

U.S. IOOS Advisory Committee

In-person Public Meeting
February 11 & 12, 2020

Consortium for Ocean Leadership
1201 New York Avenue, NW
Washington, DC

Join Zoom Meeting
<https://zoom.us/j/7215559581>
Meeting ID: 721 555 9581
Dial: 888-407-5039
Password: 4150-9839

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U.S. IOOS Advisory Committee Winter Meeting
Washington, D.C. Logistics Information Guide
February 11-12, 2020

Staff Contact:

Krisa Arzayus, (c) 240-429-8455 Becca Derex - (c) 224-622-3504 Marnie Brown - (c) 301-742-8876

Hilton Garden Inn *

815 14th Street N.W.
Washington, D.C., 20005
202-783-7800 [Map](#)

★ *Hotel lobby and restaurant undergoing renovations, and they hope to be finished prior to your arrival, but please be aware they may still be adding some final touches and the front desk will advise you of any necessary updates. (The room and fitness center renovations have been completed.)*

Meeting Location:

Consortium for Ocean Leadership
1201 New York Avenue, NW, 4th Floor Conference Rooms AB&C
Washington, DC 20005 [Map](#)

Dial-in Information: ZOOM <https://zoom.us/j/7215559581>
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Breakfast: Breakfast will be on your own both days. The hotel restaurant has breakfast available and there is a wide variety of coffee shops and restaurants near the hotel.

Lunch: Federal regulation prevents IOOS from paying for meeting food, we are going to try our luck at online ordering and have everyone pay for their own meals:

Tuesday Working Lunch:

[The Best Sandwich Place](#) -

Place your order online for 11:30 pick-up and pay individually. We will pick all the orders up together.

Wednesday Lunch:

[Devon & Blakely](#)

Marnie has set-up an account - we will place one order for delivery and you can pay the IOOS staff directly via electronic payment or cash.

Log-in info: Marnie.Brown@noaa.gov PW: NOAA-IOOS

Coffee, tea, and water will be available throughout the meeting. (Thank you to the staff of the COL)

Group Dinner: Tuesday, February 11, 2020 6:15 p.m.

Post-meeting dinner at Bobby Van's Grill (Located in the COL building)

[Bobby Van's Grill](#) 1201 New York Ave NW, Washington, DC 20005

(202) 589-1504 (Reservations under Marnie Brown NOAA)

**U.S. IOOS Advisory Committee
In-Person Public Meeting
February 11 & 12, 2020**

Monday, February 10

Hotel: Hilton Garden Inn
815 14th Street N.W.
Washington, D.C., 20005
Phone Number: 202-783-7800

Tuesday, February 11 - AM Session

Consortium for Ocean Leadership
1201 New York Avenue, NW, 4th Floor Conference Rooms AB&C
Washington, DC 20005

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8:30 - 9:00 am	Coffee and Gather (Breakfast on your own)
9:00 - 9:15 am	<i>Meeting Welcome</i> Krisa Arzayus, IOOS Advisory Committee Designated Federal Officer and Deputy Director, U.S. IOOS Office
9:15 - 9:25 am	<i>Goals of the Meeting</i> Scott Rayder, Chair, IOOS FAC
9:25 - 9:45 am	<i>IOOS Program Director Remarks</i> Carl Gouldman, Director, IOOS Program Office
9:45 - 10:45 am	<i>IOOS on the Hill: Legislative Perspectives</i> <i>Panelists Pending</i>
10:45 - 11:00 am	Break
11:00 - 12:00	<i>4 New NOAA Strategies:</i> UxS, AI, 'Omics, and Cloud Computing Admiral Tim Gallaudet, PhD

Tuesday, February 11 - PM SESSION

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12:00 - 1:40	<i>Working Lunch: Global Observing (Group Lunch Order)</i> David Legler, IOOC Co-Chair <ul style="list-style-type: none">• <i>GOOS, International Coordination</i> Laura Lorenzoni, IOOC Ex Officio Member <ul style="list-style-type: none">• <i>Outcomes from Ocean Obs '19</i>
1:40 - 2:00	Break
2:00 - 3:00	<i>Federal Support for IOOS : Executive Branch Perspectives</i> Deerin Babb-Brott, OSTP Nicole LeBoeuf, NOAA John Haines, USGS
3:00 - 3:20	Break
3:20 - 4:00	<i>NOAA's Approach to Observing System Requirements Management</i> Martin Yapur, NOAA Technology, Planning, and Integration for Observation
4:00 - 4:45	<i>Carrying forward the FAC Workplan</i> Scott Rayder, Chair, IOOS FAC
4:45 - 5:00	Public Comment
6:15	<i>Group dinner</i> <u>Bobby Van's Grill</u> 1201 New York Ave NW, Washington, DC 20005 (202) 589-1504 (Located in the COL building)

Wednesday, February 12 - AM Session

Consortium for Ocean Leadership
1201 New York Avenue, NW, 4th Floor
Washington, DC 20005

Dial-in Information: ZOOM
<https://zoom.us/j/7215559581>
Meeting ID: 721 555 9581
Dial: 888-407-5039
Pass: 4150-9839

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|----------------------|--|
| 8:30 | Coffee and Gather (Breakfast on your own) |
| 8:45 - 9:00 | Welcome back: Review of Day 1

Krisa Arzayus, IOOS Advisory Committee Designated Federal Officer and Deputy Director, U.S. IOOS Office |
| 9:00 - 9:30 | FY19 - FY20 IOOS Budget Overview

Carl Gouldman, Director, U.S. IOOS |
| 9:30 - 11:30 | Executing FAC Priorities: Part 1

Scott Rayder, Chair, IOOS FAC <ul style="list-style-type: none"> ● 2 Preparatory Groups present their work to date on executing FAC Priorities. Work should be presented as recommendations or research efforts ● This session will include “Vision and Strategy” and “Alignment of Messaging”, which will be combined moving forward. ● FAC members and the public can weigh in on progress, deliverables, and the future direction of the Preparatory Groups. |
| 11:30 - 12:30 | Lunch Break (Group Lunch Order) |
| 12:30 - 2:30 | Executing FAC Priorities: Part 2

Scott Rayder, Chair, IOOS FAC <ul style="list-style-type: none"> ● 2 Preparatory Groups present their work to date on executing FAC Priorities. Work should be presented as recommendations or research efforts ● This session will include “Partnerships” and “Requirements” ● FAC members and the public can weigh in on progress, deliverables, and the future direction of the Preparatory Groups. |
| 2:30 - 2:45 | Public Comment Period |
| 2:45 | Meeting is adjourned |

Setting the stage for IOOS Advisory Committee 2019

Carl Gouldman, U.S. IOOS Office Director

August 21, 2019



Outline

- Program overview
- Observing, Data Management, Modeling and Prediction
- Stakeholder Driven Approach
- Recent Successes
 - Certification of IOOS Regional Associations
 - 15 year Budget story
 - FY19 Highlights
- FY19 & FY20 Draft Topics for IOOS Advisory Committee

U.S. IOOS: Program Overview

Partnership effort that leverages dispersed national investments to deliver ocean, coastal and Great Lakes data relevant to decision-makers.

