

# U.S. IOOS Office Updates

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# FY 2023 IOOS Office Priorities

## Coastal, Ocean, & Great Lakes Observing, Predicting, and Informing

Continue delivering, diversifying, enhancing, and increasing accessibility of IOOS products and services for all Americans to meet customer needs

### Climate Data & Services

DETECTING THE COASTAL CLIMATE SIGNAL:  
THE IOOS CONTRIBUTION



IOOS  
ASSOCIATION

JULY 2021

Detecting the climate signal at the coast, understanding its manifestations, and helping to prepare a **Climate Ready Nation**.

### Improved Coastal Resilience including coastal modeling/predictions



Photo Credit: John Cannon

Enhance ecological forecasting supported by observing, science, and **equitable service delivery**.

### Economic Development



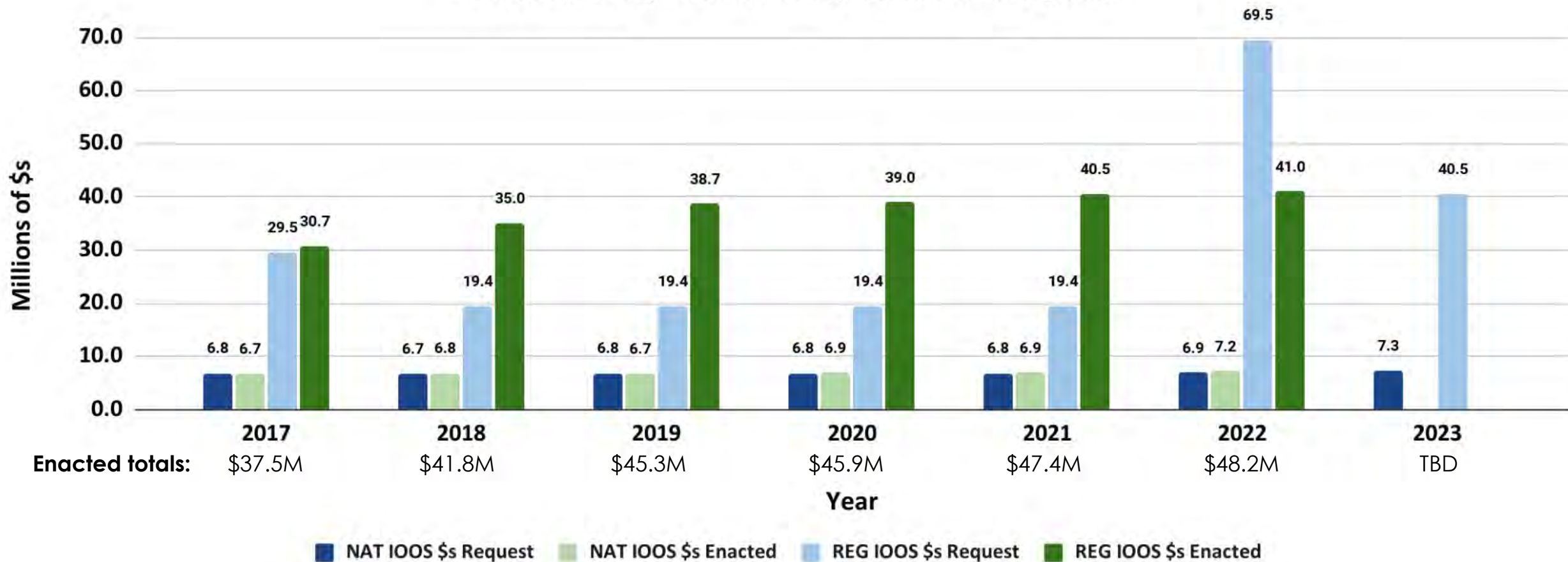
A healthy blue economy and growing **“new blue economy”** and services in the face of coastal hazards—including workforce development.



# U.S. IOOS Enacted and President's Budgets FY17-23

## NOS IOOS Request & Appropriation History

Part of the Story - not including 'backbone and global'



NOAA National Ocean Service - Navigation, Observations, and Positioning:

'National IOOS' & 'Regional IOOS Observations'

- Estimated Enacted levels are 'post rescission' totals for each year
- 'Request' = the President's Budget Request

# Next Steps - Budget



## FY22 Appropriations

- **Regional Observations** = \$41M
- **National IOOS** = ~\$7.2M



## FY22 & FY23-26 Bipartisan Infrastructure Law (BIL; formerly IIJA)



- **Prov 3:** Flood Inundation Mapping = \$4.5M
- **Prov 11:** Coastal and Ocean Observations = \$7.3M
- **Prov 12:** Regional Ocean Partnerships = \$1.8M



## FY23 House and Senate Marks

- **House Mark** = \$44M (+\$3M over FY22)
- **Senate Mark** = \$46M (+5M over FY22)
- **Both Marks "National IOOS"** = ~\$7.5M



