

**U.S. IOOS 2026 DMAC  
ANNUAL MEETING  
FINAL AGENDA  
June 2-4, 2026**

SILVER SPRING CIVIC BUILDING

One Veterans Place  
Silver Spring, MD 20910

For virtual connection details, please register via [Zoom here](#) to receive your personalized link to join.

**DAILY AGENDA:**

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<p><b><u>Tues (June 2):</u></b>            09:00 – 10:30 Presentations/Plenary            10:30 – 11:00 Break            11:00 – 12:05 Presentations/Plenary            12:05 – 13:05 Lunch            13:05 – 14:35 Breakout Discussions            14:35 – 14:50 Break            14:50 – 15:05 Breakout Report Outs            15:05 – 16:50 Presentations/Plenary            16:50 Daily Wrap            17:00 Adjourn Day 1            17:30 Happy Hour– Silver Branch            Lagerhaus &amp; Biergarten</p>	<p><b><u>Wed (June 3):</u></b>            09:00 – 10:25 Presentations/Plenary            10:25 – 10:55 Break            10:55 – 12:15 Presentations/Plenary            12:15 – 13:15 Lunch            13:20 – 14:50 Breakout Discussions            14:45 – 15:15 Break            15:15 – 15:30 Breakout Report Outs            15:30 – 16:40 Presentations/Plenary            16:40 Daily Wrap            16:50 Adjourn Day 2            18:00 See note about NOAA Fish Fry</p>	<p><b><u>Thu (June 4):</u></b>            09:00 – 9:55 Presentations/Plenary            9:55 – 10:25 Break            10:25 – 11:45 Presentations/Plenary            11:45 – 12:45 Lunch            12:45 – 14:45 Breakout Discussions            14:45 – 15:00 Break            15:00 – 15:15 Breakout Report Outs            15:15 Daily Wrap            15:30 Adjourn Day 3</p>

**Tuesday, June 2, 2026**

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**0830 Arrival, coffee and breakfast provided**

**0900 Introduction/Meeting Kickoff** (Micah Wengren and Mathew Biddle, IOOS)

**0910 US IOOS Office Updates** (Krisa Arzayus, IOOS)

**0930 OceansMap Case Studies: AI for Oil Spill Response and FloodMap: focused water level / flood prediction instance** (Jenna Ducharme and Andrew Menton, Tetra Tech)

**0945 A lightweight, efficient, and robust machine-learning model for automatic QA/QC flag detection** (Thanh-Dung Le, Texas A&M)

- Applying a latent space Joint Embedding Predictive Architecture to NOAA water-level data as a regression task, with a single generalized model trained across 50+ stations along the U.S. coast
- Using prediction error to flag anomalies for QA/QC

**1000 ML based method for water level gap filling based on nearby tide gauges and met conditions** (Philippe Tissot, Texas A&M)

- Gap filling of water level time series based on a nearby tide gauge station and local winds rather than backup sensor
- ML based method calibrating neural networks based on a coarse and fine grid hyperparameter tuning followed by nudging to the data surrounding the gaps. The performance is compared with other methods for 1,000 synthetic gaps per gap length ranging from minutes to many hours.

**1015 Performant data aggregation for interactive visualizations** (Brian Stone and Aidan Lewis, Axiom Data Science)

- Performantly bins and aggregates multi-dimensional data on arbitrary columns, including space, time, and depth, and allows for filtering and subsetting across any combination of columns using a well-known API.
- Brief overview of technologies used to create and add data to the service
- Demonstration of how the service is being used to create interactive visualizations

**1030 Break**

**1100 The improved and modernized Tidal Analysis Datum Calculator and Status on the NTDE/NSRS** (Matt Conlin, NOAA)

- This presentation highlights recent improvements to the Tidal Analysis Datum Calculator, a code- and web-based tool that facilitates computation of standard tidal datums from water level observations.
- The new Version 2 of the tool includes a Python API for simple integration into automated workflows, integrated QA/QC, and addition of new features such as inundation analysis.