Global Component

US contribution to Global Ocean Observing System (GOOS)

1 of 15 Regional Alliances of GOOS



The Global Ocean Observing System



National Component

17 Federal agencies



Regional Component

11 Regional Associations

Stakeholder driven

Academia, state/local/tribal government, private industry

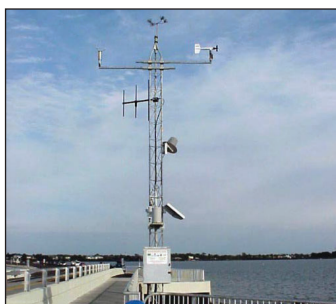


IOOS Observing Assets

Coastal Moorings



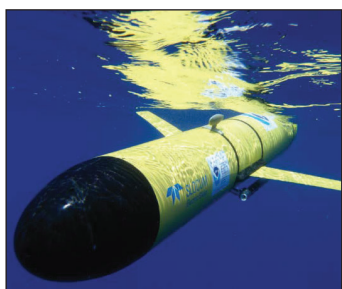
Shore Stations



HF Radar



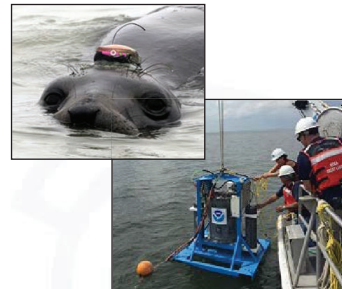
Sub-surface gliders



Wave Buoys



Animal Telemetry,
Marine Biodiversity



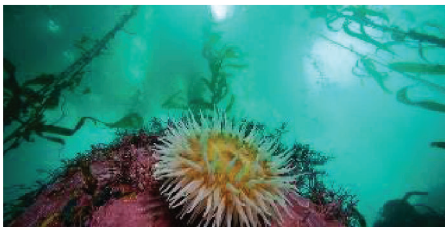
Integrated Open Data → Prediction & Forecasts



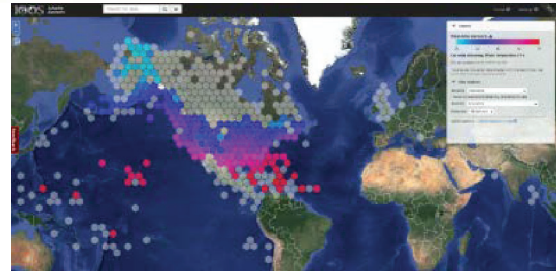
Regional Portals: 11 RA portals integrate data at a local level and provide tailored products for stakeholders



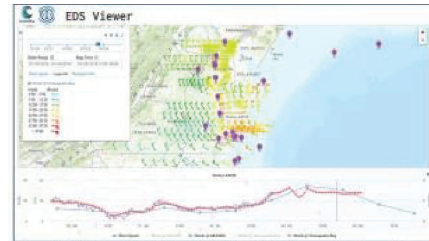
www.ioos.us
a central
portal of portals



MBON: Marine Biodiversity portal – data supporting ecosystem monitoring



Sensor Map: a 2 week cache of real-time observations from 108 providers



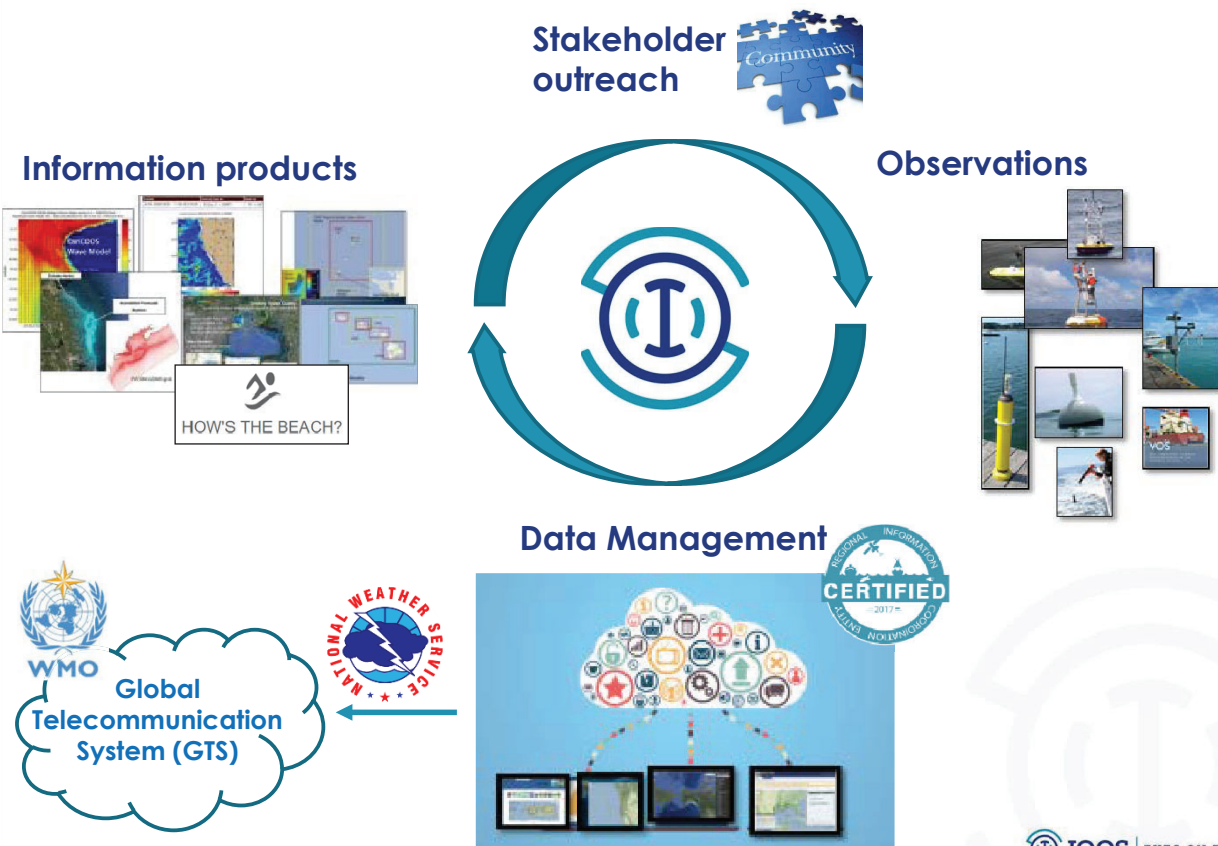
Blizzard 2016: CBOFS winds at 1/23 17:00 EST. Time-series of model output and buoy observations (1/20 - 1/23)

