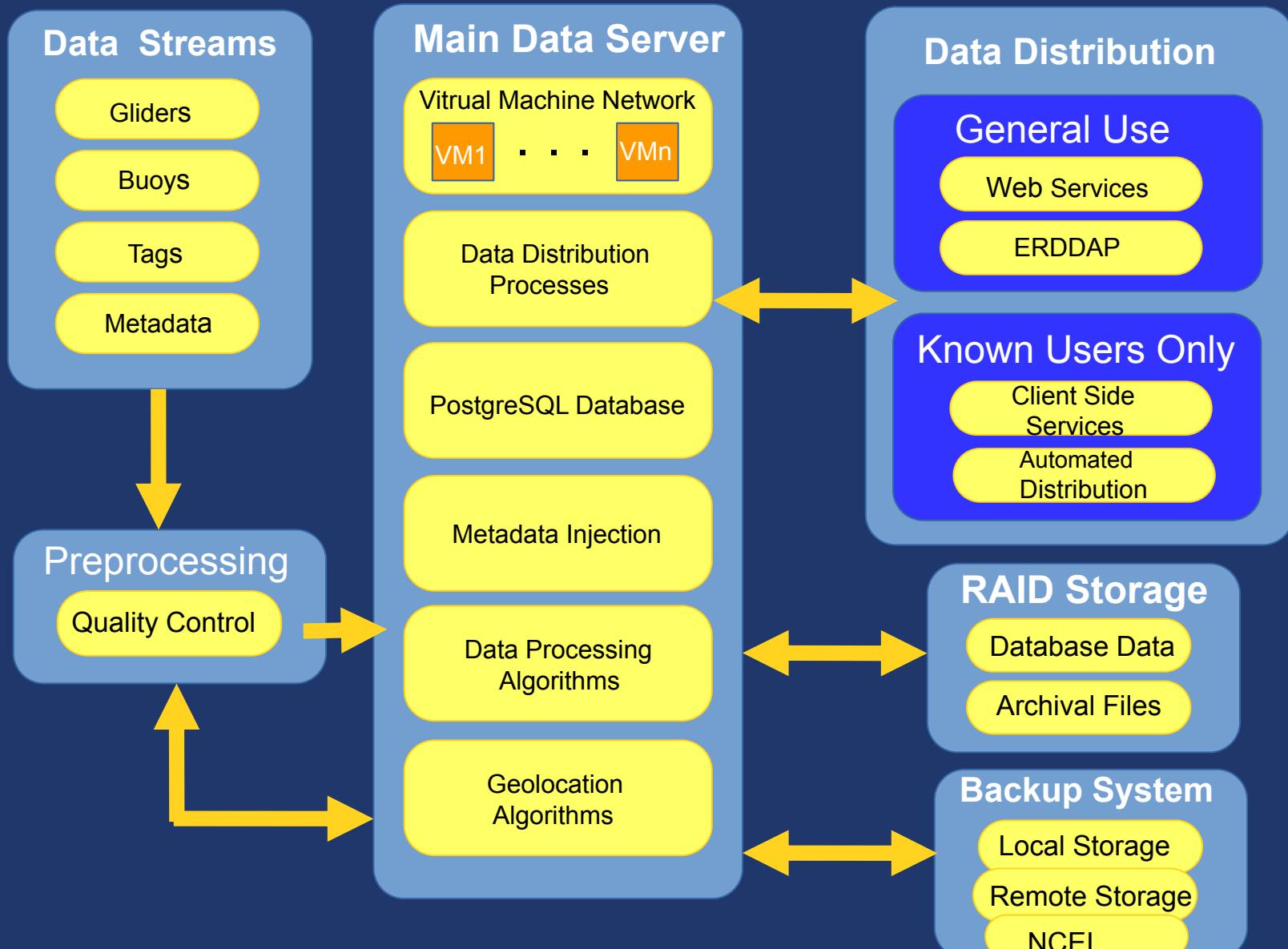
Choose species:	Time: Oct 05, 2010	to Oct 05, 2011	days: 365
-----------------	--------------------	-----------------	-----------

2007 2008 2009 2010 2011 2012

Show tracks in region Remove region
9 tags cross selected region in chosen 365 days

SIV: 19.99,-98.514
NE: 30.77,-91.406

Generalized TOPP/ATN Data Processing System for Biologging Tags Using Open Source Platforms & Codes



Software Components

- Open source (economical, ocean/user community)
- Windows OS required for tag programming and decoding
- PERL, Python, NoSql, Berkeley DB, R
- HTML, Javascript, PERL, Access, PostgreSQL, OPeNDAP
- PostgreSQL - stable architecture, ACID compliant (Multi-version Concurrency Control) , standards compliant, native PERL, Python, ODBC and Java programming interfaces, as well as, backend relational engine for PostGIS
- Web Service [Google Map Engine, GIS]
- ERDDAP

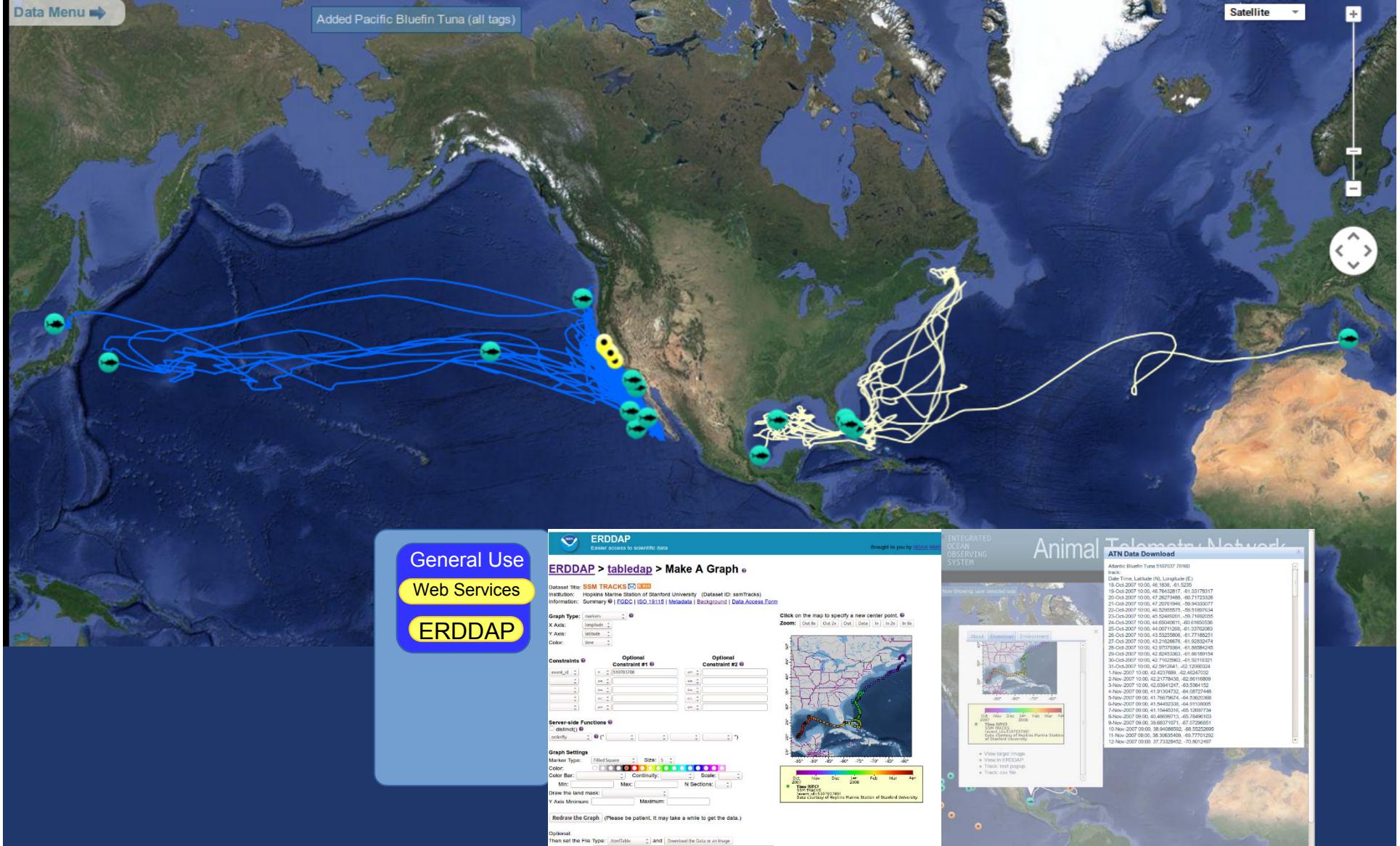
Data Distribution



About | Partners | Documents | Contact

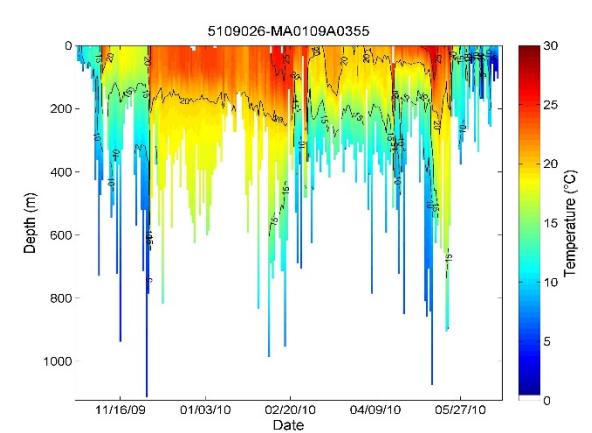
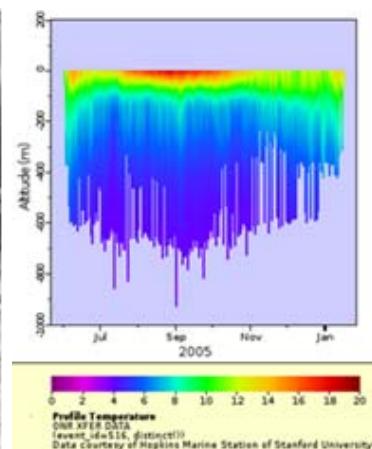
Data Menu ➔

Satellite



The Basics of Biologging Data Management

- Event ID (Use a common Standard)
- Metadata standards for unique tag types (satellite, archival)
- Taxon/species metadata standards for deployments
- Machine automated ingests (e.g. Argos data)
- Satellite location data with quality control information retained (Argos)
- Processed geolocation data (links to algorithms defined or published)
- Sensor calibration corrections (drift), with metadata linkage to tag algorithm corrections applied (raw and corrected data)
- Raw time series data (e.g. dive behavior, temperature, light, acceleration)
- Post-processed files, with clear metadata definitions for statistical models (kfSST, SSM, HM)
- Profile data standards (environmental profile algorithms)



Operational TAG Data Processing Cycle



Predeployment
(Preparing to tag)

Recovery
(Data Capture,
Process & Archive)

Tag Programming
(Setting tag
parameters)

Deployment
(Attachment to Release)



What is Possible for Biologging: Establishing Deployment Metadata Standards

TOPP Predeployment Form

- Please submit tag Predeployment data before leaving to tag in the field.