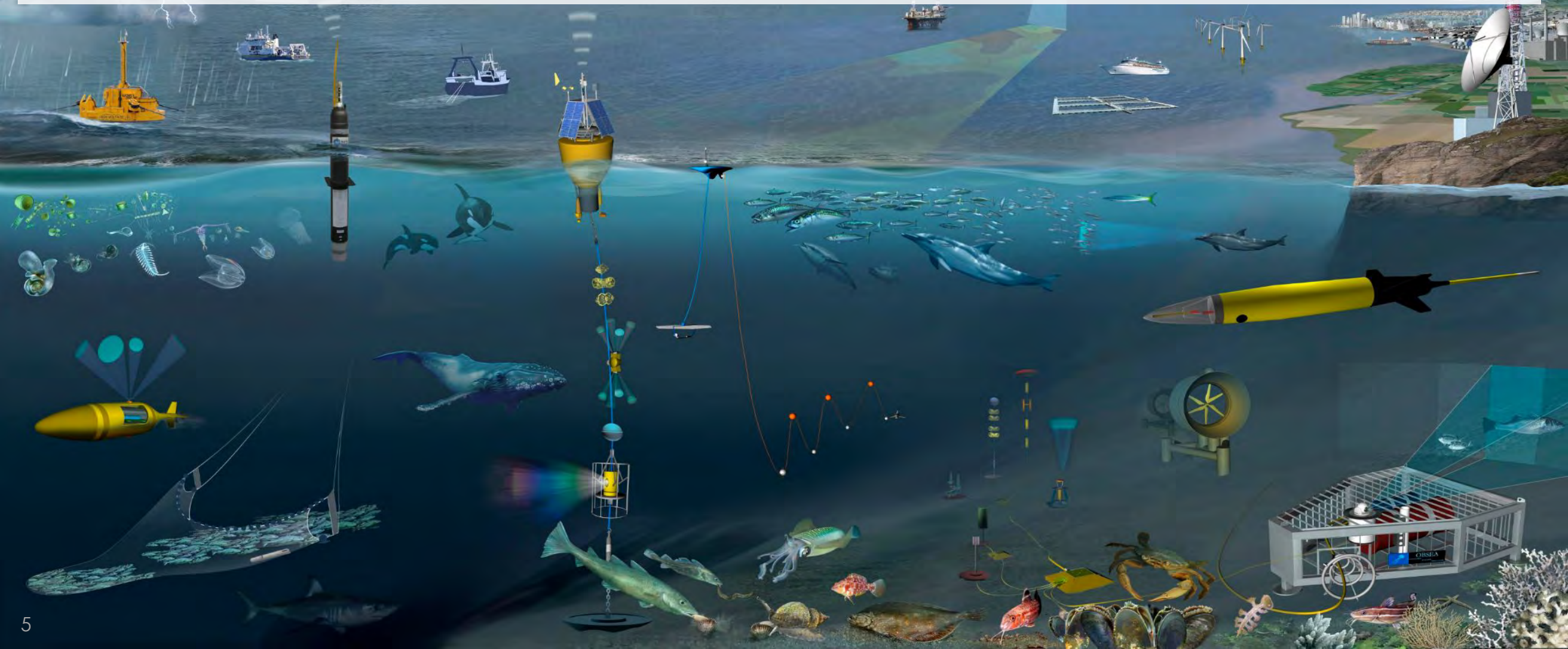
## FY23-26 Inflation Reduction Act

- **Coastal, Economic, and Climate Resilience** = \$3.3b for NOAA over 4 years



# NOAA's New Blue Economy Vision

A sustainable and equitable ocean and coastal economy that optimizes advances in science and technology to create value-added, data-driven economic opportunities and solutions to pressing societal needs.





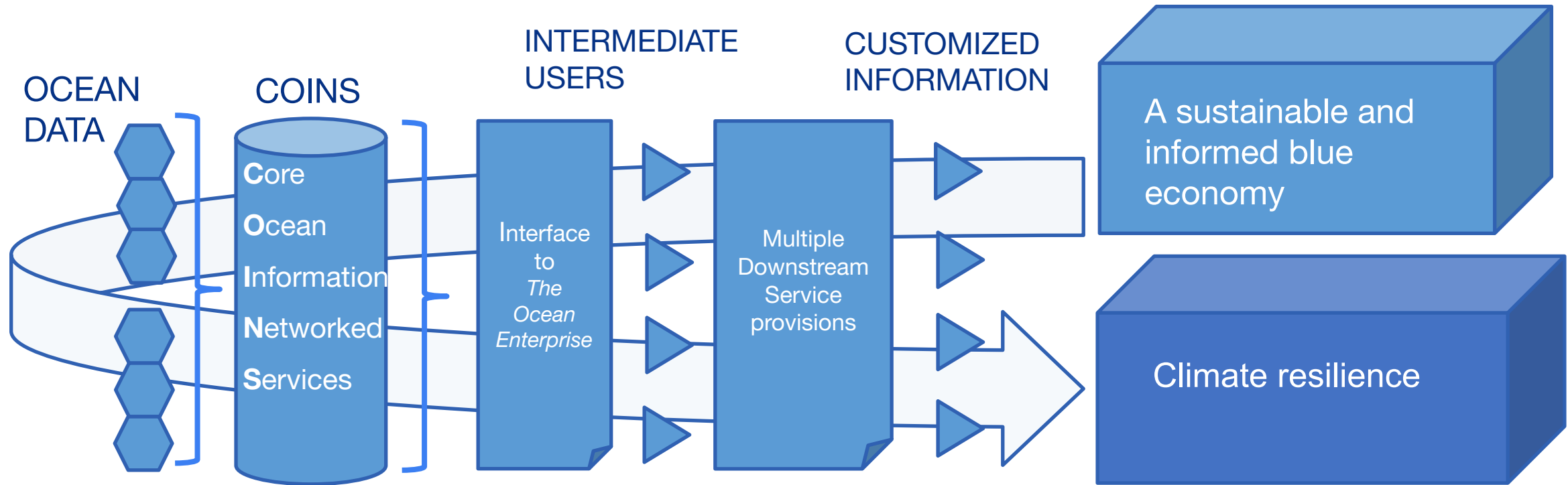
# Reimagining our relationship to the ocean

Autonomous observing, satellite imaging, remote sensors, big data, and artificial intelligence are generating **unprecedented amounts of information on the ocean**—data that are **essential for NOAA's mission of science, service, and stewardship**.

By reimagining what our relationship to the ocean looks like, **we can see and hear the ocean and the coasts like never before — for solutions and for profit**.



# An engine for the delivery of economic and societal benefits



Acquiring and  
delivering foundational  
ocean and coastal  
information

Spurring innovation and  
accelerating the growth of  
the New Blue Economy

Delivering large societal  
and economic benefits  
across the nation



# New Blue Economy - External Engagements

## Past Events:

Sept 20-22	ITA: Discover Global Markets	Providence, RI
Oct 17-20	MTS Oceans - Town Hall on Oct 20	Hampton Roads, VA
Nov 14-18	TMA BlueTech Week	San Diego, CA

## Upcoming Events:

Sept-Jan	MTS Dialogues with Industry	Online
Dec 12-16	AGU Coastal Ocean Modeling R2O Session	Chicago, IL
Jan 4-6	NOAA OAP Community Meeting	La Jolla, CA
Jan 8-12	American Meteorological Society Annual Meeting	Denver, CO
Feb 6-9	Coastal GeoTools	Charleston, SC
Feb 14-16	Oceanology International Americas	San Diego, CA
Apr 4-6	AGU Ocean Visions	Atlanta, GA





# New Blue Economy + other NOAA priorities





# Ocean Technology Transition (OTT) Program



**NOFO:** <https://www.grants.gov/web/grants/view-opportunity.html?oppld=342720>

<b>Optional LOIs due</b>	October 21, 2022
<b>Final proposals due</b>	January 17, 2023
<b>Review Panel</b>	Jan-Feb 2023
<b>Funding Decisions</b>	April 2023





# Marine Life Program – “Microbes to Whales”

Where is the marine and aquatic life?