**1115 Full Stream Ahead: Updates to NCEI Archiving of IOOS Data** (Kristen Sauby and Ana Krelling, NOAA)

- In April 2025, NCEI onboarded two new hires to facilitate IOOS data archiving. Since then, some RA data archiving pipelines have been restarted and more data are being archived.
- Other topics will include the NCEI cloud migration, updated metadata guidance, and information about archiving requirements.

**1130 ERDDAP™ Data Usage Tracking** (Melissa Smuck, NOAA)

- Overview of the Global Ocean Monitoring and Observing (GOMO) Program's current goals toward (1) improving the integrated accessibility of GOMO data through a federated ERDDAP and (2) understanding data value through usage tracking.
- Overview of potential data usage tracking solutions, including (1) Python scripts to process the internal ERDDAP log/ERDDAP metrics, or (2) AWS's native monitoring and logging ecosystem for an AWS-hosted federated ERDDAP

**1145 Cloud-Optimized DMAC Update** (Jonathan Joyce, Tetra Tech, and Shane St. Savage, Axiom Data Science)

- Describe the project mission around closing data delivery gaps, with a focus on cost-optimized workflows that can take on new data types through future efforts.
- Share the high-level cloud architecture, common technology stack with MODL, model data optimization progress, observational data next steps, and how the audience can engage.

**1205 Lunch (on your own)**

**1305 Breakout Discussions:**

**#1: ERDDAP™ & Cloud / ERDDAP™ and THREDDS search options using LLMs to help users find relevant data sets**

*Leads: Filipe Pires Alvarenga Fernandes and Fred Bahr, MBARI*

- CoastWatch ERDDAP cloud migration and an overview of ERDDAP development priorities concerning cloud and AI.
- Demonstrate ERDDAP and THREDDS using both conventional methods and the Model Context Protocol (MCP), followed by a discussion on MCP considerations.

Ellsworth Room

**#2: Strategic scoping and road-mapping for coordinated use of AI/ML tools**

*Leads: Hassan Moustahfid, NOAA; Henry Ruhl, CeNCOOS Jorge Brenner, GCOOS; Kelly Knee, Tetra Tech; Aijun Zhang, NOAA*

This session focuses on strategic road-mapping for the coordinated use of AI and Machine Learning (Traditional, Generative, and Agentic AI) across all IOOS subsystems, including observations, DMAC, modeling, governance, R&D, and education. We will align these efforts with the forthcoming NOAA AI strategy, the new AI Handbook, and the framework of NAO 216-128. Our goal is to identify priority AI integrations that streamline workflows and enhance our national ocean observing systems.

Spring Room

**#3: Addressing Tidal Datum computation needs**

*Leads: Matt Conlin, NOAA; Paul Fanelli, NOAA; David Wolcott and Minilek Hailegeberel*

This breakout session aims to provide technical assistance on tidal datums to the RAs, addressing any questions or lack of clear understanding on the topic. Also demonstrate a tool they can utilize to compute tidal datums for their stations. The proposed agenda includes a Datums 101 presentation, a demonstration of the updated Tidal Analysis Datum Calculator (TADC) Web-App and Python tool, and a dedicated Q&A session with technical experts.

Fenton Room

**1435 Break**

**1450 Breakout Report Outs**

**1505 RA Round Robin**

**1650 Daily Wrap**

**1700 Adjourn Day 1**

**1730 Happy Hour**

- [Silver Branch Lagerhaus & Biergarten](#): 8401 Colesville Rd #150, Silver Spring, MD 20910

## Wednesday, June 3, 2026

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**0830 Arrival, coffee and breakfast provided**

**0900 Welcome** (Micah Wengren and Mathew Biddle, IOOS)

**0910 OTN Update** (Jon Pye, Ocean Tracking Network)

- The broad adoption of OTN's open software solution for electronic animal tracking creating a globally interoperable ecosystem.
- Some publication and data mobilization pipelines developed on top of this ecosystem to assist researchers in getting their data to where it needs to be.