EDS: Visualize and access model hindcast/forecast information and compare to observations

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 IOOS | EYES ON THE OCEAN™

IOOS Regions meet societal needs



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 IOOS | EYES ON THE OCEAN™

IOOS Strategic Plan

Vision - Improve lives and livelihoods with ocean, coastal, and Great Lakes information

Mission - To produce, integrate, and communicate high quality ocean, coastal and Great Lakes information that meets the **safety, economic, and stewardship needs** of the nation.



Five Strategic Goals:

Goal 1: Sustain long-term, high-quality observations of ocean, coastal, and Great Lakes environments to address local, regional and national needs.

Goal 2: Deliver standardized, reliable, and accessible data.

Goal 3: Support model predictions that address a wide range of user requirements.

Goal 4: Provide integrated, user-driven products and tools.

Goal 5: Increase the reach and effectiveness of IOOS through partnerships, stakeholder engagement, and Enterprise excellence.

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https://cdn.ioos.noaa.gov/media/2018/02/US-IOOS-Enterprise-Strategic-Plan_v101_secure.pdf



Certification of all non-federal IOOS Regions

Integrated Coastal and Ocean Observation System Act of 2009 (ICOOS Act)

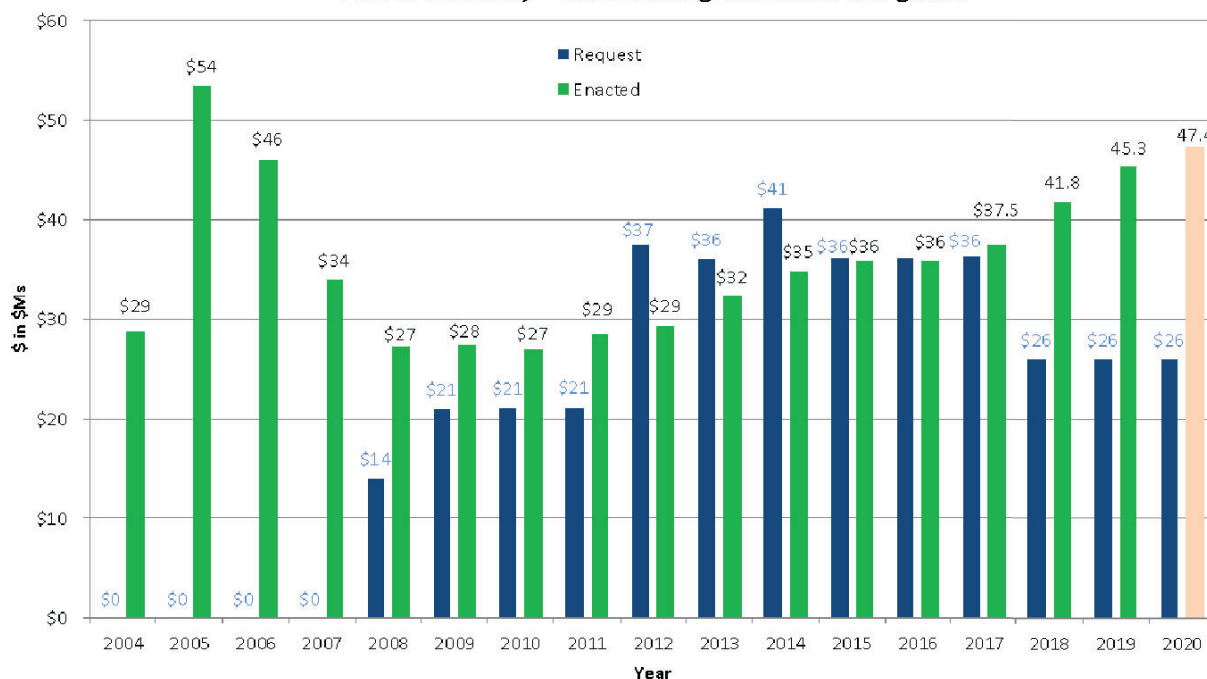
All 11 IOOS Regions are now certified! (2018)

1. IOOC defined high level criteria
2. Conveys formal recognition of IOOS Regional Associations
3. Extends civil liability coverage for data use
4. Establish minimum criteria for how a RICE operates
5. Adherence to data management best practices
6. Enhance delivery and quality of data and information
 - Re-certification of regions will begin in 2020
 - Program Office developing process for recertification



U.S. IOOS Enacted and President's Budgets FY12-20

NOS IOOS Request & Appropriation History
Part of the Story – not including 'backbone and global'



NOAA National Ocean Service IOOS

Navigation, Observations, and Positioning: 'National IOOS' component FY19 Omnibus \$6.8M & 'Regional IOOS Observations' \$38.5M [\$1.5M Reg. Ocean Partnerships]

Estimated Enacted levels are 'post rescission' totals for each year / 'Request' = the President's Budget Request
FY20 House Mark is first, next is Senate Mark, then Conference...

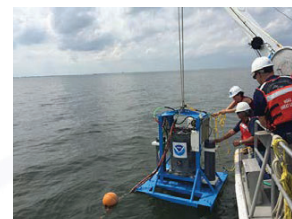
FY2019 IOOS Highlights

- **Blue Economy**
- **Customer focus and stakeholder outreach**
- **ICOOS Act reauthorization**
- **NOAA Weather Act & NOAA Water Initiative**
- **CENOTE Act 2018 (Commercial Engagement Through Ocean Technology Act of 2018)**
- **IOOS Advisory Committee**

- **Filling gaps +\$7.5M:** Surface Currents, Gliders, Streamlined Access to observation information
- **Biology and Harmful Algal Bloom Observing**
- **Interagency - ATN, MBON, Sound, etc.**

Research and Development

- **Ocean Technology Transition** – new FFO ~Sept. 2019 for award in FY2020
- **Coastal and Ocean Modeling Testbed COMT** - Coastal / Ocean /Water Modeling, Forecasting, and Prediction
- **ACT** workshops for IOOS RAs and OAR Labs and Cooperative Institutes
- **Department of Energy** Ocean Observing prize competition