- Asterisk (*) indicates a required field which must be filled before the form is submitted.

<p>Predeployment</p> <p>PAT Programming</p> <p>SPOT Programming</p> <p>Archival Programming</p> <p>Minimum Deployment</p> <p>Rod-n-Reel Deployment</p> <p>Minimum Recovery</p>	<p>Working Group* Cetaceans <input type="button" value="▼"/></p> <p>Field Leader* Unknown <input type="button" value="▼"/> <input style="width: 150px; height: 20px; margin-left: 10px;" type="text"/> Alternate Leader <input style="width: 150px; height: 20px; margin-left: 10px;" type="text"/></p> <p>Latitude* Deg: <input style="width: 40px; height: 20px; margin-right: 10px;" type="text"/> Min: <input style="width: 40px; height: 20px; margin-right: 10px;" type="text"/> Sec: <input style="width: 40px; height: 20px; margin-right: 10px;" type="text"/> North <input type="button" value="▼"/></p> <p>Longitude* Deg: <input style="width: 40px; height: 20px; margin-right: 10px;" type="text"/> Min: <input style="width: 40px; height: 20px; margin-right: 10px;" type="text"/> Sec: <input style="width: 40px; height: 20px; margin-right: 10px;" type="text"/> West <input type="button" value="▼"/></p> <p>Start Tagging Date * dd-mmm-yyyy <input style="width: 150px; height: 20px; margin-left: 10px;" type="text"/> Return Date * dd-mmm-yyyy <input style="width: 150px; height: 20px; margin-left: 10px;" type="text"/></p> <p>Will tags be tested? * <input checked="" type="radio"/> No <input type="radio"/> Yes <input style="width: 150px; height: 20px; margin-left: 10px;" type="text"/> Testing Date dd-mmm-yyyy <input style="width: 150px; height: 20px; margin-left: 10px;" type="text"/></p> <p>Species Name* : Blue <input type="button" value="▼"/> Argos Program Number* <input style="width: 150px; height: 20px; margin-left: 10px;" type="text"/></p> <p>Comments <input style="width: 600px; height: 80px; margin-top: 10px;" type="text"/></p> <p>Tag Model* PAT4 <input type="button" value="▼"/> Tag Number* <input style="width: 150px; height: 20px; margin-left: 10px;" type="text"/> PTT (Argos ID)* <input style="width: 150px; height: 20px; margin-left: 10px;" type="text"/></p> <p>Entered By* <input style="width: 150px; height: 20px; margin-right: 10px;" type="text"/> Phone Number* <input style="width: 150px; height: 20px; margin-right: 10px;" type="text"/> Email Address* <input style="width: 150px; height: 20px; margin-right: 10px;" type="text"/></p>
--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------



Submit

Fish Group Downloads

- Downloading is the process of transfer files from our server to your computer.
- Using Internet Explorer or the Netscape browser, you can select the location on your computer to save the files.
- Using Safari or Firefox browser, the files will be saved to the browser's default download location.

Predeployment

PAT
Programming

SPOT
Programming

Archival
Programming

Minimum
Deployment

Rod-n-Reel
Deployment

Minimum
Recovery

- | | |
|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| <input type="radio"/> Empty Access Database file (FishGroup_Bank.mdb) | <input type="radio"/> Access Database Instructions File (AccessDataCollection.doc) |
| <input type="radio"/> Predeployment Form (frmPredeployment.pdf) | <input type="radio"/> Field Definitions (FishGroupFieldDefinitions.doc) |
| <input type="radio"/> Archival Programming Form (frmLTD2310Prog.pdf) | <input type="radio"/> PAT Programming Form (frmPATprogramming.pdf) |
| <input type="radio"/> SPOT Programming Form (frmSPOTprog.pdf) | |
| <input type="radio"/> Archival Deployment Form (frmArchDeploy.pdf) | <input type="radio"/> Satellite Deployment (frmSatDeployment.pdf) |
| <input type="radio"/> Archival Recovery Form (frmArchivalRecovery.pdf) | <input type="radio"/> Minimum Recovery Form (frmRecoveryMin.pdf) |
| <input type="radio"/> PAT Recovery Form (frmPATRecovery.pdf) | <input type="radio"/> SPOT Recovery Form (frmSPOTRecovery.pdf) |
| <input type="radio"/> Deck Logsheet (DeckSheet.xls) | |

Download



Establishing Global Standards for Event ID, Tag Codes

Tag Code = TC_MC_TAGID

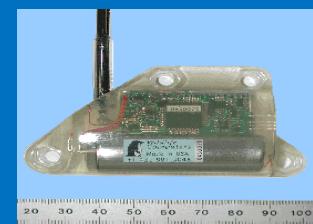
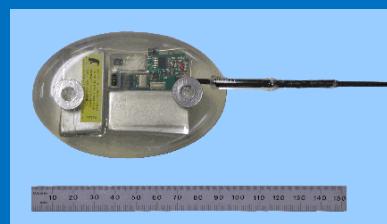
Tag Manufacture	Tag Type	Tag Model	Type Code	Model Code
Alek Electronic CT Tag			AE	01
British Antarctic Survey Tag			UK	01
Burgess	Archival	Acoustic Tag	AT	01
Fletcher Acoustic package	Archival	ATDR	FA	01
Hallprint	Conventional	Conventional	CH	01
Floy	Conventional	Conventional	CF	01
Wildlife Computers	Transmitting	Cricket	CR	01
Ferguson Manufacturing	Archival	GPS	GP	01
Wildlife Computers	Archival	HTR	HT	01
Lotek Wireless	Archival	LTD1100	LO	04
Lotek Wireless	Archival	LTD2300	LO	05
Lotek Wireless	Archival	LTD2310	LO	01
Lotek Wireless	Archival	LTD2400	LO	03
Lotek Wireless	Archival	LTD2410	LO	02
Wildlife Computers	Archival	Mk10	MK	10
Wildlife Computers	Archival	Mk3	MK	30
Wildlife Computers	Archival	Mk5	MK	50
Wildlife Computers	Archival	Mk6	MK	60
Wildlife Computers	Archival	Mk7	MK	70
Wildlife Computers	Archival	Mk8	MK	80
Wildlife Computers	Archival	Mk9	MK	90
Wildlife Computers	Transmitting	PAT2	PA	01
Wildlife Computers	Transmitting	PAT3	PA	02
Wildlife Computers	Transmitting	PAT4	PA	03
Wildlife Computers	Transmitting	PAT5	PA	04
Microwave Telemetry	Transmitting	Pico100	PI	01
Telonics	Transmitting	PTT	PT	01
ATS VHS Radio Tags	Transmitting	Radio Tag	RT	01
S Blackwell TDR	Archival	SBTDR	SB	01
Sea Mammal Research Unit	Archival/Transmitting	SMRU/SRDL	SA	04
Sea Mammal Research Unit	Experimental	SMRU/CTD	SC	05
Sea Mammal Research Unit	Experimental	SMRU/GPS	SG	01
Star ODI	Archival	Conductivity	SO	01
Wildlife Computers	SPLASH	SPLASH	SL	01
Wildlife Computers	Archival/Transmitting	SPOT2	SP	01
Wildlife Computers	Archival/Transmitting	SPOT3	SP	02
Wildlife Computers	Archival/Transmitting	SPOT4	SP	03
Wildlife Computers	Archival/Transmitting	SPOT5	SP	04
BruceMateTlonics	Archival/Transmitting	Telonics	BM	01
Telonics	Archival/Transmitting	Telonics	TE	01
Unknown	Unknown	Unknown	XX	00
Northwest Marine Technology	Archival	NMT	NM	01

