

# SUMMARY OF THE 2023 NATIONAL OCEANOGRAPHIC PARTNERSHIP PROGRAM (NOPP) OCEAN LIFE FORUM

Hosted by

NOPP, Smithsonian Institution, Integrated Ocean Observing System (IOOS) Association, & National Oceanographic and Atmospheric Administration (NOAA)

August 9-10, 2023









# **EXECUTIVE SUMMARY**

The United States needs a long-term, strategic approach to protect our living natural heritage and the ways of life it supports, recognizing the deep and fundamental connections between nature and our own health and well-being. The 2023 NOPP Ocean Life Forum built on a history of cross-sector efforts and successes in marine exploration, observing, research, mapping and conservation to identify needs and opportunities for a stronger knowledge foundation upon which federal agencies and other parties can align priorities and investments toward more cost-effective and impactful solutions to the increasing challenges that require information on biodiversity and living resources. Key steps towards achieving this vision include to (1) *build stronger coordination of science and stewardshi*p of our rich ocean, coastal, and Great Lakes biodiversity; (2) *engage the nation's diverse voices and ways of knowing* to maximize effective and equitable stewardship of ocean life and its benefits to people; (3) *harmonize practices for collecting, managing, and sharing biodiversity information*; and (4) *communicate how and why ocean life benefits people everywhere*, and how science and stewardship action sustain it.



Group photo of the 2023 Ocean Life Forum event attendees taken on the Smithsonian Environmental Research Center (SERC) campus.

## **BACKGROUND AND CONTEXT**

Humanity faces a crisis in the degradation of nature that is inseparable from the crises of climate change and societal equity. Together, these challenges threaten the foundations of our thriving societies and economies, from village to global scales. Because these crises are intertwined, their solutions can and must be approached in concert in order to equitably protect and manage the nation's living resources strategically and effectively.

People rely on healthy ocean biodiversity for many benefits – food, recreation, culture, and more. "Ocean biodiversity" refers to the variety of life in all its aspects – species, genetic lineages, habitats, and associated ecosystems and interactions – from the sea surface to the darkest depths, the coasts, and the Great Lakes, and from microbes to whales. The activities of these interacting species and habitats are essential to the proper functioning and resilience of productive ocean ecosystems that support the nation's industrial, recreational, and cultural activities, valued at billions of dollars annually. Sustaining those benefits in a rapidly changing world requires evidence-based decisions on the status, trends, and drivers

of change in the species and habitats that produce them.

Our natural heritage, and the ways of life that it supports, are in crisis, one that is closely intertwined with the ongoing crises of climate change and inequity among people. It is increasingly clear that these challenges must be approached together to reach lasting, just solutions that support human health, economies, national security, and other domestic and global challenges. To address them we need biological intelligence: trusted, accessible, and scientifically rigorous inventories and knowledge



of ocean species and habitats, their interactions, and the ecosystem functions and services to people that they support.

But we are far from that goal. Information on ocean life and ecosystems is currently collected by many parties using a wide range of methods, the data are heterogeneous, generally not coordinated, and often not shared. Resulting information products are routinely created without engaging users 'on the ground' and with poor understanding of their needs for actionable information. This lack of coordination and interoperability wastes limited resources and harms our ability to effectively sustain multiple uses of a healthy ocean. As a result, relevant information about many aspects of ocean life and ecosystem services is unavailable or inaccessible. A recent, national-scale knowledge synthesis of U.S. marine biodiversity sponsored by the Lenfest Ocean Program concluded that at least one third of U.S. marine species are unprotected, and that too little information is available to evaluate the status of marine life throughout much of the nation's EEZ.