**0925 ATN Update** (Thomas Farrugia, AOOS)

- Overview of the U.S. Animal Telemetry Network, its Data Assembly Center and current actions to open access to valuable movement data streams.
- How is ATN, along with its partners, helping to remove blockers to facilitate access to standardized, interoperable data and data products.

**0940 Multi-sensor tag metadata template for ATN** (Alison Stimpert, Moss Landing Marine Laboratories)

- A metadata template and data processing protocols are being developed for archiving multi-sensor archival tag data
- Large file sizes, multiple sampling rates within a tag, and lack of geographic boundaries distinguish this data type and introduce challenges for standard archiving protocols

**0955 ONMS Sound and PACM: Foundations for PAM from raw data to metrics and co-designed products** (Lindsey Peavey and Rebecca VanHoeck, NOAA)

- Passive acoustic monitoring groups across NOAA have invested in developing streamlined data workflows and intuitive data reports to summarize trends in ocean soundscapes
- This presentation will highlight how synergies between NOAA Fisheries data management developments and the Office of National Marine Sanctuaries Sound reporting have resulted in an efficient process for making long-term summaries of soundscape trends publicly available.

**1010 PAMHub: Integrating Ambient Sound into the Northeast Ocean Observing System** (Jackie Motyka, NERACOOS and Cheryl Morse, Tetra Tech)

## 1025 Break

### 1055 Update to CETCEAN and Sea Turtle Atlas (Megan Howson, GCOOS)

- Both CETACEAN Data Portal and Sea Turtle Atlas are live and contain population, anthropogenic and environmental datasets
- Developed on a GIS Hub infrastructure both portals were developed for user accessibility and contain several analysis tools and data accessibility tiers.

### 1110 NERACOOS Data Products for Operational Users (Tom Shyka, NERACOOS and Riley Young Morse, GMRI)

- Overview of the Mariners' Dashboard, an operational data product designed for commercial and recreational mariners, including a summary of the user-centered process (workshops, surveys, one-on-one interviews, and ongoing feedback) used to define requirements, functionality, and data integration.
- Update on recent product enhancements and the core IOOS technologies and innovations that underpin the dashboard's data management, integration, and delivery.

### 1125 Met Ocean Data Link (MODL) project update (Tom Shyka, NERACOOS and Riley Young Morse, GMRI)

- Overview of the MetOcean Data Link project to develop a standards-based system for ingesting, managing, and sharing metocean data from offshore operations.
- Update on expanded industry engagement, formation of a Strategic Advisory Committee, and progress with integration of data from offshore assets in operation
- Update on development of core system architecture components (e.g., asset manager/metadata tool, data ingest workflows, data access tools) and ongoing implementation plans for operational system

### 1140 NDBC Updates to Auto QC Limits and Future Plans (Dawn Petraitis, NOAA)

- Summary of the updated NDBC auto QC processes and QC limits for buoys and C-MAN stations.
- Overview of our prototype AI implementations for quality control.

### 1155 Sanctuary Watch: Creating Data Pipelines from IOOS Products to the SW Web Platform (Jai Ranganathan, NOAA)

- If Sanctuaries and IOOS can co-develop Sanctuaries-focused indicators, based upon IOOS products, it will lead to huge wins for both IOOS and Sanctuaries.
- This co-development process is a relatively low lift in terms of effort and mainly requires small changes in the workflow of how IOOS creates its data products.

## 1215 Lunch (on your own)

## 1315 Breakout Discussions:

### #1: Animal Tracking (OTN/ATN)

*Leads: Ryan Logan, NOAA; Ryan Freedman, NOAA; Megan McKinzie, MBARI; Jon Pye, Ocean Tracking Network; Thomas Farrugia, AOOS*

This session will discuss several topics related to animal movement and oceanographic data, including adding environmental data to animal presence data, quality control and dissemination of animal borne sensor data, and advancements in augmenting digital twins with animal distribution data. We will also discuss animal movement data flows and archiving animal tracking data at NCEI.