TOPPID = SSYYDDD

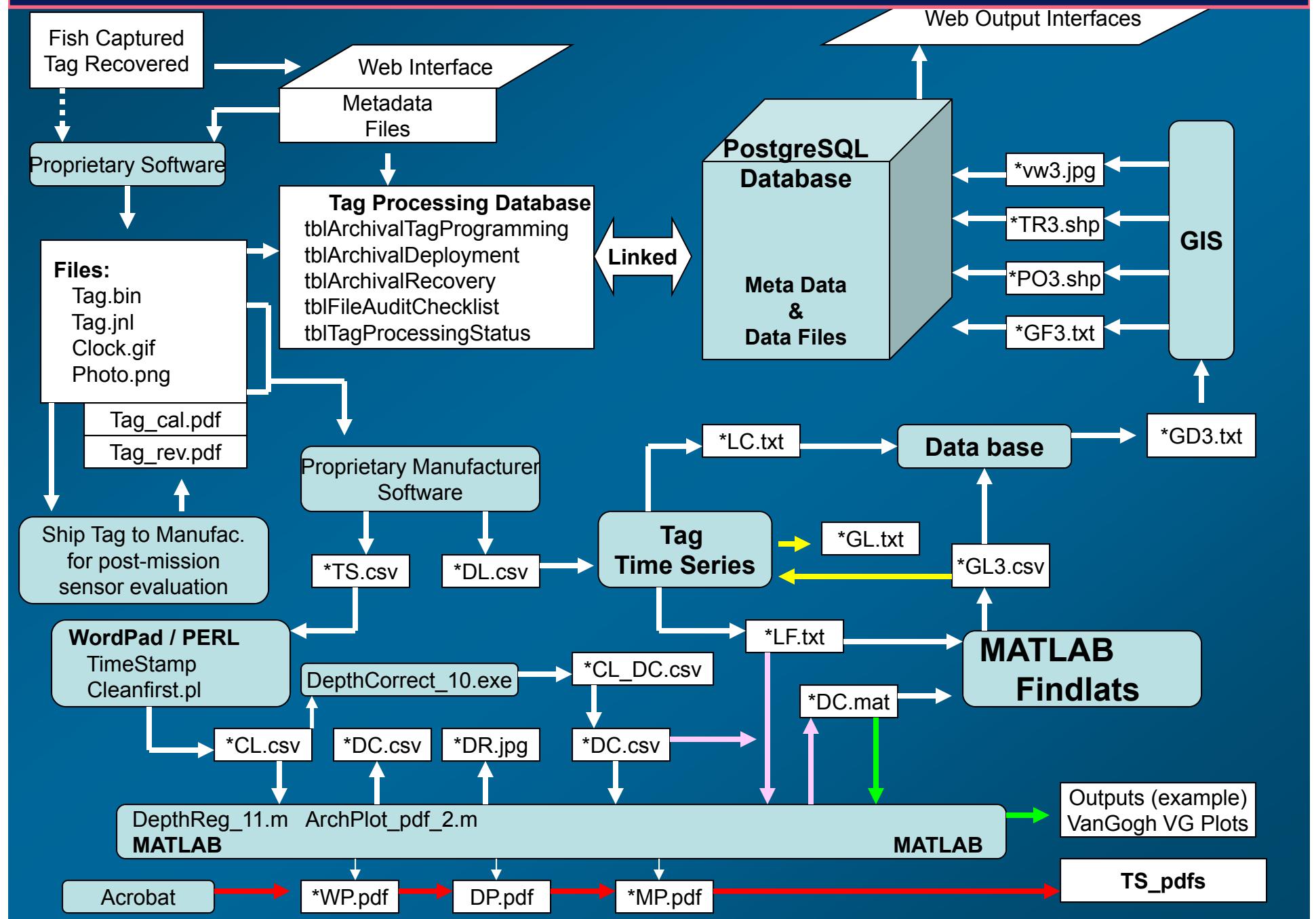
SS = 2-digit species code

YY = 2-digit year of deployment

DDD = Quasi-sequential deployment per year. TOPPID is specific to any one animal release regardless of how many tags are attached to the animal

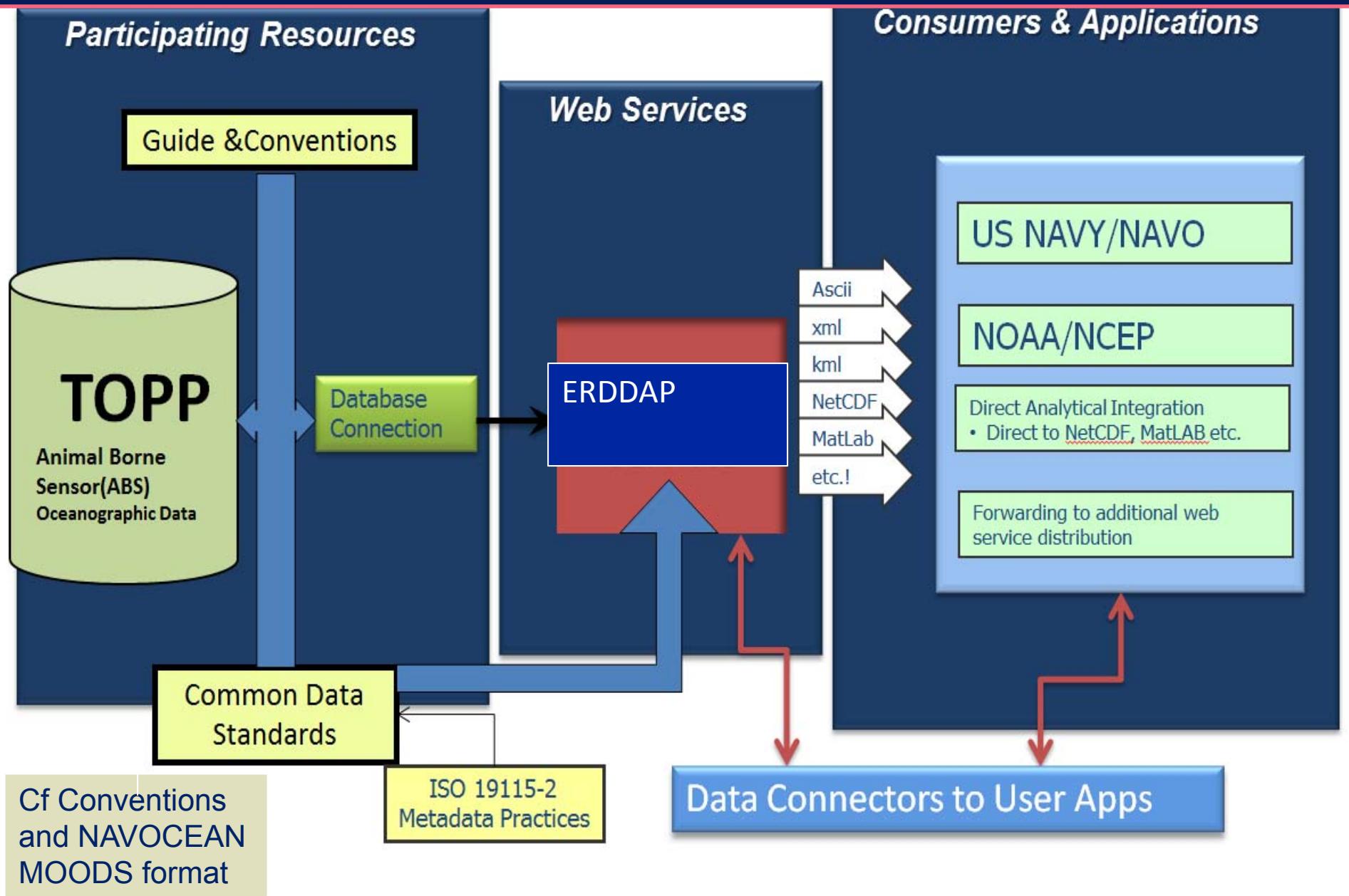


Can Unique Scripts for Tag Processing Be Standardized?

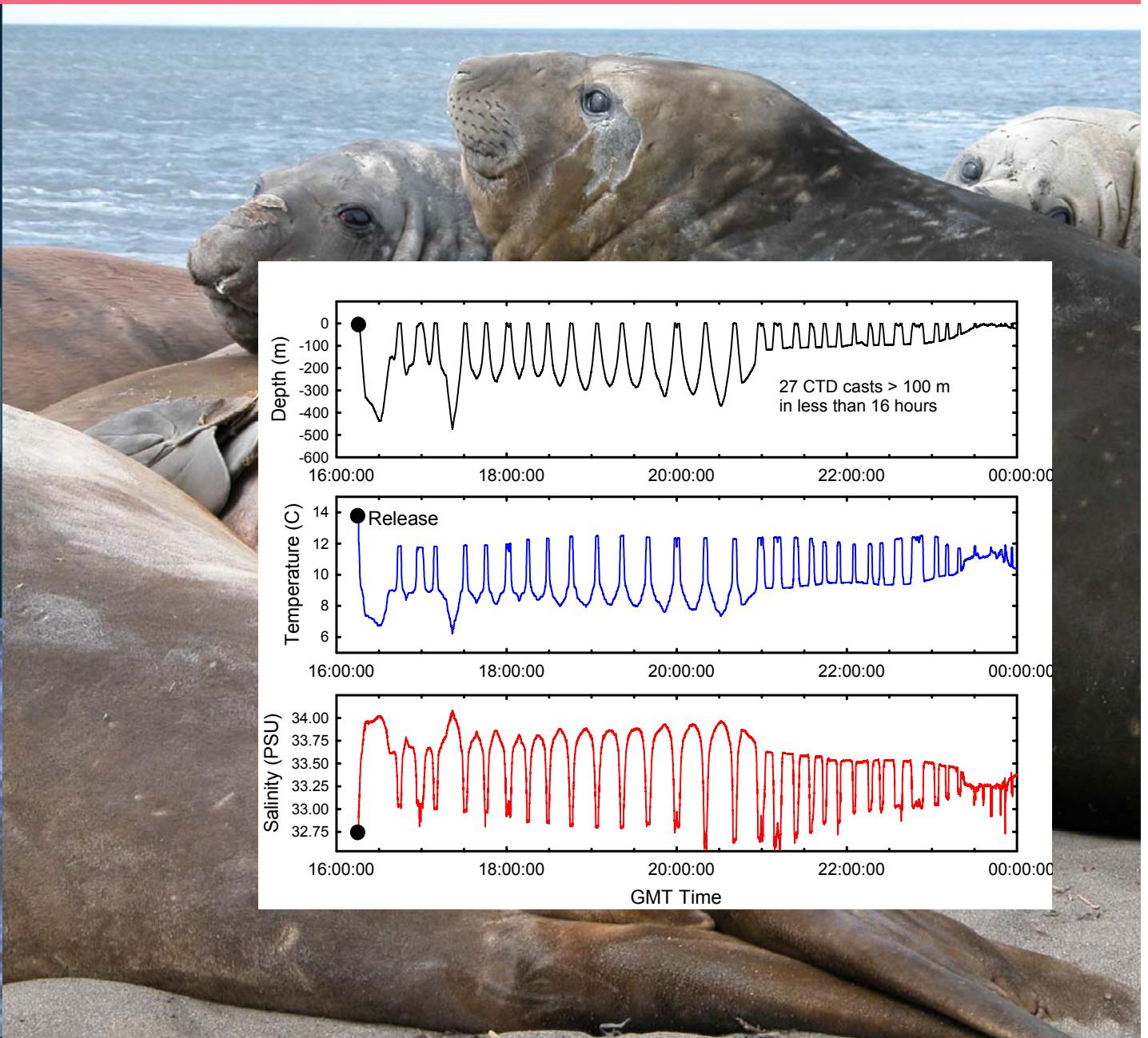
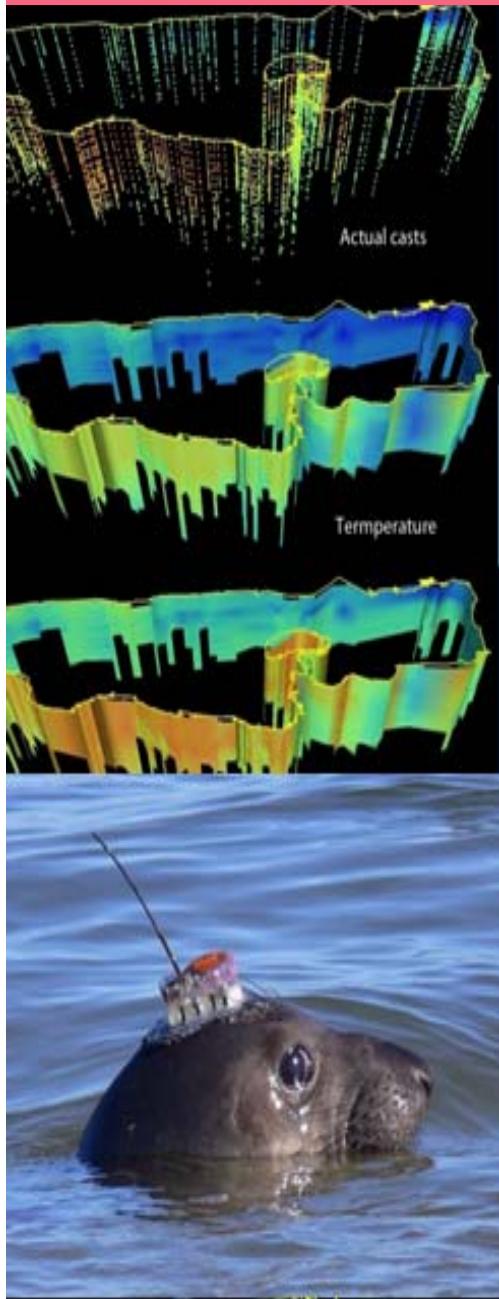