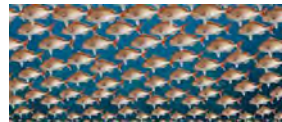
HOTSPOTS

Who's there ?



BIODIVERSITY

How many?



ABUNDANCE

Where did they come from?  
Where are they going?



MOVEMENT

and WHY?

## National Ocean Partnership Program:

- **FY22 Marine Life solicitation** (NOAA, NASA, ONR)
- **5 new projects:** CeNCOOS, NERACOOS, GCOOS, AOOS, SECOORA

## Global Efforts:



IOOS | EYES ON THE OCEAN™

**MBON**  
Marine Biodiversity  
Observation Network



# National Harmful Algal Bloom Observing Network (NHABON)

Year	Award	# Pilot Projects	# RAs Involved
FY20	\$1M	5	6
FY21	\$1.5M	7	8
FY22	\$2.5M	10	11

NOAA (IOOS and NCCOS) is drafting a **NHABON Implementation Plan**

- **Goal:** *Integrate existing assets and research efforts across NOAA into a more formal national observing network*





# Glider Program - recent examples

## Successful Underwater Glider User Group (UG2) Workshop (September 2022)

### Sustained Glider Operations:

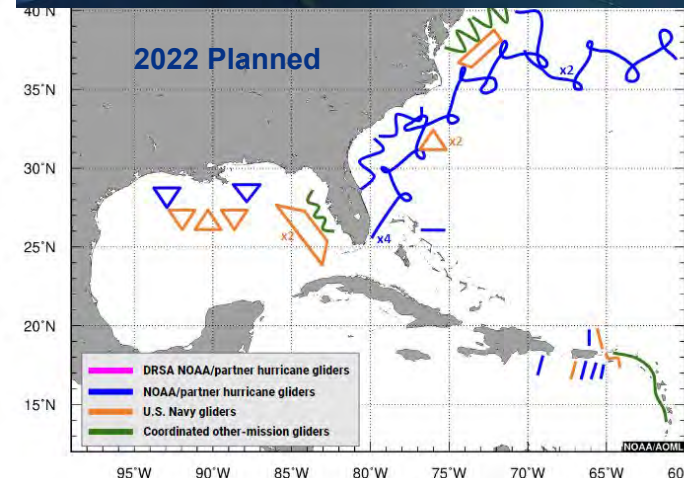
- California Underwater Glider Network
- Detecting the climate signal
- Long-term ocean state conditions

### Hurricane Monitoring:

- NOAA and Saildrone launched **7 hurricane-tracking surface drones** for the 2022 hurricane season (GoM & Florida)
- **Gliders data ahead of Hurricane Fiona** (AOML and CARICOOS)

### Ecosystem Monitoring:

- Chukchi Sea Marine Mammal Glider "Loki" (AOOS)
- Washington Shelf glider (NANOOS) - hypoxia data to inform tribal crabbing



# Data Management and Cyberinfrastructure (DMAC)



Marine Biological Data  
Mobilization Workshop

(March 2022)

DMAC Annual Meeting (June 2022)



Code\_Sprint

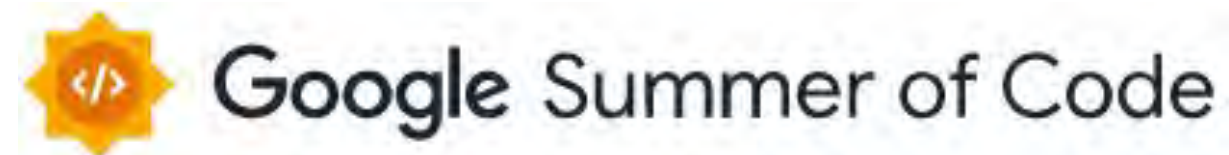


(IOOS Office and GLOS,  
April 2022)



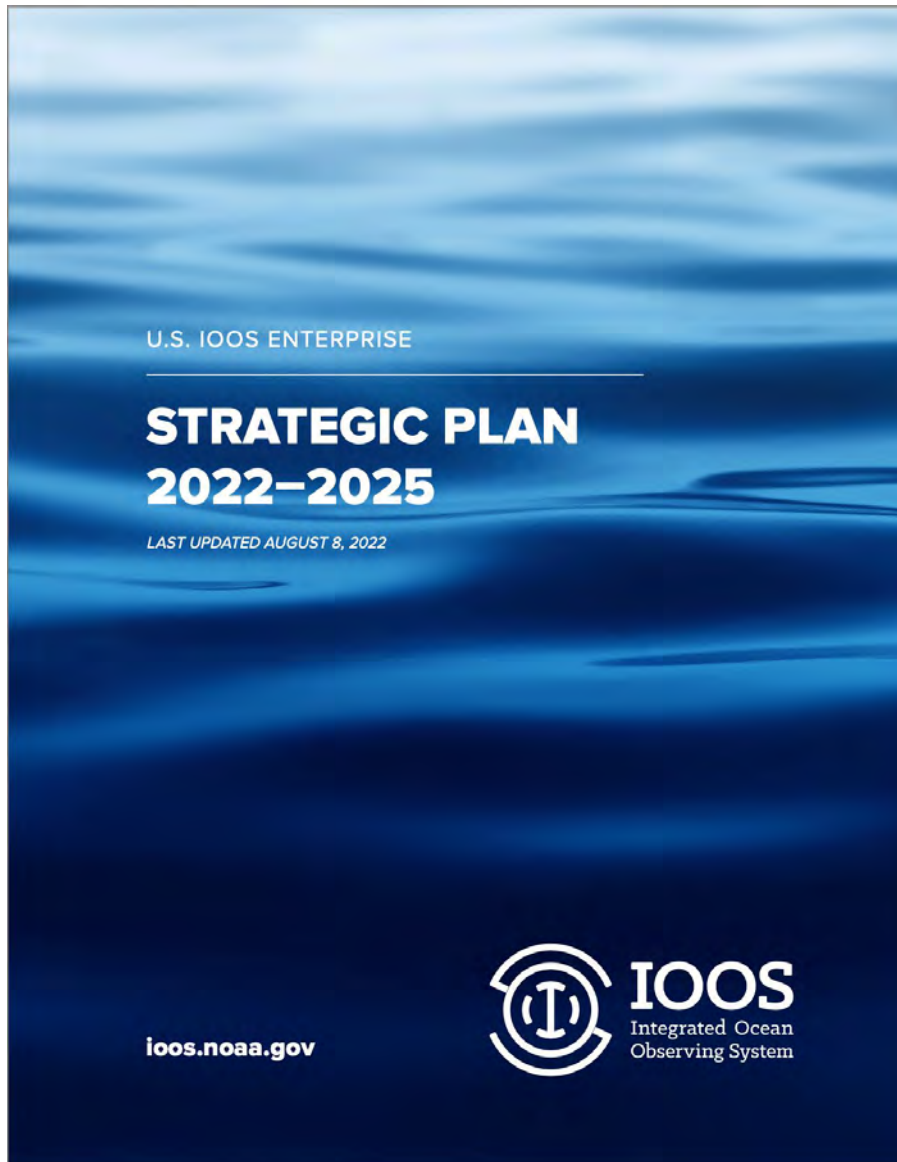
(August 2022)