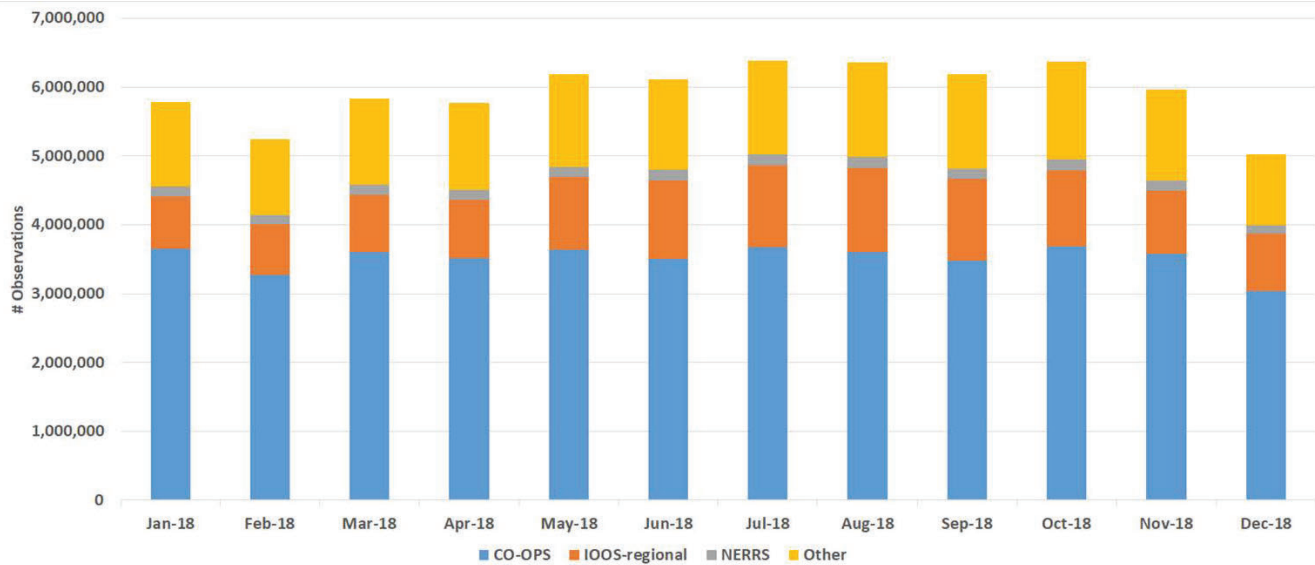


2019/2020 topics for IOOS Advisory Committee

- Consider issues, challenges, and opportunities in feedback from questionnaire
- Advise us on how to strengthen the federal partnerships between agencies, and foster deeper engagement across agencies
- We have a huge mandate and limited resources: Where does the Committee see as biggest future priorities for ocean observing?