ATN Pilot Projects

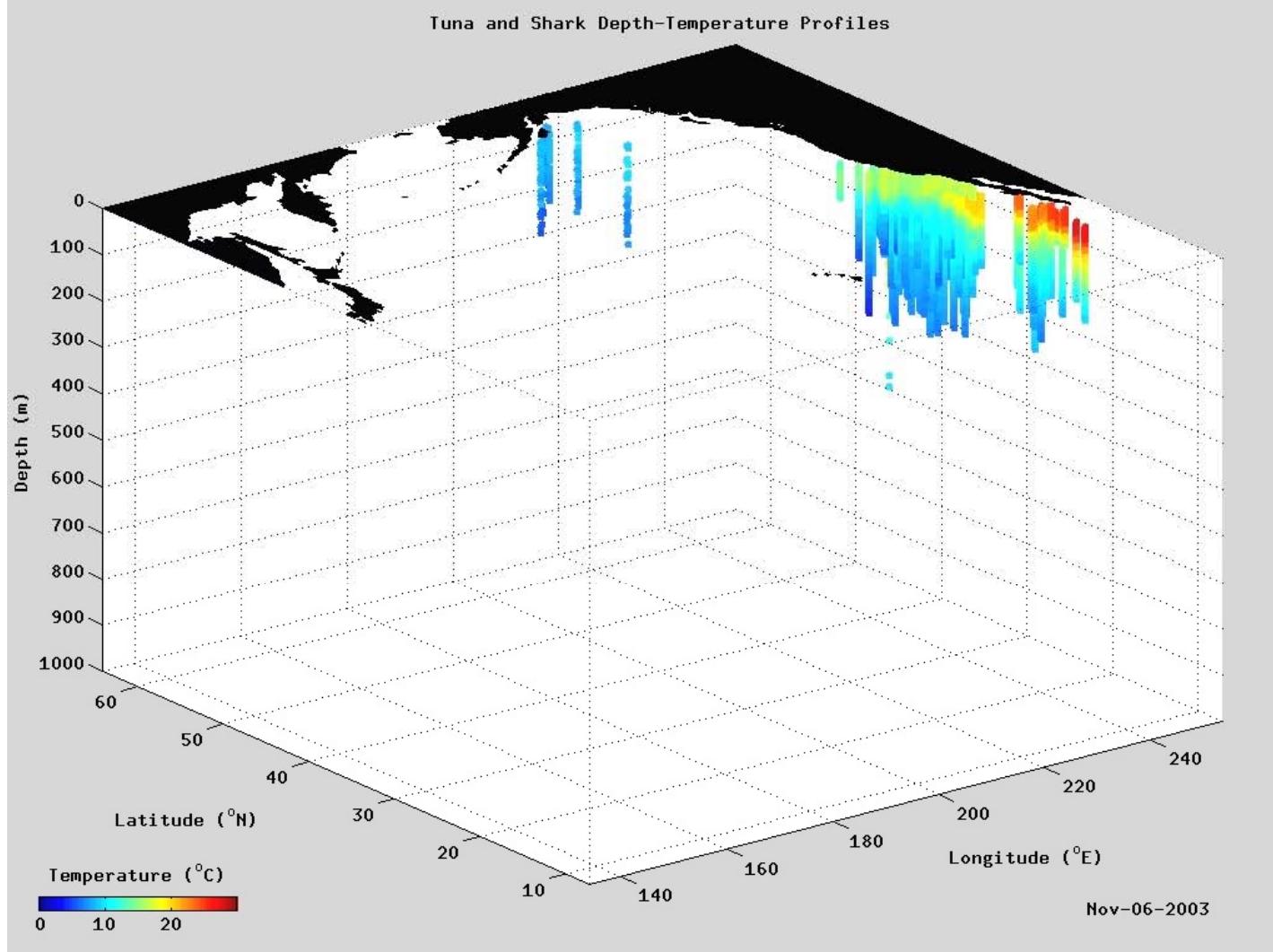
Specific Projects: Elephant Seal Data Delivery to ONR/NAVO



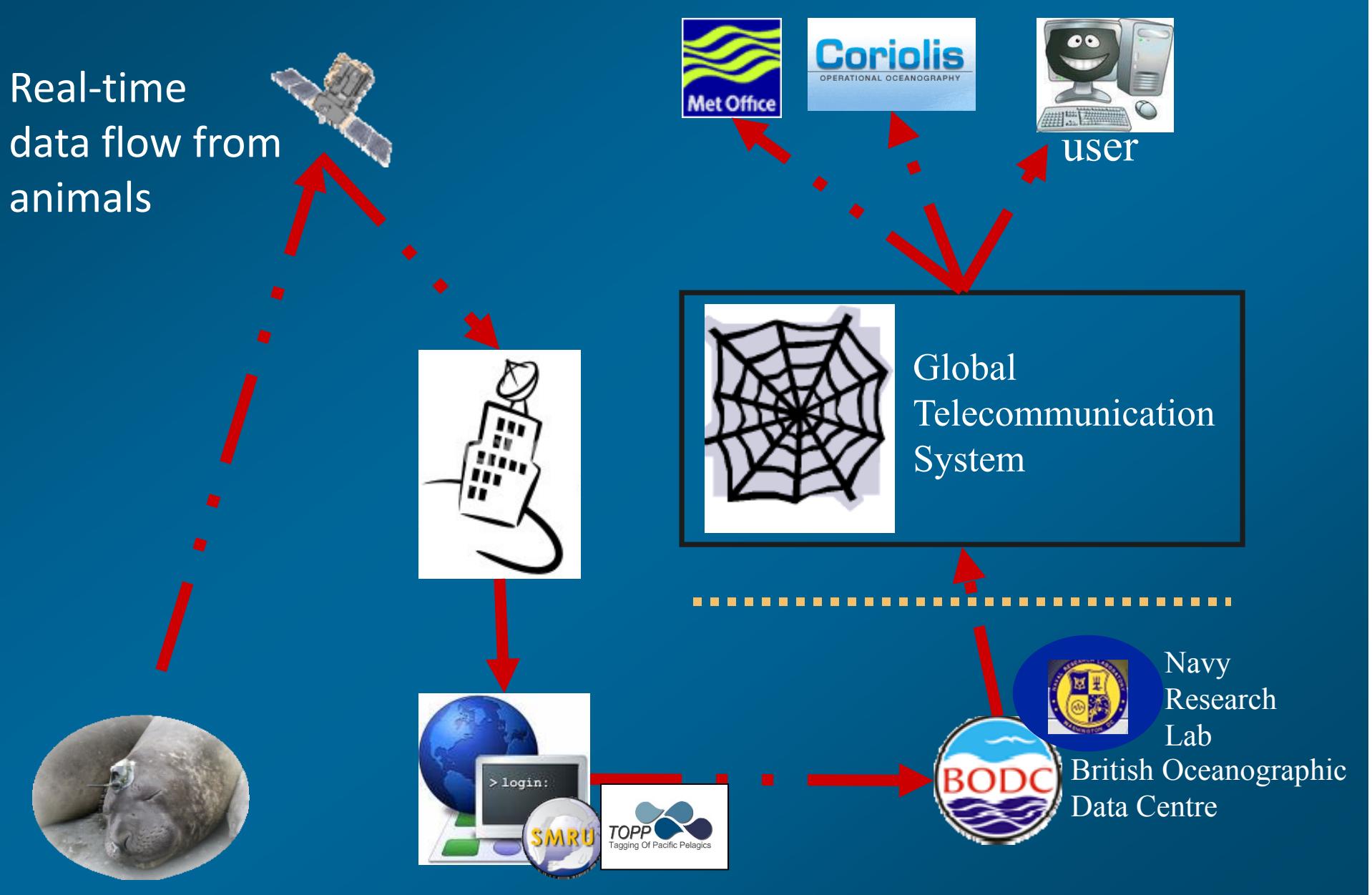
Animals As Ocean Sensors



Animals As Ocean Sensors



IOOS/ONR Sponsored Data Integration Projects with SMRU & TOPP/ATN Program Provides Ocean Profiles from Animals