DMAC Topic 2: Reaching for the Cloud





# IOOS Strategic & Implementation Plans



## IOOS Strategic Plan was refreshed in August

- Thank you for your helpful feedback!

## IOOS Implementation Plan in progress

- **October kick-off meeting:** Discussed high-value, high-effort milestones
- **Next Meeting in January:** Discuss/develop performance metrics and outlook for program plans



Thank you!!

Questions?



# Backup

# Marine Biodiversity Observation Network (MBON)



## National Oceanographic Partnership Program:

**FY22 Marine Life solicitation**  
(NOAA, NASA, ONR)

5 new projects:  
CeNCOOS, NERACOOS,  
GCOOS, AOOS, SECOORA

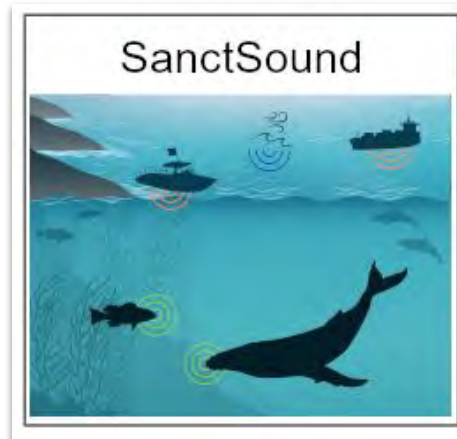
## Global Efforts:



## Products:



**December 2021**



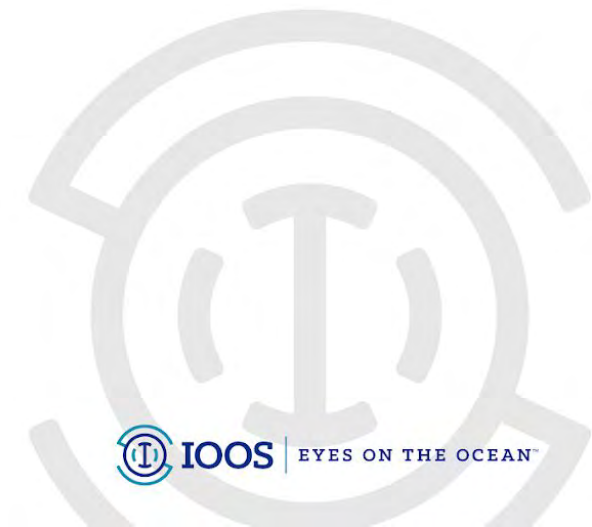
**Spring 2022**



**Sanctuary Watch**

*Web-Enabled Information for Sanctuary Management*

**October 2022**





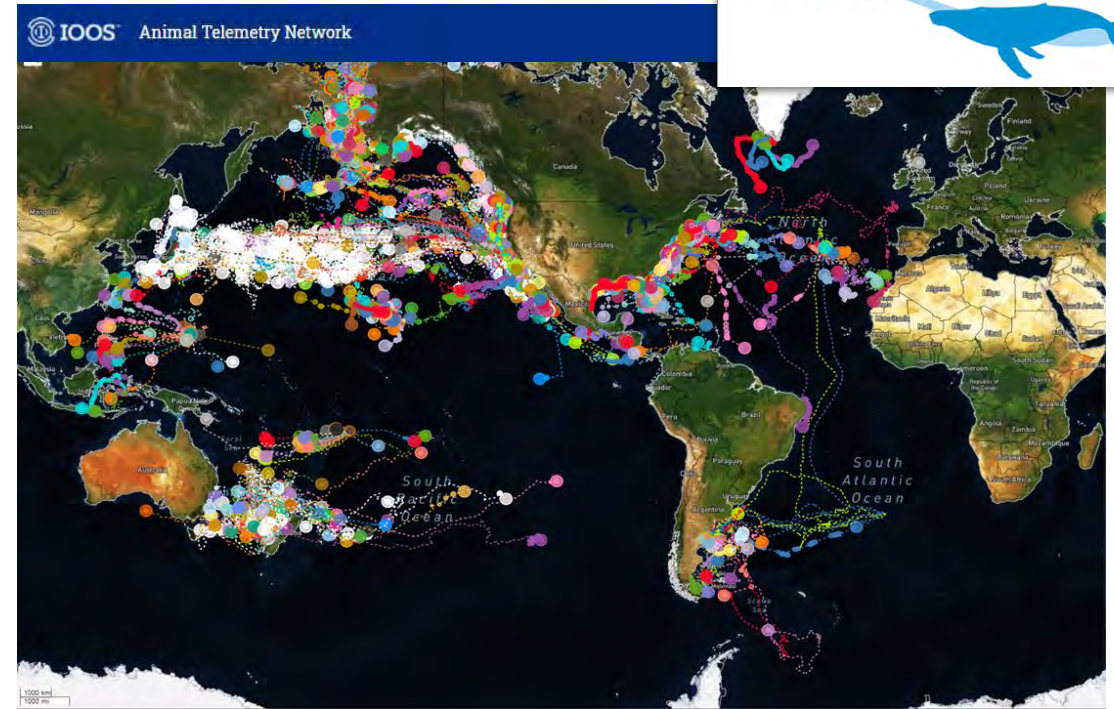
# Animal Telemetry Network (ATN) & AniBOS



## Data Volume in ATN DAC:

Projects	Species	Tags
129	70	4629

- Keeping U.S. beaches safe with **R/T shark detection buoys and text alerts**
- **Integrated U.S./Canadian Atlantic Coast acoustic telemetry tracking** - single point access for PIs to thousands of receivers
- **MBON/ATN “BioTrack”** established to integrate biodiversity and animal movement data