The U.S. needs a coordinated national-scale, long-term effort to map and understand our changing ocean biodiversity. This information is an essential foundation for success of multiple U.S. initiatives, including

the National Nature Assessment, Natural Capital Accounting, Ocean-Climate Action Plan, and to inform emerging biodiversity credit markets. This foundation must be built from inventories of the living species and habitats across the expansive U.S. Exclusive Economic Zone (EEZ) – the largest in the world – and long-term monitoring of their status, trends, interactions, and responses to stressors. This knowledge will empower managers, rights holders, and stakeholders to make wise decisions that effectively steward ocean life, track change, implement climate solutions, and grow the blue economy.

The U.S. is already leading many efforts to collect, categorize, and use ocean biodiversity information, but there is a growing need for more consistency and clarity in this information. The Census of Marine Life, which concluded in 2010, acknowledged the lack of systematic observations of life across ocean realms. Building on this, a 2010 NOPP marine biodiversity workshop<sup>1</sup> highlighted the need for coordinated biodiversity sampling from microbes to mammals and across a range of taxa, space, and methods; urged the community to ensure compatibility of historical data with existing and new data collections to establish time series of marine life information; recommended increased focus on and investment in taxonomic resources, automated sample processing, and exploration; and suggested establishment of a U.S. Marine Biodiversity Observation Network (MBON). As reviewed in a recent special issue of Oceanography<sup>2</sup>, progress has been made on several of these recommendations, including nearly \$40 million invested by Federal agency and industry partners in MBON since 2014 focused on collecting, curating, analyzing, and communicating marine biodiversity observations for use in management and decision-making. The U.S. Geological Survey maintains a U.S. node of the global Ocean Biodiversity Information System (OBIS), which was established by the Census of Marine Life. The Smithsonian Institution launched the Marine Global Earth Observatory (MarineGEO), which has built a networked community and open protocols for standardized research on biodiversity and ecosystem change in coastal zones. There is both opportunity and need to bring these efforts together to create a whole that is greater than the sum of its parts.

## **EVENT SUMMARY**

To address requests for critical coordination and delivery of actionable ocean life knowledge and information, the NOPP Office, Smithsonian Institution, IOOS Association, and NOAA convened the NOPP Ocean Life Forum on August 9th and 10th, 2023. The Forum brought together 57 leaders and experts from the Federal government, Indigenous communities, academia, non-profit, and philanthropic organizations to identify the most pressing priorities for advancing marine biodiversity science and stewardship at the national scale. The Forum featured a series of plenary events, including a Fireside Chat with Dr. Ellen Stofan, Smithsonian Institution Under Secretary for Science and Research, and Dr. Sarah Kapnick, NOAA Chief Scientist, followed by working sessions and breakouts focused on identifying foundational elements to strengthen and sustain national scale ocean biodiversity coordination.

<sup>&</sup>lt;sup>1</sup> https://cdn.ioos.noaa.gov/media/2017/12/BON\_SynthesisReport.pdf

<sup>&</sup>lt;sup>2</sup> Vol. 34 No. 2, https://tos.org/oceanography/issue/volume-34-issue-02

# CALL TO ACTION

The 2023 NOPP Ocean Life Forum confirmed that while the core recommendations from the 2010 NOPP report remain relevant today, a number of additional areas require coordination and action. These can be summarized in the following calls to action for the community:

*Coordinate, share, and leverage ocean biodiversity knowledge toward actionable information and real solutions.* A national-scale, coordinated ocean biodiversity initiative would provide the knowledge and improved organizational structure needed to facilitate and streamline development of ocean spaces



sustainably, and to advance marine conservation and equitable decision processes with users of resources. This cannot be accomplished by government agencies, academia, industry, or philanthropy acting separately. Solving these issues requires coordination, collaboration, and mobilization of new resources from multiple sources.

Engage the nation's diverse voices, ways of knowing, and types of governance to maximize effective and equitable stewardship of ocean life and its benefits to people. Fully engaging and enfranchising the diverse communities that rely on ocean biodiversity is pivotal to effective and equitable actions. Achieving this

requires prioritizing equity, user-centric approaches, data that support action, trust building, and fostering collaboration between industry, government, philanthropy, and local communities.