Animal Telemetry Network

Quick Info 1

Quick Info 2

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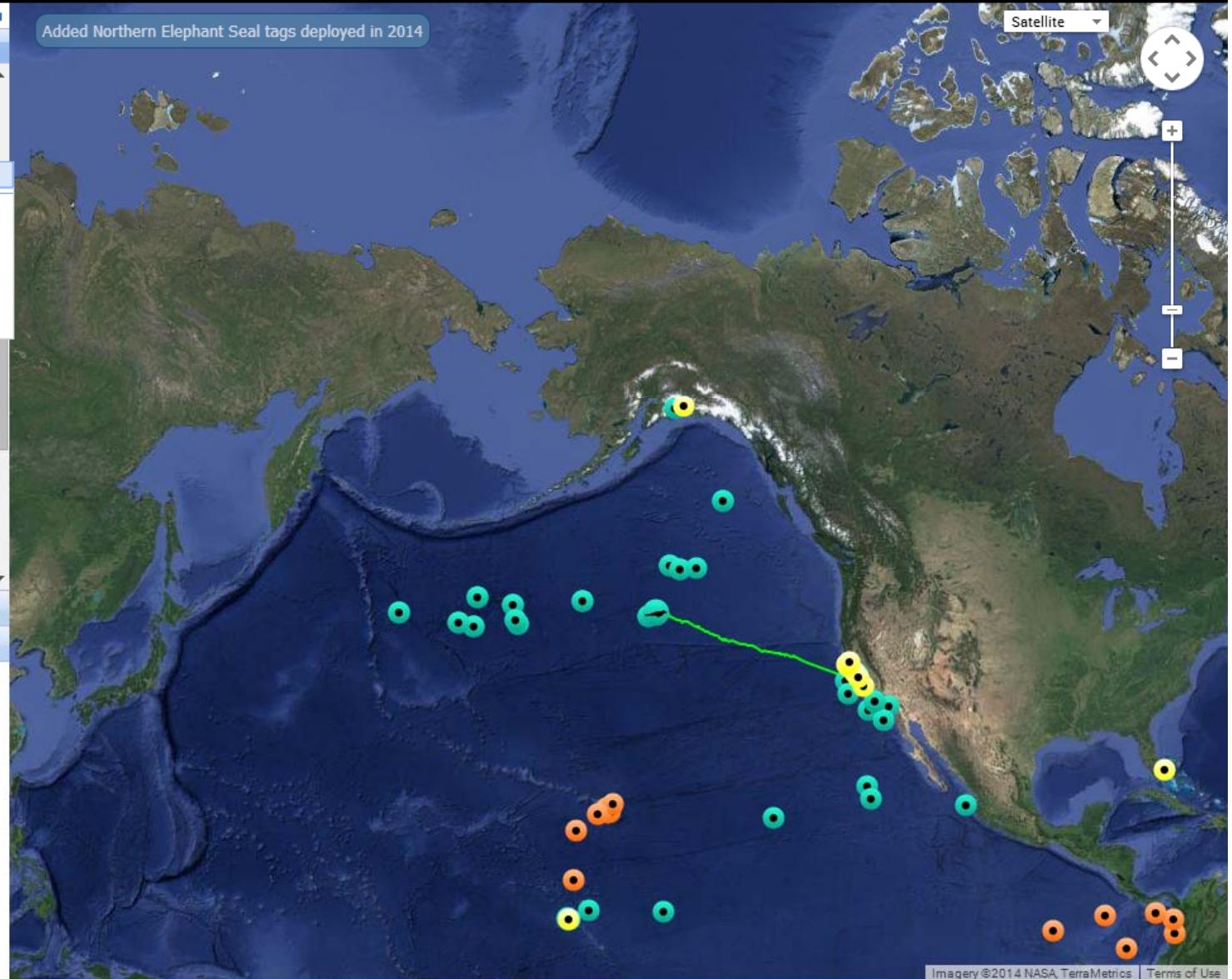
Tagged Animals

- + 2010
- + 2011
- + **2014**

- 2014001-62036-SPOTS5
- 2014001-62036-SPOTS5
- Download Track Data:
 - text popup
 - csv file
 - kml file
 - other formats: ERDDAP
- 2014008-120604-MK10-AI
- 2014009-133771-SMRU-C
- 2014010-133772-SMRU-C
- 2014011-133773-SMRU-C
- 2014012-133774-SMRU-C
- 2014013-133775-SMRU-C
- 2014014-133776-SMRU-C
- 2014015-133777-SMRU-C
- 2014016-133778-SMRU-C
- 2014017-133779-SMRU-C

Buoys

Gliders





Animal Telemetry Network

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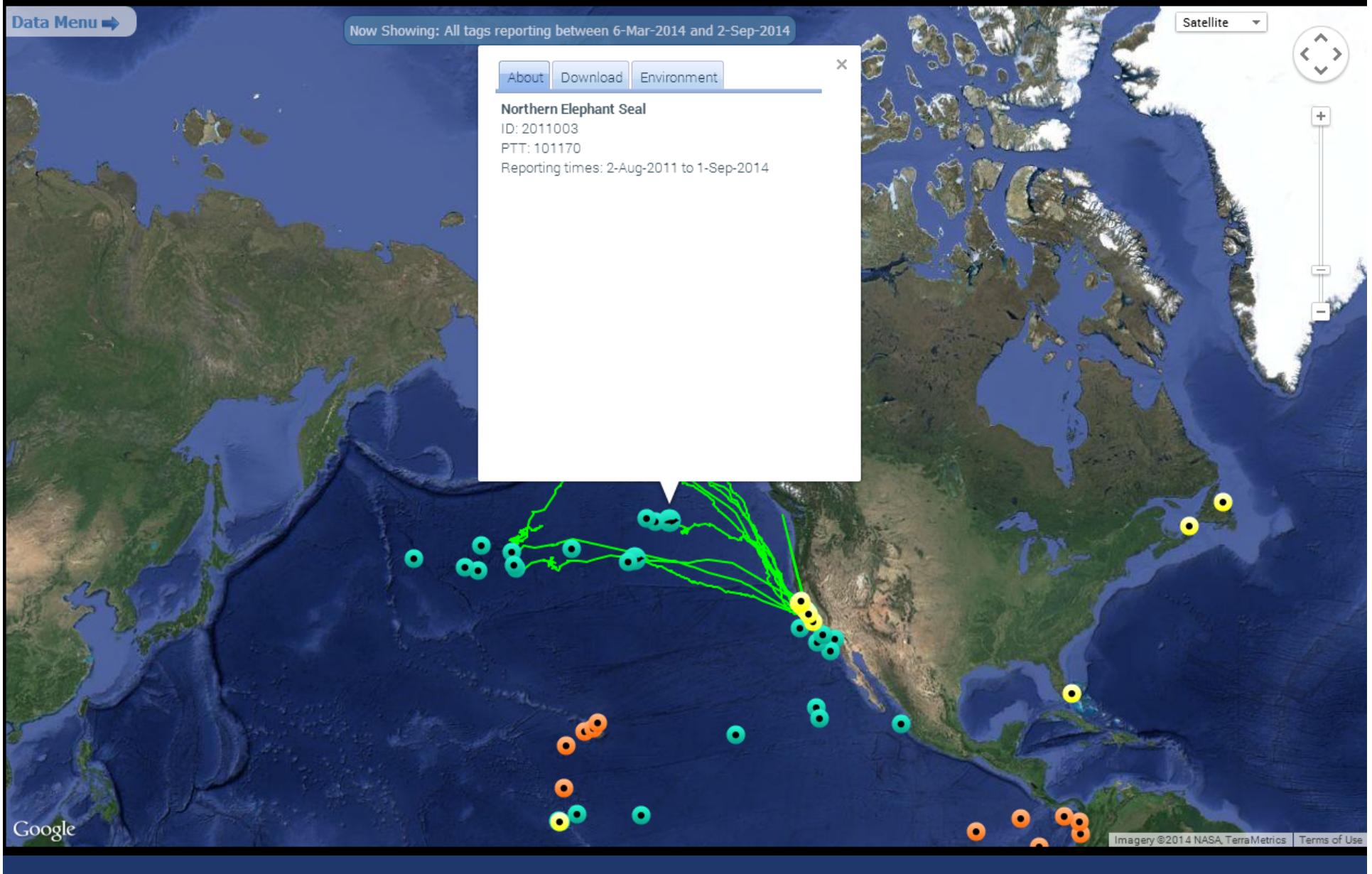
Now Showing: All tags reporting between 6-Mar-2014 and 2-Sep-2014

[About](#) [Download](#) [Environment](#)**Northern Elephant Seal**

ID: 2011003

PTT: 101170

Reporting times: 2-Aug-2011 to 1-Sep-2014



Google

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Animal Telemetry Network

Quick Info 1

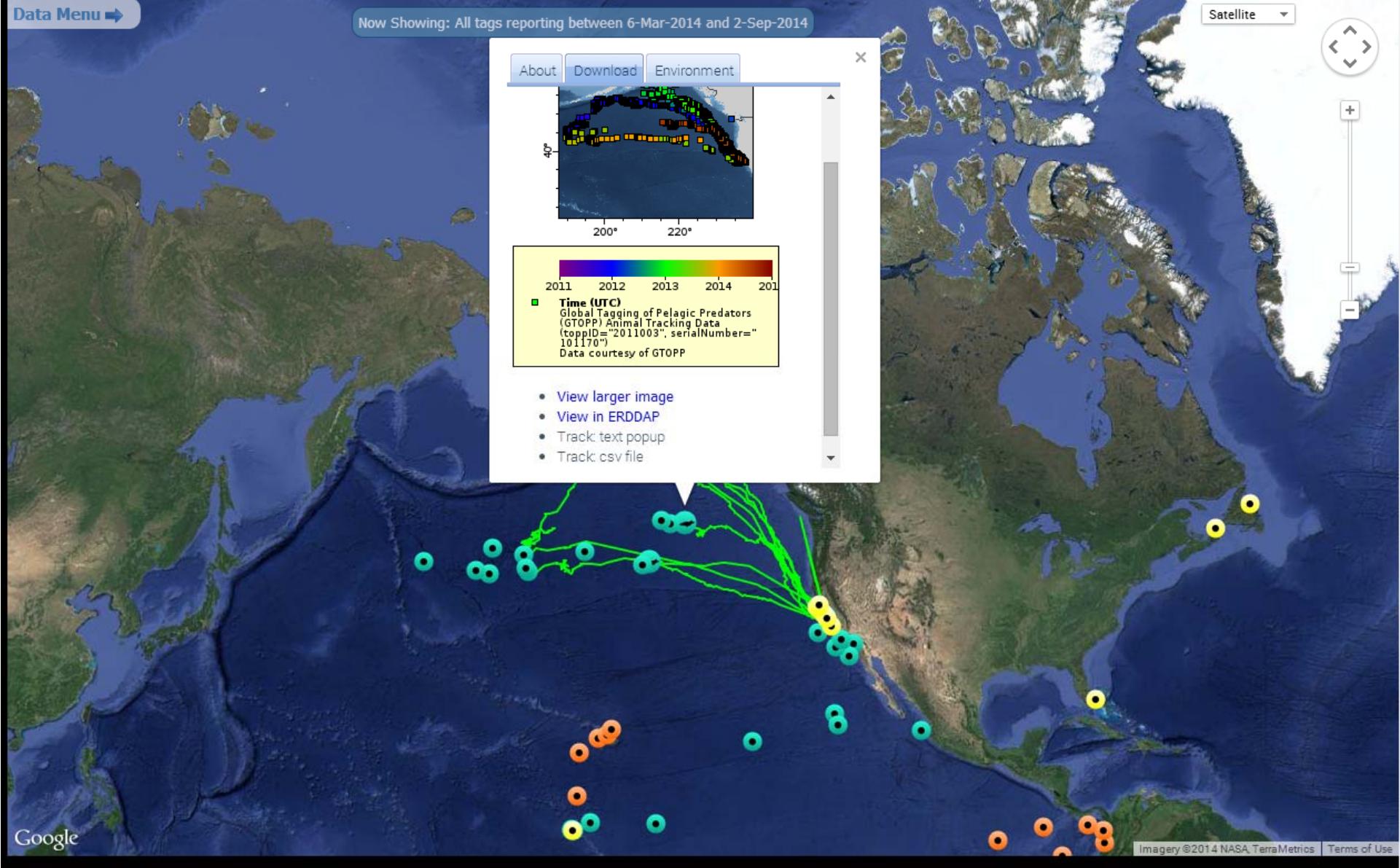
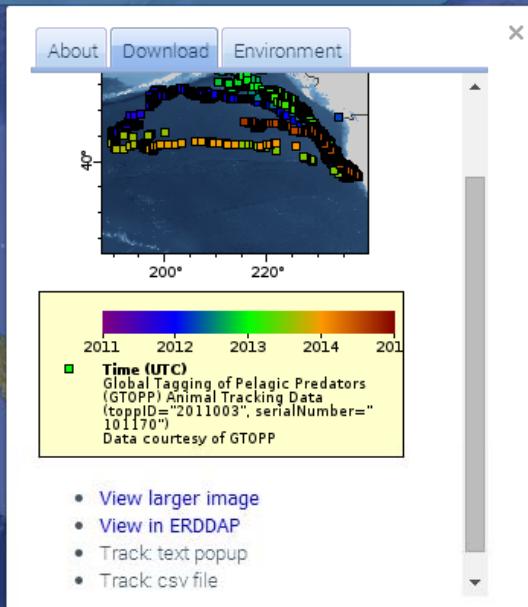
Quick Info 2