**7 Regional ATN-MBON stakeholder workshops completed**

**Summary Report now available:**  
<https://ioos.noaa.gov/project/atn/>

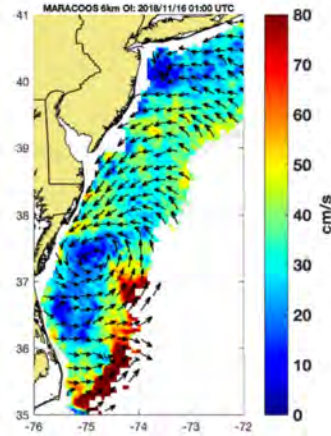
# Coastal and Ocean Modeling



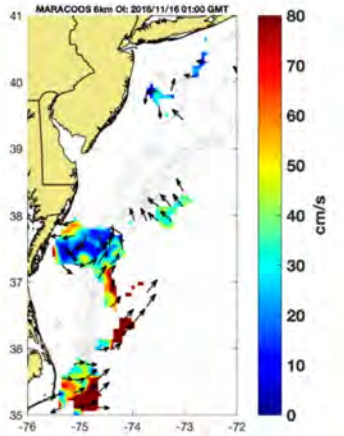


# Surface Currents Program: HF Radar Network

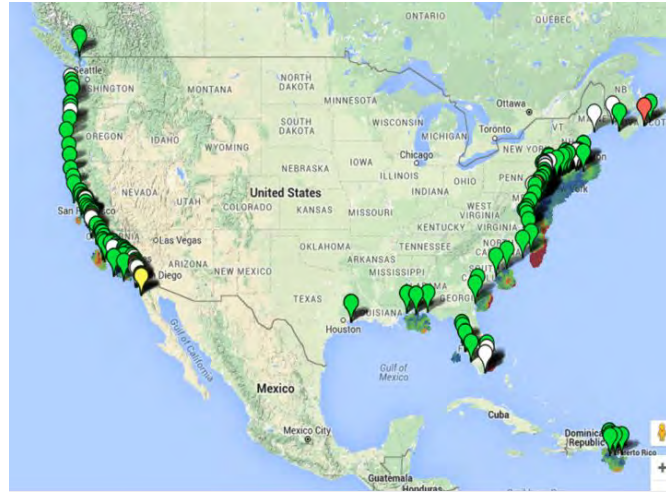
Total Map With No Interference



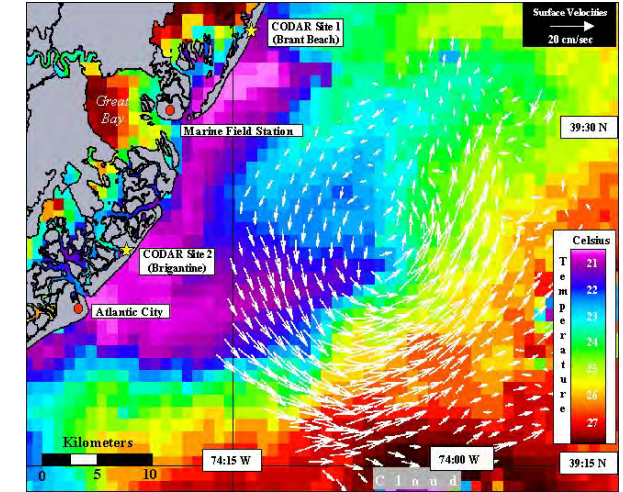
Total Map With Interference



Wind Turbine Interference mitigation software



Continued siting for new HFR installations



Data improvements and modeling



Retuning HFRs to FCC-approved radio broadcast frequencies



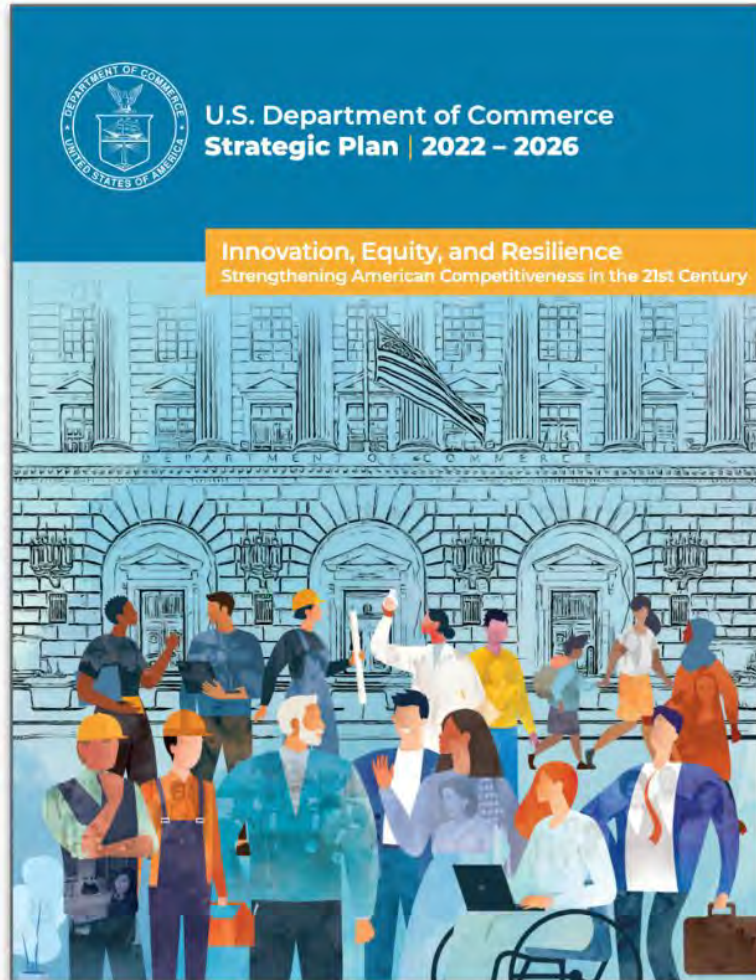
Configuring HFRs to measure waves



Expansion of HFR modeling for U.S. Coast Guard search and rescue



# New Blue Economy: Cross-Bureau Leadership



## New Blue Economy: Discover Global Markets



**The global ocean is the lifeblood of our planet's most vital functions and the power source of global commerce and trade.**

The Department of Commerce is activating its bureaus, including the International Trade Administration (ITA) and the National Oceanic and Atmospheric Administration (NOAA), to act creatively and collaboratively to advance research, promote clean tech exports and build more sustainable and equitable industries.