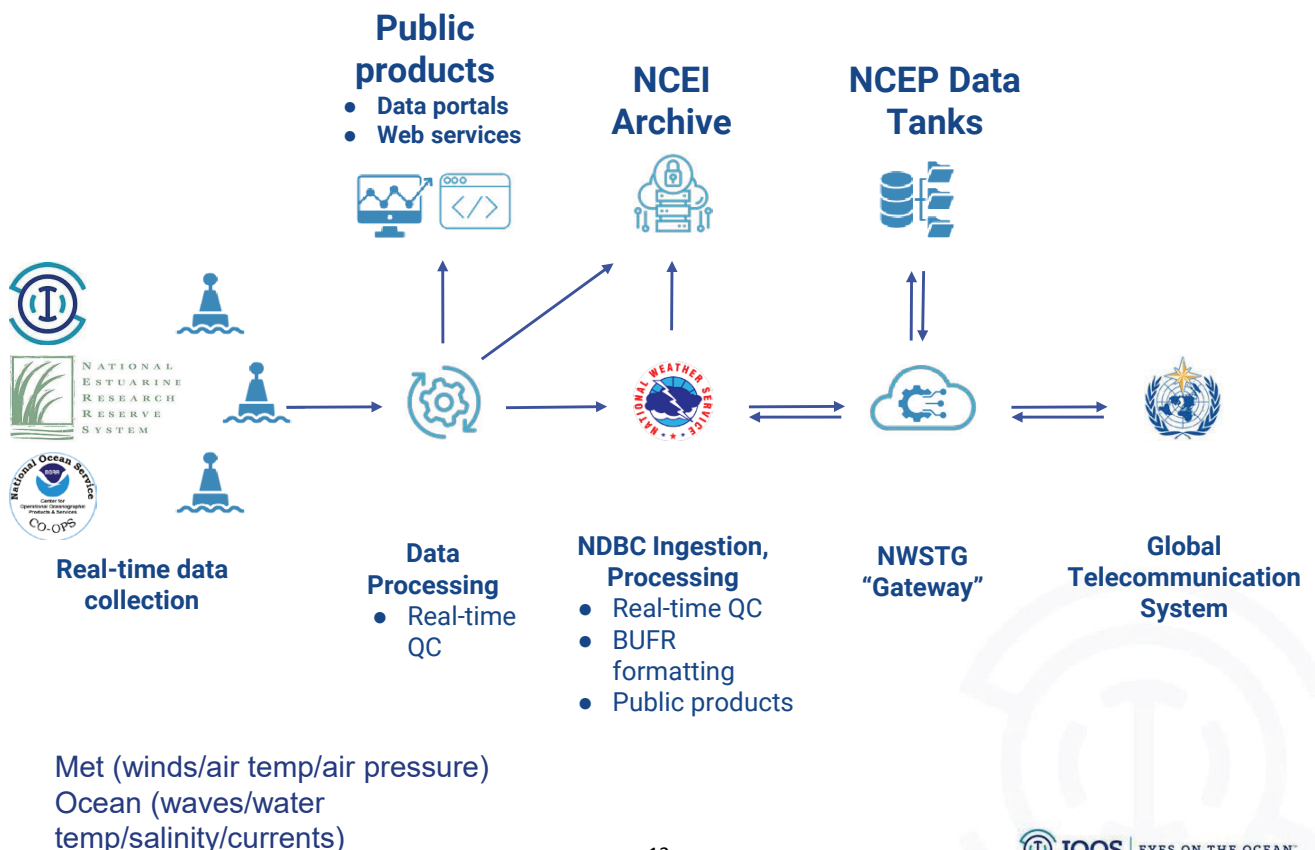
Back up slides

NOS real-time marine observations delivered to GTS via NDBC



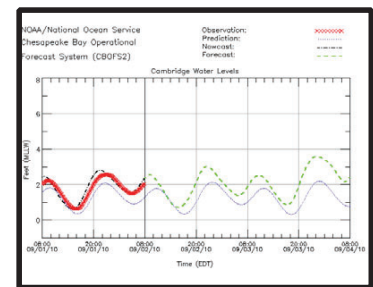
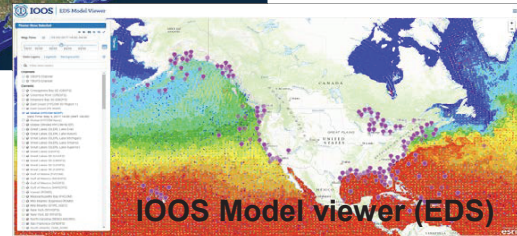
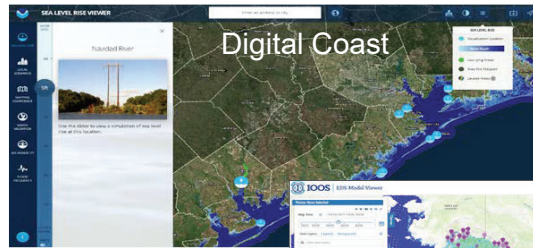
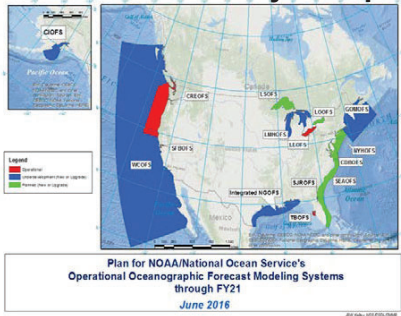
NOS accounts for 78% of all met-ocean observations going to the Global Telecommunications System (GTS) via National Data Buoy Center (NDBC)

MetOcean Data Flows



Modeling and Decision Support Services

Operational Forecast System plans



- Networks, experience, and processes to engage the public
- Core observations that characterize coastal water level and quality
- Coordinate with EPIC and provide model infrastructure and expertise to predict how the ocean will change
- Coastal and Ocean Modeling Testbed

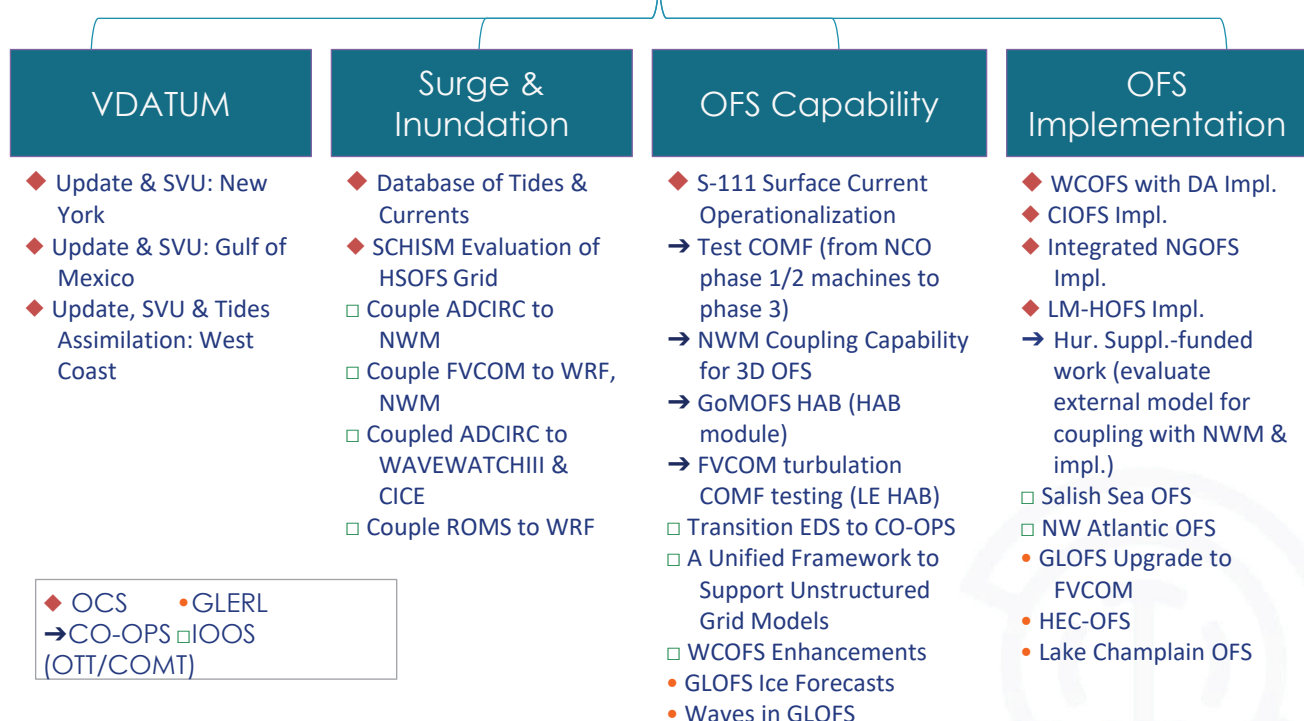
CO-OPS Nowcast/Forecast

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IOOS EYES ON THE OCEAN™

Integrate NOS Model Development Process

NOS Coastal Modeling Development Manager



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IOOS EYES ON THE OCEAN™

Weather Research and Forecasting Innovation Act 2017

PUBLIC LAW 115-25—APR. 18, 2017
Title III / Sec. 301(a)(2)

INTEGRATION OF OCEAN AND COASTAL DATA FROM THE INTEGRATED OCEAN OBSERVING SYSTEM.—In National Weather Service Regions where the Director of the National Weather Service determines that ocean and coastal data would improve forecasts, the Director, in consultation with the Assistant Administrator for Oceanic and Atmospheric Research and the Assistant Administrator of the National Ocean Service, shall—

(A) integrate additional coastal and ocean observations, and other data and research, from the Integrated Ocean Observing System (IOOS) into regional weather forecasts **to improve weather forecasts and forecasting decision support systems**; and

(B) support the development of real-time data sharing products and forecast products in collaboration with the regional associations of such system, including contributions from the private sector, academia, and research institutions to **ensure timely and accurate use of ocean and coastal data in regional forecasts**.

(C) support increasing use of autonomous, mobile surface, sub-surface, and submarine vehicle ocean and fresh water sensor systems and the infrastructure necessary to **share and analyze these data in real-time and feed them into predictive early warning systems**.
(C was added with NIDIS reauth. Act S2200 in 115th Cong.)