Spring Room

## **#2: NDBC & Updates to Auto QC Limits and Future Plans**

*Leads: Ian Sears, NOAA;*

To share National Data Buoy Center (NDBC) future operational plans, Quality Control (QC) advancements, and IT infrastructure roadmaps with the Integrated Ocean Observing System (IOOS) community to ensure transparency and align NDBC's trajectory with regional partner needs.

Ellsworth Room

### **1445 Break**

### **1515 Breakout Report Outs**

#### **1530 Data Assimilation Pipeline for Novel Observations** (Enrico Milanese, WHOI and Dan Amrhein, UCAR)

- Presenting the Novel Ocean Observations Data Pipeline Workshop: its goals, format, and why it matters to the IOOS community.
- Showing how the workshop will help build pipelines for glider and other novel ocean observations so they can be readily used in downstream use cases such as data assimilation and model-data comparison.

#### **1540 Update on the Canadian Integrated Ocean Observing System** (Jordan Watson, CIOOS Pacific)

- Update on recent expansion of CIOOS as a national entity
- Highlight of new CIOOS data tools / products

#### **1555 GLOS DMAC System updates: Front to back with Seagull and Seagull Coast** (Joe Smith, Sneha Bhadbhade, and Mike Sutherland, GLOS)

- Back-end data migration to Databricks, with FastAPI interface
- Development and soft-launch of Seagull Coast mobile app for Great Lakes water safety

#### **1610 NANOOS Transect Tool for visualizing multi-depth model fields along a user-selected transect or at a point** (Troy Tanner, NANOOS)

- Demonstrating the new NVS Transect tool which creates interactive plots from models along specified routes.

#### **1625 Handling big data challenges in delivering near real time, IFCB-derived HAB Classification concentration data** (Josh Rhoades, Axiom Data Science)

- Lessons learned from serving the first 100 million HAB species classifications.
- Performance optimizations, insights, and compromises on the way to sub-second response times.

### **1640 Daily Wrap**

**1650** **Adjourn Day 2**

**1800** **NOAA Fish Fry** ([Tickets](#) sold out)

\*We wanted to share that the NOAA Fish Fry occurs this evening. This is not a DMAC-sponsored event, but we know some members of the community may be interested in attending and wanted to provide the information.

## Thursday, June 4, 2026

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**0830** **Arrival, coffee and breakfast provided**

**0900** **Welcome** (Micah Wengren and Mathew Biddle, IOOS)

**0910** **NOS Core Model Evaluation Overview** (Steve Smith, NOAA)

- Overview of the National Ocean Service (NOS) core model evaluation objectives, requirements regarding observational data transmission, and cloud infrastructure
- Highlight further potential for Regional Associations (RAs) alignment with the NOS Model Improvement Plan (MIP).

**0920** **IOOS Water Level Workshop Follow Up** (Gabrielle Hillyer, IOOS Association)

- This presentation will outline key takeaways, key actions, and future next steps from each of the recent IOOS IRA Workshops, including Water Level and Plankton Data.
- It will also articulate how these efforts fit into broader IRA T2 goals, and how folks can get involved in this work in the future.

**0930** **IOOS RA Plankton / HAB workshop Follow up** (Gabrielle Hillyer, IOOS Association).

- This presentation will outline key takeaways, key actions, and future next steps from each of the recent IOOS IRA Workshops, including Water Level and Plankton Data
- It will also articulate how these efforts fit into broader IRA T2 goals, and how folks can get involved in this work in the future.