Of all the areas where ITA and NOAA's work overlap, none is as crucial as the Blue Economy—the industries, jobs and economic growth that rely on and protect our precious ocean and Great Lakes resources. The United States is not just home to 95,000 miles of shoreline where half of our population lives, we're also home to an enormous source of revenue and jobs generated by the interwoven sectors of marine transportation, offshore renewable energy, seafood, fishing, and coastal travel and tourism.

In 2018 alone, the American Blue Economy supported 2.3 million jobs and contributed \$373 billion to our GDP. By the start of the new decade, the Blue Economy across the globe is expected to double to \$3 trillion. It is nearly impossible for most Americans to go a single day without using, wearing, or eating something that has come from or through our ocean and coasts.

A new age in ocean technology, sustainability, and logistics calls for a New Blue Economy that puts U.S. companies and our workforce at the center of climate solutions. With climate considerations at the center of the Biden Administration's foreign policy and trade agenda, the New Blue Economy will enable the improved collection, analysis, and dissemination of



**NOAA expands and strengthens the American Blue Economy by leading agency-wide initiatives in the following areas:**

- Data and Information Services
- Marine Transportation
- Ocean Exploration
- Seafood Competitiveness
- Tourism & Recreation
- Coastal Resilience

## Earth Day Spotlight: Our Ocean, Our Blue Economy

April 22, 2022

Environmental data



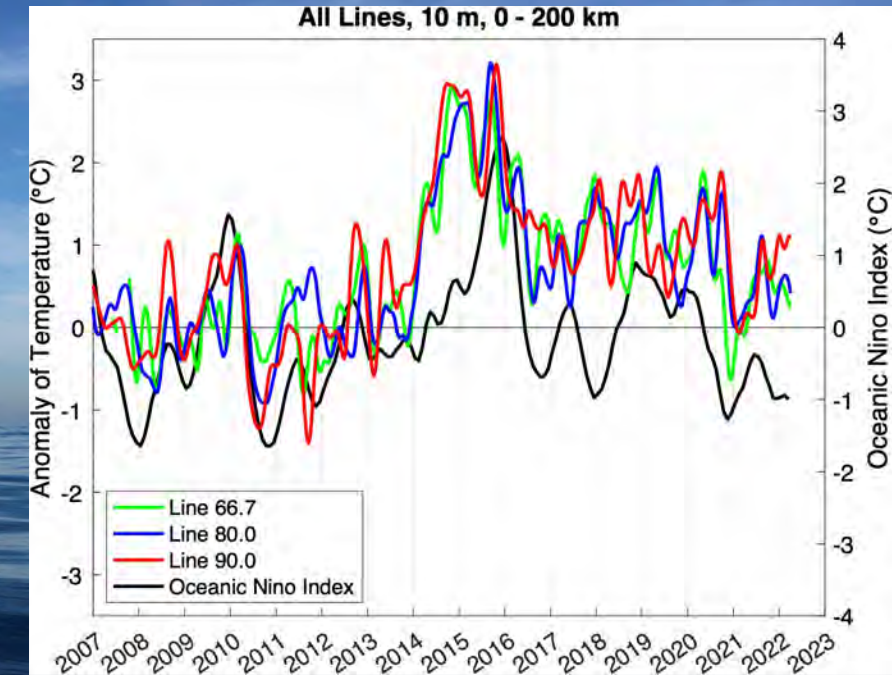
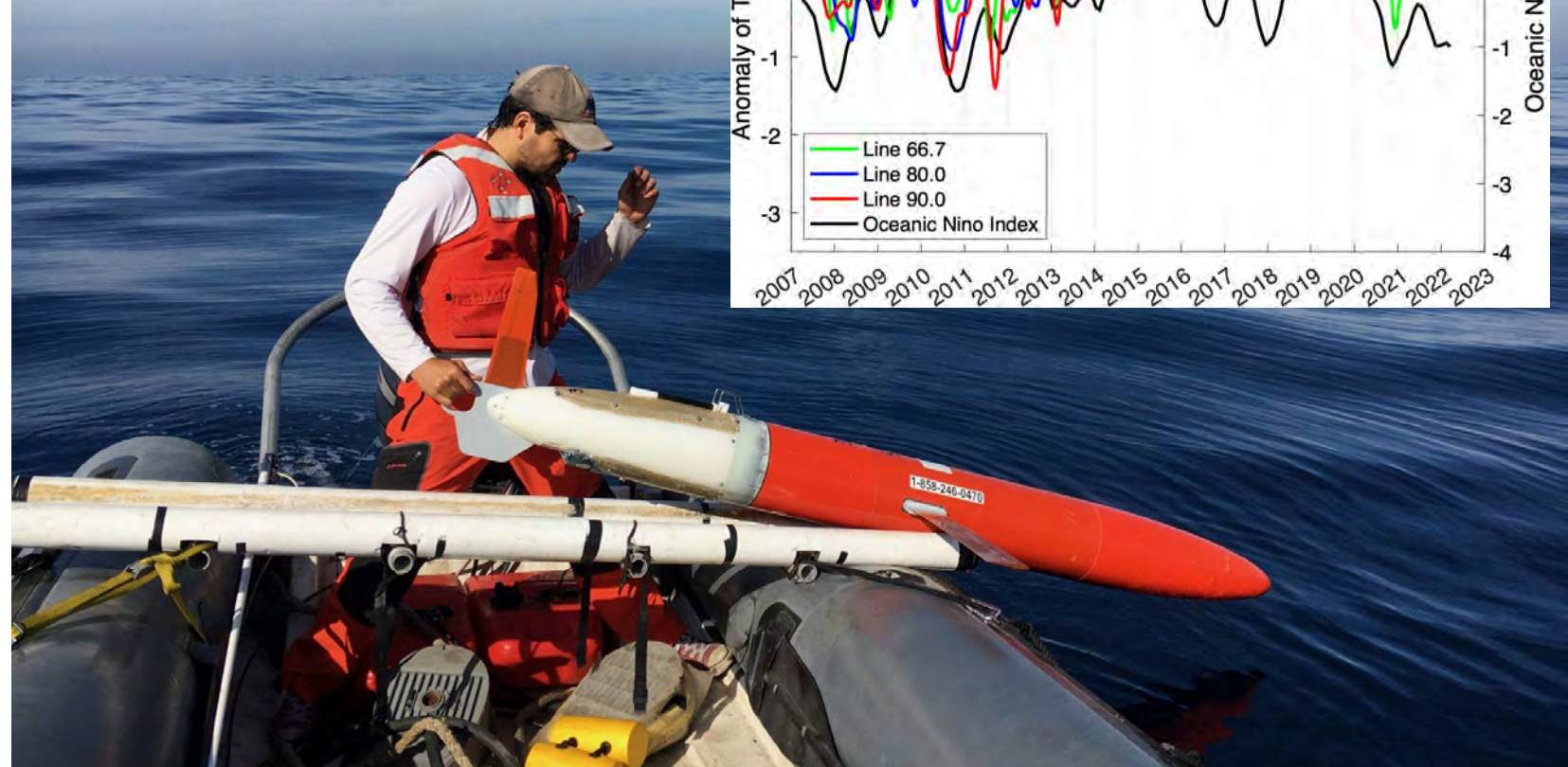
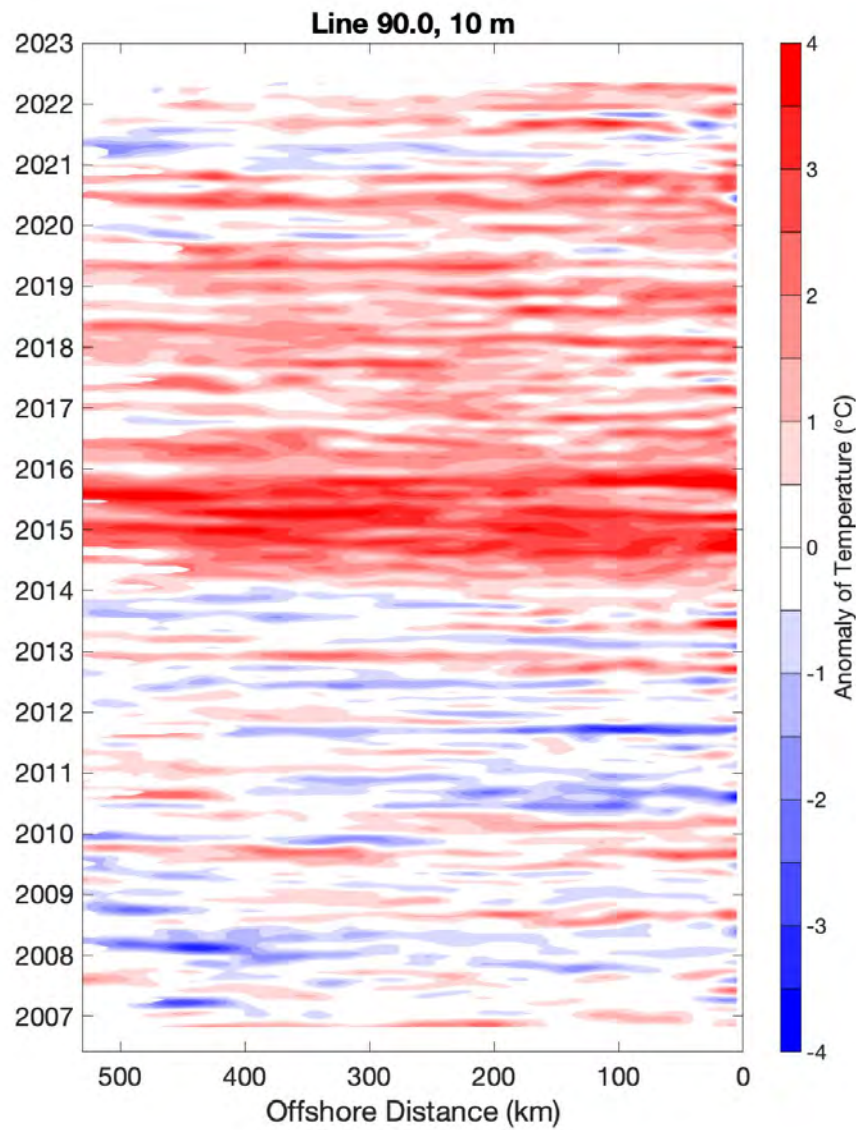
A joint blog by ITA Under Secretary Marisa Lago & NOAA Under Secretary and Administrator Richard Spinrad