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Data Menu ➔

Now Showing: All tags reporting between 6-Mar-2014 and 2-Sep-2014



Google

Imagery ©2014 NASA TerraMetrics | Terms of Use



ERDDAP > [tabledap](#) > Make A Graph

Dataset Title: **Global Tagging of Pelagic Predators (GTOPP) Animal Tracking Data**

Institution: GTOPP (Dataset ID: gtoppAT)

Range: longitude = 72.767 to 359.438°E, latitude = -77.868 to 61.106°N, time = 2002-06-26T21:10:31Z to (now?)

Information: [Summary](#) | [License](#) | [FGDC](#) | [ISO 19115](#) | [Metadata](#) | [Background](#) | [Subset](#) | [Data Access Form](#)

Graph Type: [markers](#)

X Axis: [longitude](#)

Y Axis: [latitude](#)

Color: [time](#)

Constraints

Optional Constraint #1			Optional Constraint #2		
topplID	= "2011003"	<=			
	"2011003"				
serialNumber	= "101170"	<=			
	"101170"				
	>=				
	>=				
	>=				

Server-side Functions

[distinct\(\)](#)

[orderBy](#) (" ")

Graph Settings

Marker Type: [Filled Square](#) Size: [5](#)

Color:

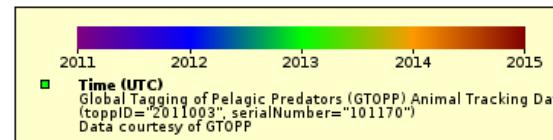
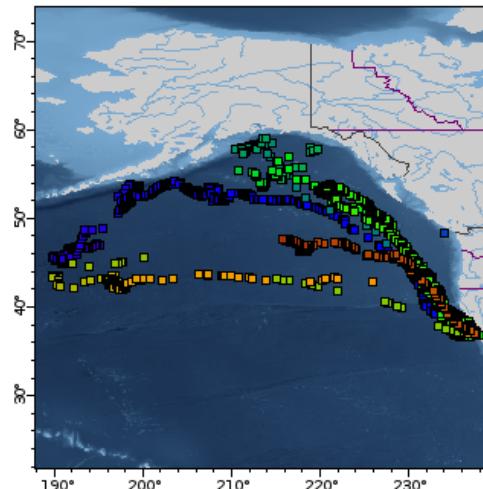
Color Bar: Continuity: Scale:
Min: Max: N Sections:

Draw the land mask:

Y Axis Minimum: Maximum:

Click on the map to specify a new center point.

Zoom: [Out 8x](#) [Out 2x](#) [Out](#) [Data](#) [In](#) [In 2x](#) [In 8x](#)



Redraw the Graph (Please be patient. It may take a while to get the data.)

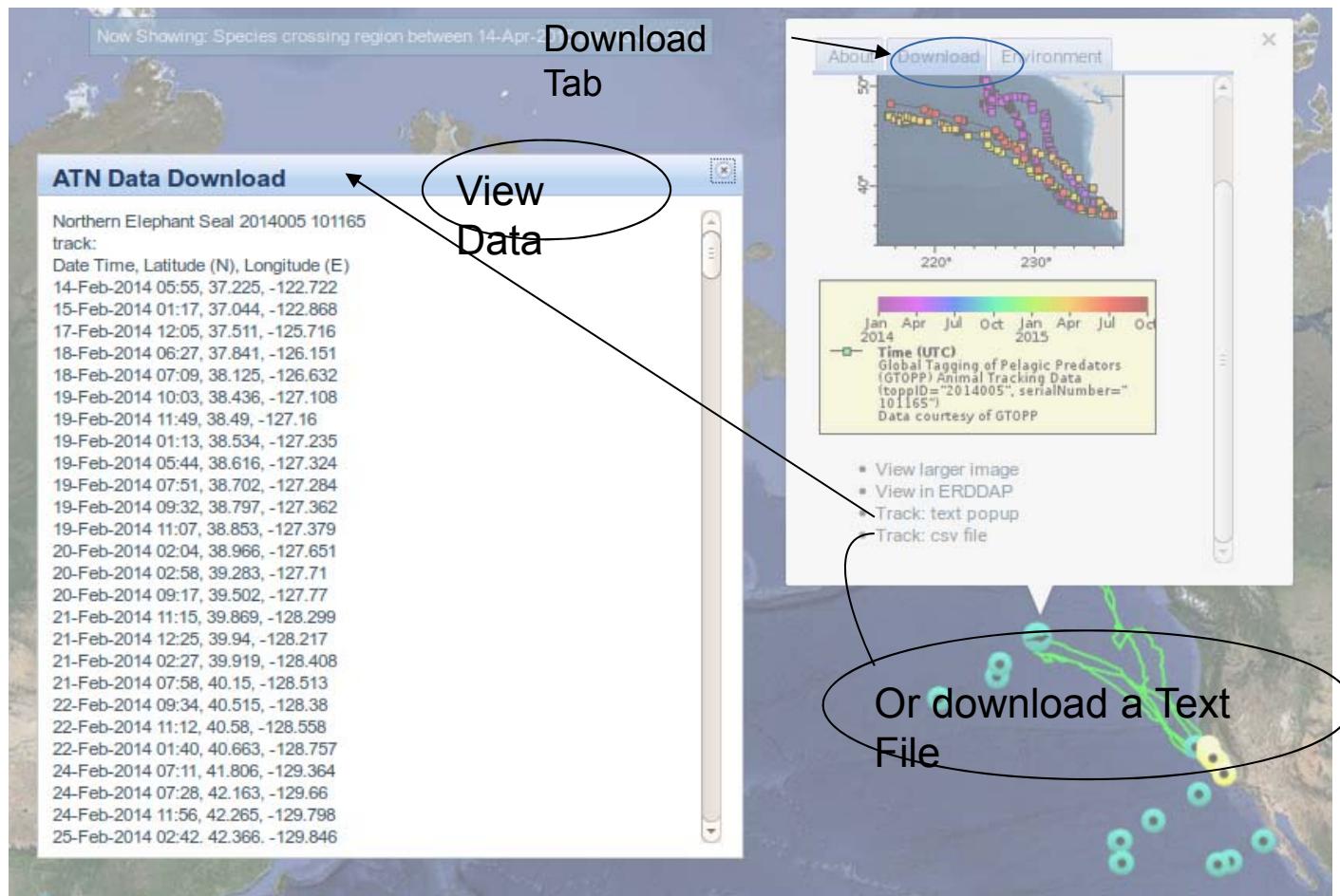
Optional:

Then set the File Type: [.htmlTable](#) and [Download the Data or an Image](#)

or view the URL: <http://oceandata.pfeg.noaa.gov/erddap/tabledap/gttoppAT.htmlTable?>

([Documentation](#) / [Bypass this form](#)) ([File Type information](#))

Downloading ATN data



For individual animals, view or download the data from the main page

Use ERDDAP for customized downloads or downloading multiple tracks

Downloading ATN data: ERDDAP graph page



[ERDDAP > tabledap > Make A Graph](#) ?

Dataset Title: **NEAR REAL TIME ESEALS** [RSS](#)

Institution: Hopkins Marine Station of Stanford University (Dataset ID: nearRealTimeEseals)

Information: [Summary](#) ? | [FGDC](#) | [ISO 19115](#) | [Metadata](#) | [Background](#) | [Data Access Form](#)

Graph Type: markers ?

X Axis: temperature

Y Axis: altitude

Color: time

Constraints ?

Optional Constraint #1 ?