Also see ICOOS Act of 2009

https://cdn.ioos.noaa.gov/media/2017/12/Public_LawNo111-11HR-146_-PassedSigned_033009.pdf

Senate ICOOS Act Reauthorization Bill S. 914

<https://www.congress.gov/116/bills/s914/BILLS-116s914is.pdf>



U.S. Glider Network

FY18 (Increase to fill gaps +\$2M)

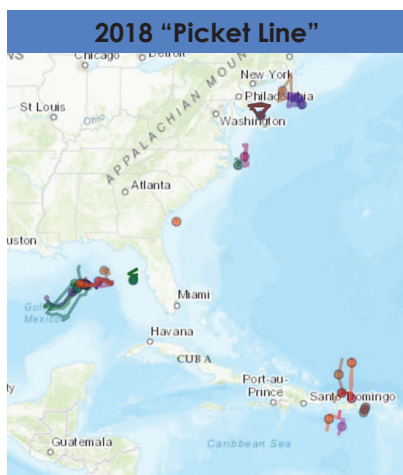
Deployments: Picket Line, HAB/Marine Mammal Monitoring, CalCOFI Lines, SAB Shelf work.

Post-Doc: Model comparisons for hurricane intensity work

DAC: Navy glider data made public, Improved QA/QC, IOOS \$\$
7,047 Glider Days 137 Glider Deployments

Navy Partnership: 30+ Gliders available to the nation. Navy gliders increased available ocean profile data 1,000 fold in USVII!

NOAA Navy MOU for glider support to hurricanes 2018-2023



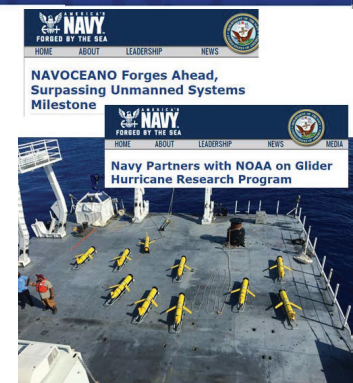
FY19 (Increase to fill gaps + \$2.5M)

International: "Best Practices" Workshop, Global Data Synchronization

National: Glider coordination plan

DAC: Support New Variables, Improve Data Flows

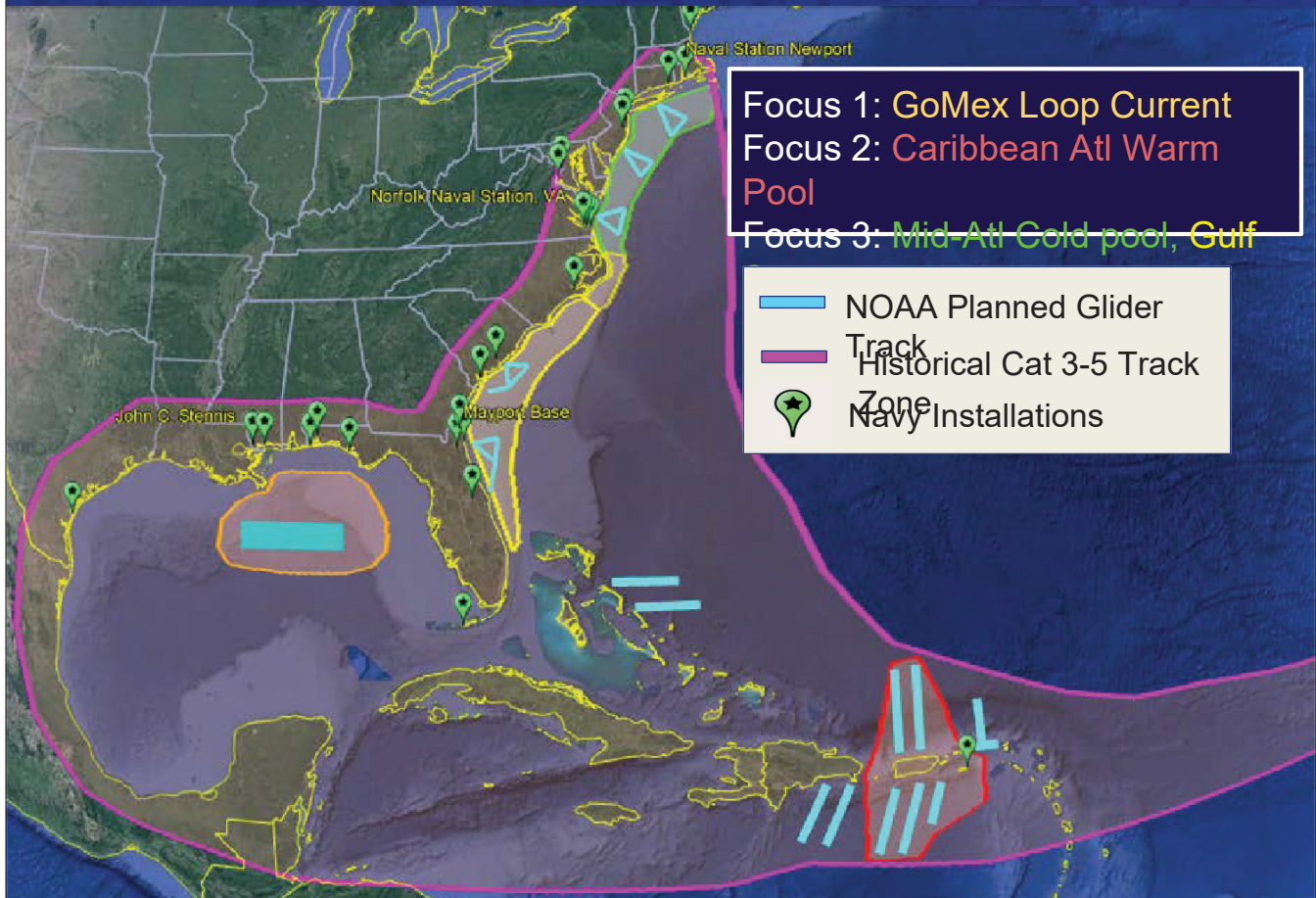
Impact Assessments: Investigate glider data impacts on operational models



<https://gliders.ioos.us/>



2019 Observing Scheme (Jul-Oct)



U.S. Animal Telemetry Network (ATN)

FY18 Accomplishments and Funding

Three Workshops: GCOOS, PACIOOS, West Coast (NANOOS/CeNCOOS/SCCOOS)

Transitioned ATN DAC from research environment to operational location - Axiom

Hired Data Coordinator to be the primary interface between telemetry community and ATN DAC; posted at CeNCOOS