**0940** **Automating Compliant netCDF File Creation for GDAC Data Submission: Bridging IOOS1-2, GDAC3-0, ACDD3-0, and OG1-0 Standards** (Leila Baghdad-Brahim and Sarina Mann, NOAA)

- **Streamlining GDAC-compliant netCDF creation:** GDAC developed an automated workflow that helps data providers generate netCDF files aligned with IOOS 1-2, GDAC 3-0, ACDD 3-0, and OG 1-0 requirements, reducing manual effort and improving the likelihood of passing available compliance checks.
- **Improving metadata completeness and correctness:** By using JSON-based metadata templates and an automated file assembly script, users can consistently populate required variable names, attributes, and conventions, supporting 100% metadata completeness and more reliable GDAC submission readiness.

**0955** **Break**

**1025 Metadata Asset Management Tool** (Brian Stone and Shane St. Savage, Axiom Data Science)

- The asset manager is a highly reusable, low code tool designed to manage metadata for various asset types, simplifying data collection, and reducing the need for developer intervention when new assets are created or updated.
- Demonstration of how the tool is used and discussion of future plans

**1040 Data Management of Uncrewed Surface Vehicle (USV) Data: From NOAA Support to a Dedicated GDAC for USVs** (Ellen Koukel, University of Washington)

- PMEL's current role and workflow for USV data management and delivery
- Introducing SUN Fleet and the implementation of a SUN Fleet GDAC

**1055 IOOS HFRNet Elevation from UAT to PROD in the NCCF** (Inger Kittle, NOAA)

- Highlights of services and key improvements made during the first year of operating the HFRNet DAC in the NCCF
- Lessons learned during the transition to full operations

**1110 CORA Project Update - Final products from GEC and Pacific progress** (Analise Keeney, NOAA and Kelly Knee, Tetra Tech)

- Highlighting use cases & application of CORA's Gulf, Atlantic, and Caribbean datasets
- Share insights into Pacific modeling, and advancements in data optimization techniques.

**1125 Standardizing ERDDAP terminology and CF standards across RAs for WL data and metadata** (Taylor Borgfeldt, AOOS)

- Evaluate inconsistencies in ERDDAP water level terminology and metadata across IOOS Regional Associations that limit interoperability and data discovery.
- Develop recommendations to align ERDDAP datasets with CF conventions and IOOS standards for more consistent, machine-readable WL data and metadata.

**1145 Lunch (on your own)**

**1245 Breakout Discussions**

**#1: Plankton Data Flows - Marine Life Data Cluster**

*Lead: Laura Brenskelle and Matt Biddle, NOAA; Clarissa Anderson, UCSD; Thomas Farrugia, AOOS; Jackie Motyka, NERACOOS; Henry Ruhl; MBARI; Iwen Su, Axiom Data Science; Sheri Schwartz, Tetra Tech; Marcus Ogle, GCOOS*

This breakout session will review the high-level plankton data flow discussed at the April IRA EcoObs workshop, dive into RA-specific example data flows, and highlight a few important data use cases and their metadata requirements, specifically the GOOS Essential Biodiversity Variables relating to plankton and NASA PACE validation. The goal of the breakout is to highlight pain points in current data flow processes, determine the entities responsible for different parts of the data flow, identify solutions to pain points that can serve different observing technologies (with a focus on image and microscopy-based methods), and improve documentation on the IOOS Marine Life Data Network GitHub website regarding plankton data.

Ellsworth Room

## **#2: Operational Modeling**

*Lead: Breanna Vanderplow, NOAA; Lucila Bloemendaal, NOAA*

This session will cover advances in operational oceanographic models and model development tools. The presentations and discussions aim to share approaches, best practices, and lessons learned from operational model developments, focusing on AI, cloud computing, and novel evaluation and visualization tools. The session will also feature a cross-cutting presentation on NOAA's Project EAGLE, a demonstration environment that enables testing of AI weather models against existing NOAA weather models.

Spring Room

**1445 Break**

**1500 Breakout Report Outs**

**1515 Daily Wrap**

**1530 Meeting Adjourn**