Optional Constraint #2 ?

event_id	=	133778
	>=	
	<=	
	>	
	<	
	>=	
	<=	
	>	
	<	

Downloading ATN data: ERDDAP graph page

 **ERDDAP**
Easier access to scientific data

Brought to you by [NOAA](#) [NMFS](#) [SWFSC](#) [ERD](#)

[ERDDAP](#) > [tabledap](#) > Make A Graph

Dataset Title: **NEAR REAL TIME ESEALS**  

Institution: Hopkins Marine Station of Stanford University (Dataset ID: nearRealTimeEseals)

Information: [Summary](#)  | [FGDC](#) | [ISO 19115](#) | [Metadata](#) | [Background](#) | [Data Access Form](#)

Graph Type: 

X Axis: 

Y Axis: 

Color: 

Constraints 

Optional
Constraint #1 

Optional
Constraint #2 

event_id 

=  133778

TOPP -IOOS 2011 Project- Developing Capacity for Serving Animal Ocean Data to NRL



ERDDAP

Easier access to scientific data

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ERDDAP > [tabledap](#) > Make a Graph

Dataset Title: [ONR XFER DATA](#)

Institution: Hopkins Marine Station of Stanford University (Dataset ID: xfertestONR)

Information: [Summary](#) | [Metadata](#) | [Background](#) | [Data Access Form](#)

Graph Type: [markers](#)

X Axis: [longitude](#)

Y Axis: [latitude](#)

Color: [event_id](#)

Constraints

	Constraint #1
time	\geq 2000-03-07T00:00:00Z
event_id	\neq 0
latitude	\geq 13
longitude	\geq -180
	\geq

Constraint #1

Constraint #2

	Constraint #2
time	\leq 2012-03-14T00:00:00Z
event_id	\leq
latitude	\leq 79
longitude	\leq -114
	\leq

Server-side Functions

distinct()
 orderBy(" "
 orderByMax(" "

Graph Settings

Marker Type: [Filled Square](#) Size: 5

Color:

Color Bar: Continuity: Scale:

Min: Max: N Sections:

Draw the land mask:

Y Axis Minimum: Maximum:

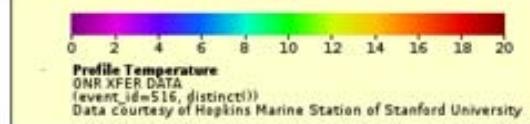
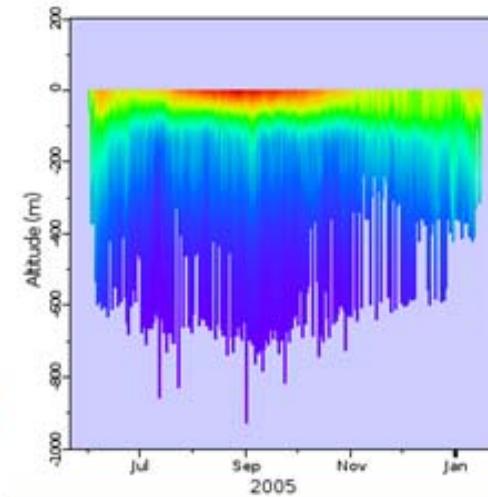
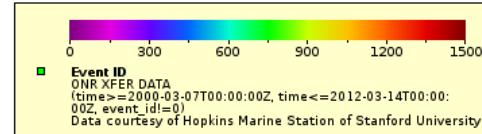
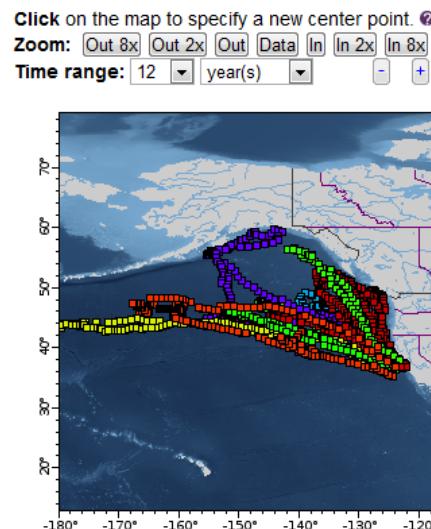
[Redraw the Graph](#) (Please be patient. It may take a while to get the data.)

Optional:

Then set the File Type: [.htmlTable](#) and [Download the Data or an Image](#)

or view the URL: <http://datafer.stanford.edu:8080/erddap/tabledap/xfertestONR.html>

([Documentation](#) / [How to bypass this form](#)) ([File Type information](#))



Downloading ATN data: ERDDAP data access

form How to download large amounts of ATN data rather than individual animal tracks

The screenshot shows the ERDDAP Data Access Form for the GTOPP dataset. On the left, there's a sidebar with the NOAA logo and the text "ERDDAP: Easier access to scientific data". The main area displays the dataset title "Global Tagging of Pelagic Predators (GTOPP) Animal Tracking Data" and its ID "gtoppAT". Below the title are links for "Summary", "License", "FGDC", "ISO 19115", "Metadata", "Background", "Subset", and "Make a graph".

Variable (checkboxes): commonName, yearDeployed, project, toppID, serialNumber, isDrifter, time (UTC), longitude (degrees_east), latitude (degrees_north), LC.

Optional Constraint #1 and **Optional Constraint #2** sections: These sections allow specifying search criteria using operators (>=, <=, =) and values ("2014005", "101165").

Minimum or a List of Values and **Maximum**: A dropdown menu lists various species names, with "Basking Shark" selected. The maximum value is set to 9.971 and the minimum to .193.

Server-side Functions: Options include "distinct()", "orderBy", and a dropdown for "File type" which is set to ".htmlTable".

File type: .htmlTable - View a .html web page with the data in a table. Times are ISO 8601 strings.