*Identify agreed practices and standards for collecting, managing, and sharing biodiversity information useful for conservation and sustainable economic growth*. Standards must be established to harmonize information across time and space, and inform priorities and investments in ocean biodiversity monitoring and information sharing. Such trusted, interoperable information is the foundation for effectively evaluating status and trends of living resources, identifying strategic opportunities for their management and protection, and responding to rapidly growing markets and regulatory environments related to biodiversity and ocean carbon. Biodiversity markets will emerge with or without standards – but ensuring that they operate effectively and equitably requires reliable, evidence-based strategies that serve both environmental and economic benefits.

*Communicate broadly how and why ocean life benefits people everywhere and at all levels, and what science, stewardship and action are needed to sustain this.* This will involve identifying and conveying unified messages, along with effective, frequent, and ongoing communication to disseminate actionable information in a user-friendly format that supports needs identified through dialogue with communities. Collaboration between federal, Tribal, state, and regional governments, along with non-government sectors and boundary organizations, is essential to identifying and addressing local needs and concerns, sharing knowledge and best practices, and inspiring current and future generations to connect with the ocean.

# CONCLUSIONS AND NEXT STEPS

Delivering on these four calls to action could be best achieved with a coordinated, national-level Ocean Biodiversity Strategy. There is strong consensus on the urgency of the linked climate, biodiversity, and equity crises; the need for action to address them; the essential role of trusted, shared knowledge in supporting these actions; and the specific need for ocean biodiversity information to be collected strategically, managed effectively, and made available on scales that inform coordinated responses. The community of scientists, policy makers, supporters, and resource users is at a critical juncture, and is strongly motivated by both the challenge and opportunity to take immediate action.

Ensuring the well-being of people and nature in the long term and in the face of major environmental and societal change requires innovation and collaboration among sectors and communities to understand status and trends of life in the ocean, coasts, and Great Lakes. Progress toward these goals will require substantial investments in and strategic coordination of the technologies and activities to collect and share ocean biodiversity information; co-development of reliable, shared approaches; and active communication across all levels of government, private sector, academia, and philanthropic organizations.

The NOPP Ocean Life Forum engaged across sectors and demonstrated that there is strong, broad consensus on key priorities for action to address key challenges and to ensure more cost-effective, strategic, nimble, and equitable management of the nation's marine resources and cultural heritage. But the Forum also highlighted the importance of engaging rights holders, partners, and beneficiaries from all regions and communities to develop common solutions. To maintain momentum toward achieving these ambitious goals, a series of follow up events and opportunities for engagement are underway, set in motion by the NOPP Ocean Life Forum (Figure 1):

#### 1. Development of a National Ocean Biodiversity Strategy and Implementation Plan.

In September 2023, a Federal team began work on a draft National Ocean Biodiversity Strategy. The strategy will serve as an organizing framework around which Federal agencies and non-



**Figure 1.** A series of follow up events and opportunities for engagement, set in motion by the NOPP Ocean Life Forum.

Federal partners can advance needed actions and establish partnerships towards a set of shared goals, including to:

- Coordinate efforts and resources among agencies and sectors to deliver ocean biodiversity information;
- Establish a biodiversity data, mapping and visualization platform;
- Develop and mature tools and institutions to integrate and deliver ocean biodiversity information across sectors;
- Build public and private partnerships to ensure the conservation, restoration, and sustainable use of ocean biodiversity

#### 2. Public Request for Information (RFI), Fall 2023.

The National Science Foundation will publish a Request for Information, on behalf of the White House National Science and Technology Council Subcommittee on Ocean Science and Technology (SOST), to ensure that all interested parties have the opportunity to provide input on the foundational elements of a strategy and actions that Federal agencies could take to align ocean biodiversity investments and policy with demonstrated needs to ensure benefits to society and a range of non-federal entities.