Animal Telemetry Baseline infrastructure support: Two regional acoustic network Data Wranglers (FACT & ACT); Georgia Coastal Acoustic Receiver Array; Argos satellite fees payment program; Develop Next generation animal movement analysis tools; Satellite/Acoustic Telemetry Asset Inventory

\$1.35M Total investment from ONR, BOEM, NOAA



U.S. Animal Telemetry Network (ATN)

FY19 Plans and Funding

Greater stakeholder interaction and advocacy

Increase number of federal agencies supporting ATN and using DAC management capabilities for PARR compliance

Expand multi-agency collaborative baseline observations and infrastructure support

Expand and promote the use of animals as biological sensors

Innovative analytical and visualization tools & data products

Anticipated FY-19 total funds ~\$1.45M

Next Steps

Complete Workshop reports; Distill & combine all workshop conclusions into actionable items

Maintain strong collaboration with MBON to implement a sustained IOOS Bio-observing component



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 **IOOS** | EYES ON THE OCEAN™

National Coastal Ecosystem Moorings

FY18 Accomplishments

Workshop held March 2018

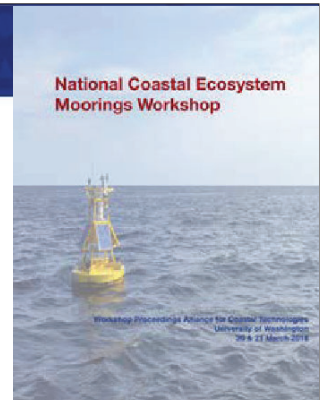
Community of experts from academia, private industry, and federal agencies (NOAA, EPA, BOEM)

Produced recommendations to define coastal ecosystem moorings

Three-tiered mooring approach outlining levels of measuring requirements

Discussed best practices for mooring deployments, operations and maintenance

Report available: http://www.act-us.info/Download/Workshops/2018/Ecosystem_Mooring_Workshop_Report.pdf



FY19 Next Steps

OceanObs'19 - CWP (*Coastal Mooring Observing Networks and their Data Products: Recommendations for the Next Decade*) and engagement with community to continue dialogue on moorings

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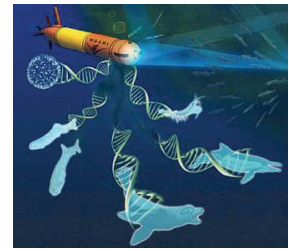
16

 **IOOS** | EYES ON THE OCEAN™

U.S. Marine Biodiversity Observation Network (MBON)

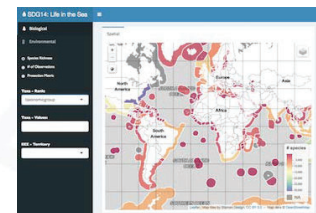
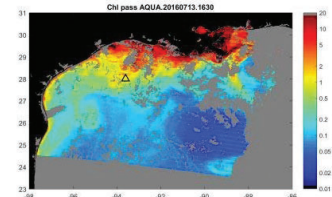
FY18 Accomplishments and Funding

eDNA best practices and demonstrations, including in AUVs
 MBON remote sensing-based seascapes products launched at CoastWatch
 Ongoing development of applications and 'infographics' for National Marine Sanctuary managers and regional Integrated Ecosystem Assessment (IEA) teams
 \$2.7M total investment from NOAA, NASA and BOEM



FY19 Plans and Funding

New projects to be announced in Summer 2019
 Partnership with NOAA, NASA, BOEM + new partner ONR;
 working towards a unified MBON-ATN and joint FFO in FY22
 Anticipate \$1.5-2M per year for multiple projects
 Oceanography special issue: MBON methods & technology



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FY2019 IOOS PO Highlights

IOOS Advisory Committee - new members and new chair

NOAA Weather Act – weather and water prediction

Blue Economy – innovation is boosting our **blue economy**

Modeling: through COMT - Revolutionize Water Modeling, Forecasting, and Prediction – Wx Act 2017 = NOAA priority!
 IOOS in key role for community approaches.

Ocean Technology Transition – 2 new projects – geographic balance – late summer 2019 for next FFO for award in FY2020

IOOS partnering and leveraging – Ocean Acidification Program, Marine Biodiversity Observation Network, Animal Telemetry Network, National Weather Service, National Ocean Service, Regional Ocean Partnerships

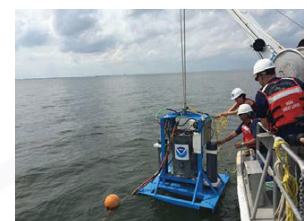
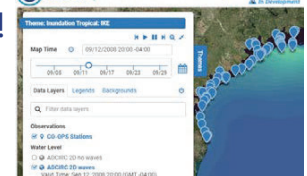
Filling IOOS gaps

FY19 \$7.5M gap filling

ICOOS Act reauthorization



IOOS Coastal and Ocean Modeling Testbed Viewer



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Ocean Technology Transition Program

FY18 (\$2.5M)

3 ongoing projects

Lake Erie HABs/Hypoxia (GLOS)
West Coast HABs (UCSC/
SCCOOS/CeNCOOS)
Gulf of Maine Lobster Industry
(NERACOOS)

2 new projects

MARACOOS/U of Delaware [Data
Integration and Web-based
Model Validation Tool for NOAA
CO-OPS]
U of Notre Dame [Building Coupled
Storm Surge and Wave
Operational Forecasting
Capacity for Western Alaska]

Bio data pilot 'seed' projects

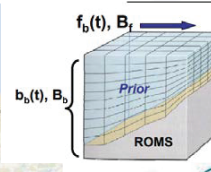
Submaran ASV/UUV deployment



FY19 (~\$2.6M)

4 ongoing projects & new call for proposals

Lake Erie HABs/Hypoxia,
West Coast HABs
MARACOOS/U of Del,
U of Notre Dame/Alaska



25

<https://ioos.noaa.gov/project/ocean-technology-transition/>



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Functional Data Assembly Center Activities



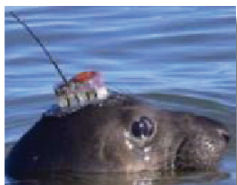
• Underwater Profiling Gliders

- ~ 3 national formats for web dissemination → 1
- Community building (Canada, IMOS, EGO, IOOS, others?)
- Native ingest tools for 3 glider types – standardize at the point of collection
- Sort out GTS distribution



• High Frequency radar (HFR)

- Sort out GTS distribution
- Standard netCDF format for radials
- Continue to expand global HFR



• Animal Telemetry Network

- Acoustic and Satellite Tag standard
- Encourage data sharing
- Regional to national network with global extensions



Storms are coming



Storms gather and now our watch begins...