Choose data by time or location

Choose data by species, deployment year, or project



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90 60 10 X ⚡



Tagged Animals

Popup Tags

Buoys

Ano Nuevo

Cambria

Chagos

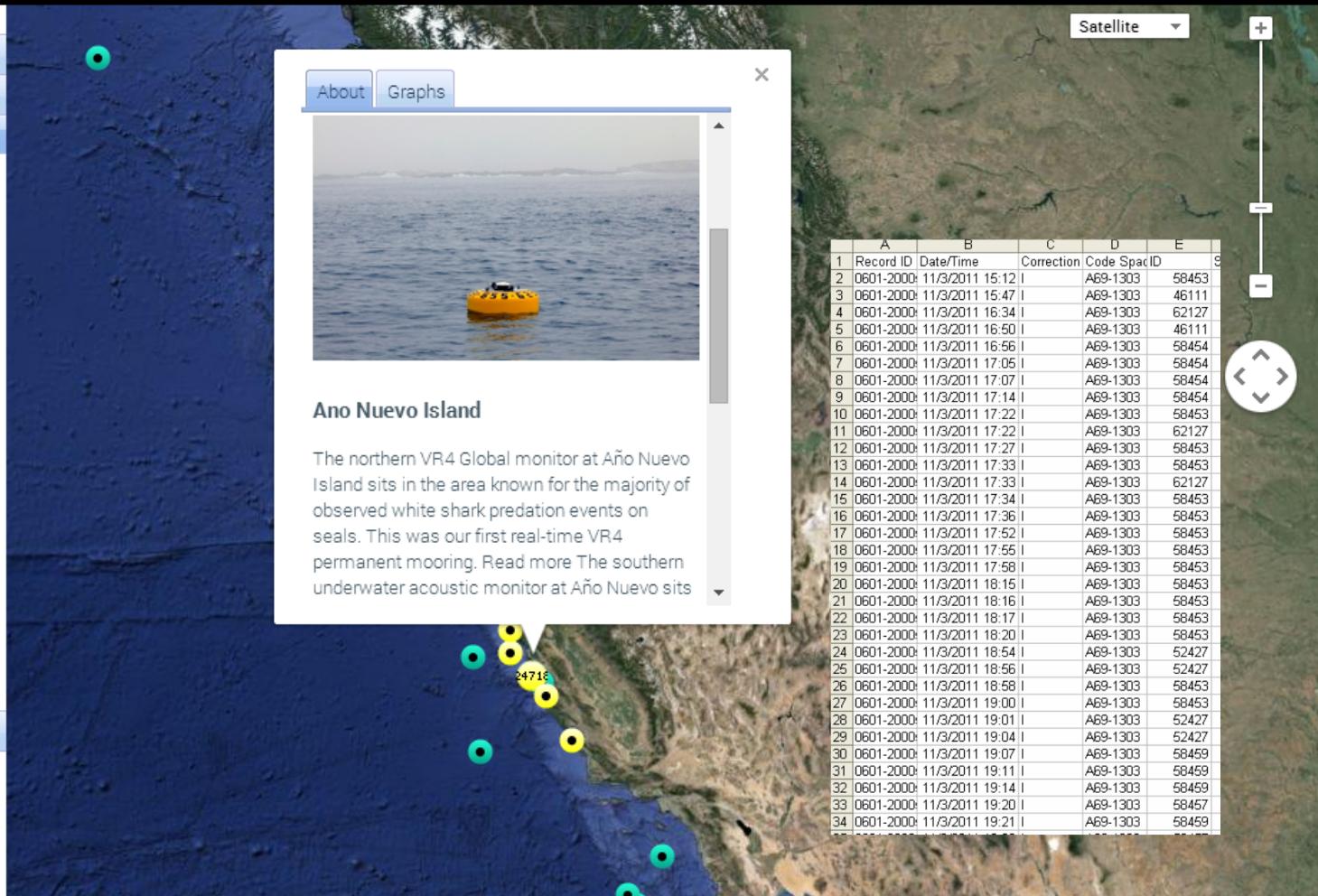
Farallones

Hopkins

Palmyra

Tomales

Gliders



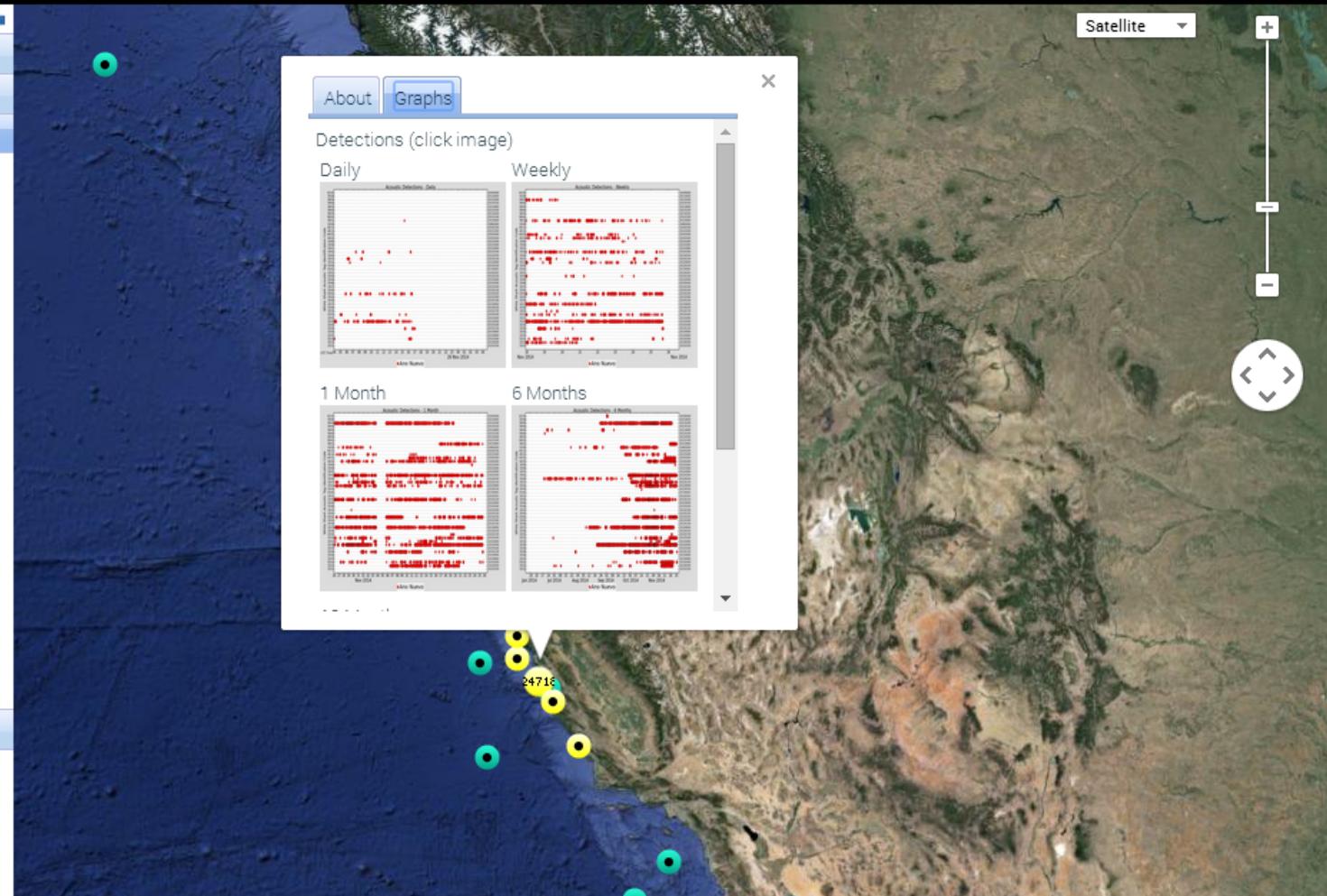


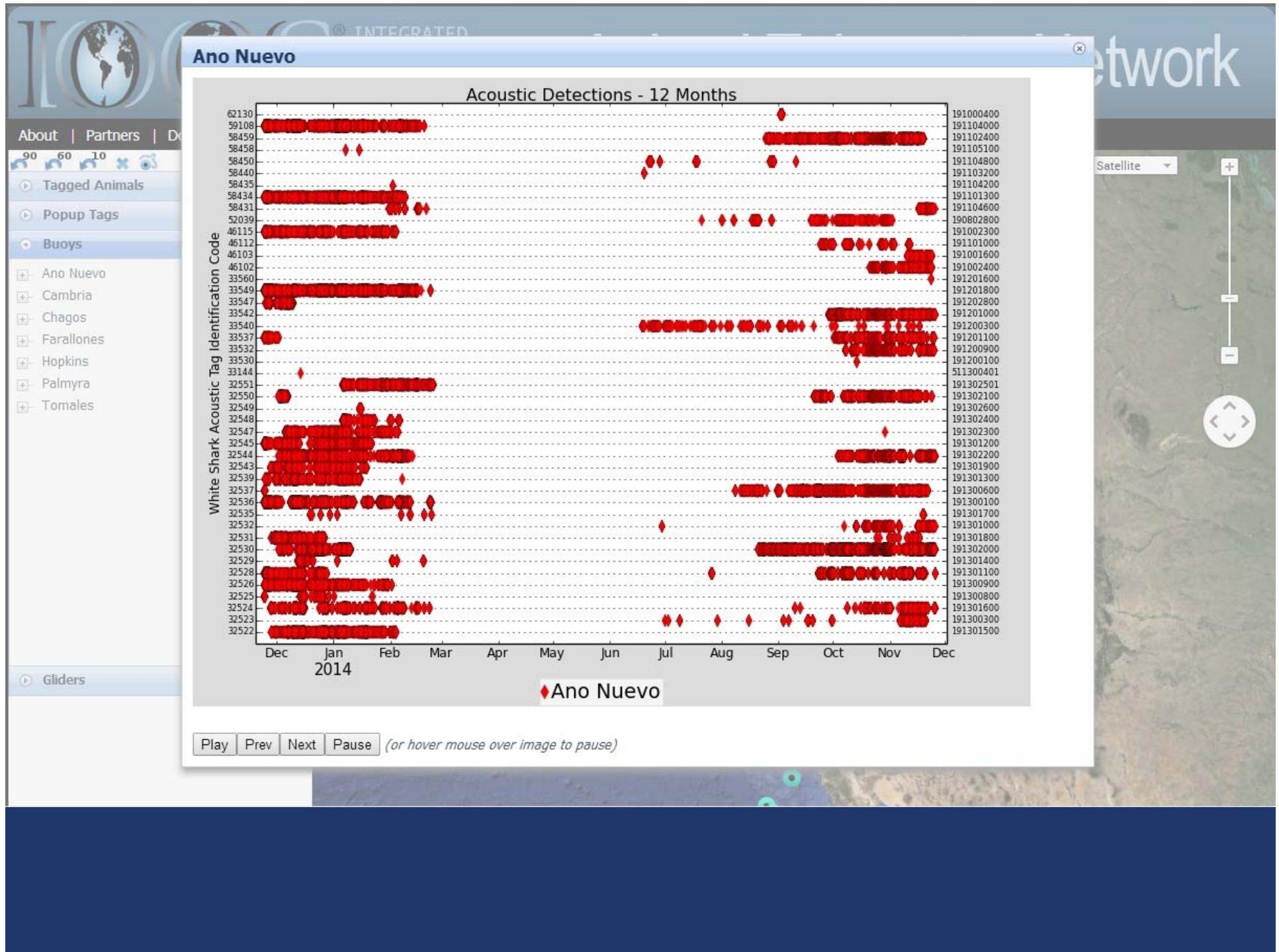
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Quick Info 1

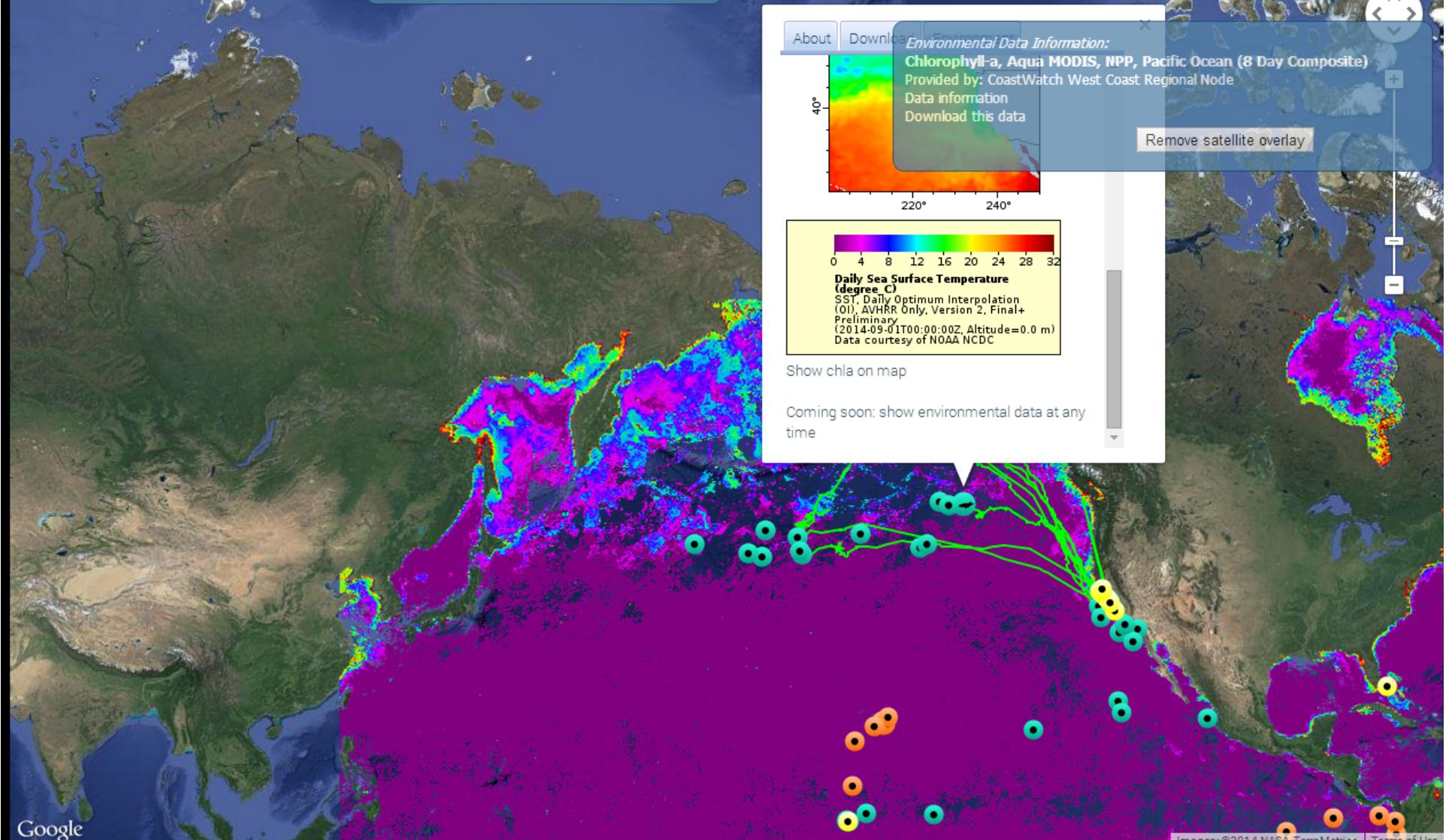
Quick Info 2

Comments/Questions?

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Data Menu →

Added Northern Elephant Seal tags deployed in 2014



Google

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Next Steps – Phase II

- Enhance database infrastructure
- Develop tools to integrate data from external users
- Improve compliance with IOOS standards
- Enhance metadata
- Develop documentation
- Establish Linkage with NODC for Permanent Archive of US telemetry