For more than half a century, communities worldwide have gathered in late April to take part in acts of science, service and stewardship in celebration of Earth Day. At the Department of Commerce, Earth Day—and Earth Month—offer an important moment to shine a spotlight on the global ocean, the lifeblood of our planet's most vital functions and the power source of global commerce and trade.

The bureaus that we represent—the International Trade Administration (ITA) and the National Oceanic and Atmospheric Administration (NOAA)—are distinct in their missions, but share the Biden-Harris Administration and Department of Commerce's commitment to coupling sustainability with economic growth and unleashing the power of the U.S. private sector to combat climate change. Just as President Biden has implemented an all-of-government approach to tackling the climate crisis, the Department of Commerce is activating its bureaus to act creatively and collaboratively to advance research, promote clean tech exports and rebuild more sustainable and equitable industries.

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# California Underwater Glider Network- next gen BGC gliders

*The Spray Glider program provides essential information on subsurface heat content and ocean state of coastal California in relation to the Pacific Basin, especially the equatorial Pacific. Three main sustained lines since 2007 and two new lines starting in 2019*



# Glider Program - recent examples

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### Sustained Glider Operations:

- California Underwater Glider Network
- Detecting the climate signal
- Long-term ocean state conditions



### Hurricane Monitoring:

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# IOOS Strategic Plan Refresh

The Strategic Plan received a “Light refresh.” It maintains our goals & objectives and reflects the current status and observing needs of our Nation’s oceans, coasts, and Great Lakes.

The refreshed Strategic Plan was published in **August, 2022.**

## U.S. IOOS ENTERPRISE STRATEGIC PLAN 2018-2022

# IOOS 2017-2022 Summary

- IOOS's Budget History
- Federal legislation
- Executive Orders
- Biden Administration Priorities
- NOAA Cross-Line Office Efforts
- NOAA's Science Advisory Board Publications and Recommendations
- National Academies Publications and Recommendations
- Data, science, and technology accomplishments
- International efforts



## IOOS Over the Years

[Last updated January 3, 2022]

### A Look Behind and A Look Ahead

Since the [IOOS Strategic Plan](#) was released in 2018, the need to respond to the climate crisis has become even more urgent: The number and cost of extreme events is increasing and the acceleration of rising sea levels, ocean acidification, and marine heatwaves is resulting in chronic consequences for many coastal communities. Government is responding by increasing funding for science agencies that will in turn increase efforts to help the Nation avoid the most catastrophic impacts of the climate crisis. The information below provides a look back over the last four years at those efforts that touch on [IOOS's mission](#) as well as a look ahead at what is currently envisioned in 2022.