Hear my words and bear witness to my vow

It shall not end until batteries fail

I bring ocean data through darkness

I am a watcher under waves

I am a drone that guards the realm

**I bring our ocean to models for this season
and seasons to come.**



Adapted from adaptation by HBO Game of Thrones (Song of Fire and Ice: George R. R. Martin)

Executing FAC Priorities: Preparatory Subgroups

February 12, 2020

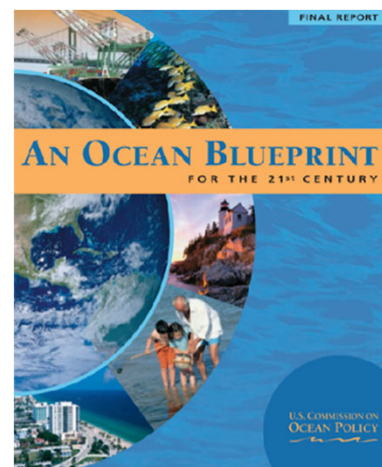


1

U.S. IOOS History & Context

U.S. Commission on Ocean Policy, July 2004

- There are several independent regional ocean and coastal observing systems. For the most part, they were built for different purposes and applications, measure different variables at different spatial and temporal scales, are not intercalibrated, and use different standards and protocols for collecting, archiving, and assimilating data.
- They also **compete with each other for the limited funding** available to support such efforts. As a result, despite considerable interest among stakeholders and the existence of required technology and scientific expertise
- The United States has progressed very slowly in the design and implementation of a cohesive national ocean observing system.



2

U.S. IOOS History & Context

U.S. Commission on Ocean Policy, July 2004

- Recommendation 26–1
- The National Ocean Council should make development and implementation of a sustained, national Integrated Ocean Observing System (IOOS) a key element of its leadership and coordination role. As an essential component of IOOS development, the NOC **should promote strong partnerships among federal, state, territorial, tribal, and local governments, nongovernmental organizations, industry, and academia, drawing upon the strengths and capabilities of each sector in the design, development, and operation of the IOOS.**



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Partnerships & Requirements

Partnerships Subgroup:

Purpose:

- Investigate the relationships across federal agencies, as well as with non-federal partners, and provide recommendations to strengthen and enhance those relationships.
- Initiate outreach activities (by IOOS AC members) to provide informational briefings about the Enterprise and explore ways to tighten collaborative efforts.
- Determine where the Enterprise might forge strategic alignments with new, unfamiliar communities (e.g., the insurance and reinsurance industries) and provide those recommendations to NOAA and the IOOC.

Current Activities:

- Developing Comprehensive List of National Partners

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Partnerships & Requirements

Partnerships Subgroup:

Considerations:

- Need to assess successful relationships before determining an outreach strategy
- Partnership approach should be shaped by the IOOS Vision & Strategy / Messaging subgroup activities
- Three categories of partnerships: **Existing, Emerging, and Future**
- AC needs to assess how we prioritize maintaining vs. growing these three categories

Next Steps:

- Review initial template(see handouts), Provide feedback (IOOS AC)
- Collect and maintain IOOS-Wide partnerships & stakeholders list (IOOS PO, RAs)
- Determine strategy to strengthen and enhance those relationships (IOOS AC, IOOC, RAs)
- Anticipate important future partnerships and cultivate (IOOS PO)

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Partnerships & Requirements

Requirements Subgroup:

Purpose:

- Examine "rack and stack" of IOOS Enterprise requirements against the current budget, while considering how IOOS will evolve into the future.
 - Assess what the IOOS Enterprise has been tasked to complete vs. what it can afford, and identify key gaps. This can be valuable for budget formulation requests and communications with Congress, as well as OMB.
- Develop a transparent process for evaluating requirements across the Enterprise in the future.

Current and Planned Activities:

- Examine legal requirements for authorization
- Gain a better understanding of how IOOS partners determine/define requirements, prioritize, and make decisions
- Discuss what an interagency requirements process might look like for the IOOS Enterprise

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Partnerships & Requirements Guidance

Partnerships Subgroup:

- Leveraging Existing Partnerships:
 - ...(Advice, Responsible Party)
- Prioritizing New Partnerships:
 - ...
- Engagement Strategies:
 - ...

Requirements Subgroup:

- Legal Requirements:
 - ...(Advice, Responsible Party)
- Agency Requirement Determinization:
 - ...
- Prioritization and Decision-making:
 - ...
- Interagency Requirements Process:
 - ...

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IOOS Strategy & Vision

IOOS Strategy & Vision AND Alignment of Messaging Subgroup:

Purpose:

- Define roadmap of where the Enterprise will move in the future, how specifically it intends to develop and mature, or how the various components (local, regional, national) fit into a broader framework.
- Explore ways in which IOOS partners can align their messaging and advance simple, commonly-understood priorities; speak from a unified voice to help grow recognition for the achievements and capabilities the IOOS Enterprise offers; and galvanize support from OMB, the Hill, the White House, and other entities

Current Activities:

- High-level mapping of regional priorities
- Examine IOOS Grand Challenges
- Complete a baseline assessment of alignment of past messaging
- Evaluate IOOS Communications Plan

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IOOS Strategy & Vision

IOOS Strategy & Vision AND Alignment of Messaging Subgroup:

AC Considerations:

1. In order to frame IOOS vision and strategy, it would be useful to map **regional IOOS priorities** to visualize where the strengths and commonalities lie and identify where gaps and improvements can be made (staff can work this with Josie and the PO based on the regional cooperative agreements;
2. Leverage a few of the **IOOS Grand Challenges** aimed at the UN Ocean Decade to identify areas that all regions, supported by US agencies, can implement together as a 'Program'. Regions can use these in their 5-year grants to align priorities;

Next Steps:

- Determine how to expand the regional priorities – add federal and core IOOS priorities (IOOS AC, IOOC, IOOS PO)
- Develop strategy to advance IOOS Grand Challenges (IOOS AC, IOOS PO, IOOC, RAs)
- Provide recommendations to strengthen or prioritize communications plan (IOOS AC)

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IOOS Strategy & Vision Guidance

IOOS Strategy & Vision AND Alignment of Messaging Subgroup:

- Assessing Regional Priorities:
 - ... (Advice, Responsible Party)
- IOOS Grand Challenges and UN Ocean Decade:
 - ...
- IOOS Vision for next 5-10 years:
 - ...
- Strengthening IOOS Communications:
 - ...

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U.S. IOOS Advisory Committee

2018-2021 Membership

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