### IOOS Budget History

IOOS' enacted budget has steadily increased over the past twelve years, from \$21 million in 2010, to \$37.5 million in 2017, and to \$45.9 million in 2021.

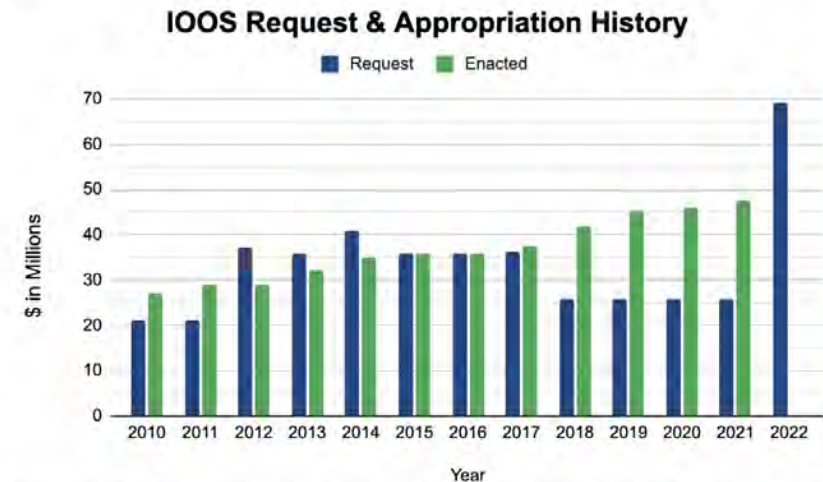


Figure 1. NOS IOOS request and appropriation history, not including backbone and global funding. These numbers include a total amount for the U.S. IOOS Office and Regional IOOS Observations.





## **IOOS Enterprise Input**

The Core Writing Team held interviews and briefings to solicit input from across the IOOS Enterprise, including:

- IOOS Program Office Staff
- Regional Association Directors
- IOOS Association Executive Director
- DMAC group
- IOOS Business Team
- IOOC
- IOOS Advisory Committee



# Interview Feedback

- **Evergreen Goals** // Interviewees agreed that the goals and objectives outlined in the previous plan continue to reflect the IOOS Enterprise and are always relevant.
- **Annual-ish update** // Interviewees supported this idea, noting that:
  - There should not be frequent changes to priorities as this would be disruptive to program's planning efforts;
  - An annual-ish update is too frequent to capture scientific and technical advancements; and
  - There needs to be tripwire(s) for a deep review of the plan.
- **Enterprise partners** // Many RA Directors would like to see more involvement, coordination, and collaboration from non-NOAA Federal Enterprise partners.
- **Predictability** // Repeatable and predictable systems, tools, and processes are needed.
- **Realistic** // Implementation needs to be realistic and feasible, and balance the Office's aspirations, financial reality, and staff workloads.





## Strategic Plan Goals

1. Sustain long-term, high-quality observations of ocean, coastal, and Great Lakes environments to address local, regional, and national needs.
2. Deliver standardized, reliable, and accessible data.
3. Support model predictions that address a wide range of user requirements.
4. Provide integrated, user-driven products, and tools.
5. Increase the reach and effectiveness of IOOS through partnerships, stakeholder engagement, and investment in Enterprise excellence.

# Big Idea

The Strategic Plan has a three-year window that will be lightly refreshed annually.

The intent behind this is for IOOS to regularly revisit the Strategic Plan as part of an iterative, agile, and predictive approach that is responsive to the current events.

For example, the NOS Strategic Plan will be finalized later this year. The 2024 light refresh will ensure the IOOS Enterprise Strategic Plan aligns with the new NOS Strategic Plan.

U.S. IOOS ENTERPRISE

## STRATEGIC PLAN 2022–2025

*Last updated July 31, 2022*

[ioos.noaa.gov](https://ioos.noaa.gov)





# Criteria for Major Refresh

Significant events would trigger a major review and overhaul of the plan, such as:

- New IOOS Director
- New Administration
- Significant Budget Changes (+/- 20%)
- Major Legislative Changes
- Significant changes in technology or ocean conditions

U.S. IOOS ENTERPRISE

## STRATEGIC PLAN 2022–2025

*Last updated July 31, 2022*

[ioos.noaa.gov](https://ioos.noaa.gov)





# IOOS Implementation Approach

The U.S. IOOS Office is adopting an agile implementation approach. This new approach focuses on:

- **Practice.** Implementation will be an agile practice that evolves and improves with every meeting.
- **Processes.** The Office is working to put repeatable and predictable systems, tools, and processes in place.
- **Cadence.** A consistent, predictable quarterly cadence of check-ins will focus on strategic planning and implementation for the period ahead.
- **Priorities.** Implementation efforts will be aligned with IOOS priorities for a more tactical approach and provide opportunities to discuss where resources should go.





# IOOS Implementation Kickoff Meeting

The U.S. IOOS Office held our kickoff meeting just last month! During this meeting we focused on:

- **State of IOOS.** Carl delivered a State of IOOS address that reviewed what IOOS in up to within NOAA, the regions, nationally, and internationally
- **Decision Maker Questions.** Krisa led a discussion about our users, the decisions they are making, and the questions they ask IOOS.
- **High-value, High-effort Milestones.** Becky led a discussion around office milestones with high value and high effort, and what resources and clarifications are needed to make the biggest difference.



## Looking Ahead: January 2023

We are already looking ahead and planning for the January 2023 office implementation meeting, which may include discussions around:

- Discuss and/or develop performance metrics
- Review priority setting: how cooking/simmering went in the last 12 weeks and how can we improve?
- Outlook for program plans
- Expectations for budget execution
- Initiate collaborative planning with use case





## What this means for Regional Associations

- **Consistent, repeatable engagement.** We will strive for more consistent repeatable processes in our engagement with Directors or your SMEs (e.g., Program managers meetings with ROWG, UG2, review progress reports, etc...) to adjust or coordinate on next steps
- **Review Priorities.** We will routinely review and update our priorities, and share them with you to ensure our goals are aligned and mutually understood
- **Collaboration Opportunities.** We are considering developing user driven use cases with cross observing programs and multi-regional collaborative plans. We will work with you as we go forward with anything.