#### 3. High-level Ocean Biodiversity Summit, January 2024

In January 2024, the Smithsonian Institution and NOAA will host a high-level Ocean Biodiversity Summit, bringing together ocean leaders to express support for and make commitments to national level, cross-sector advancement of the National Ocean Biodiversity Strategy.

#### 4. Ocean Sciences Meeting Town Hall, February 2024

A town hall session at the February 2024 Ocean Sciences Meeting (OSM) will engage the broad scientific community and invite new perspectives on key needs and opportunities for long-term scientific understanding and stewardship of living marine resources.

#### 5. International Day of Biodiversity, May 2024

The National Ocean Biodiversity Strategy will incorporate feedback collected through the RFI, Federal agency review, the high-level Summit, and the OSM Town Hall, in addition to this NOPP forum. The Federal writing team will synthesize this input in the Strategy document and anticipates release of the Strategy in honor of the International Day of Biodiversity.

#### 6. Capitol Hill Ocean Week, June 2024

CHOW presents an opportunity to reach again into the ocean community for discussion and gathering information on next steps in implementing the strategy.

## ACKNOWLEDGEMENTS AND APPENDICES

The 2023 NOPP Ocean Life Forum was co-sponsored by the Smithsonian Institution, IOOS Association<sup>3</sup>, and NOAA<sup>4</sup>. Please see Appendix II for a full list of participants, with a special thanks to the breakout room moderators, speakers, and sponsors. Thank you to Anson "Tuck" Hines for welcoming everyone and hosting the Forum at the Smithsonian Environmental Research Center.

<sup>&</sup>lt;sup>3</sup> An award from the Richard Lounsbery Foundation enabled the support of the IOOS Association for this effort. <sup>4</sup> Support for this project was provided by the National Oceanic and Atmospheric Administration via contract to Integrated Systems Solutions, Inc. (Contract/Task Order #1305M419DNCNA0016/1305M322FNRMA0216).

#### Appendix I. 2023 NOPP Ocean Life Forum Agenda

Day 1: Status of U.S. Marine Biodiversity August 9, 2023   Venue: Smithsonian Environmental Research Center   Schmidt Room				
08:30	Registration & Breakfast			
09:00	<ul> <li>Welcome to the NOPP Ocean Life Forum</li> <li>Welcome to the Smithsonian Environmental Research Center (SERC)</li> </ul>	T. Hines, SERC		
	<ul> <li>Meeting Overview: NOPP and IOOS Association Leadership</li> <li>Introduction to the NOPP and IOOS Association</li> <li>Goals and outcomes for the Forum</li> <li>Housekeeping</li> </ul>	A. Leonardi, NOPP K. Yarincik, IOOS Association		
09:30	Round Robin Introductions	K. Yarincik All Participants		
10:00	Group Photo & Coffee Break			
10:30	Fireside Chat: National Coordination of Marine Biodiversity Science and Stewardship	G. Canonico, NOAA E. Duffy, SI		
		E. Stofan, SI S. Kapnick, NOAA		
11:30	<ul> <li>Working Lunch: Status of Marine Biodiversity Understanding in the U.S.</li> <li>Marine biodiversity assessments in the U.S. and globally</li> <li>Discussion of participant survey results</li> <li>Introduction to Breakout Sessions</li> </ul>	G. Canonico, NOAA E. Duffy, SI All Participants		
01:00	<ul> <li>Breakout Session 1: Foundational Elements of Stronger, Sustained National Scale Ocean, Coasts, and Great Lakes Biodiversity Coordination <ul> <li>What are the science and information needs?</li> <li>How can we best align efforts among different knowledge "holders" and with the needs of knowledge "users"?</li> <li>Are the core themes and recommendations from the 2010 NOPP report still priorities?</li> </ul></li></ul>	All Participants		
02:30	Break			
03:00	Roundtable Discussion: Readout of Breakout Session 1; Plans for Day 2	A. Leonardi, NOPP		
04:00	<ul> <li>Check In: How are you feeling about the conversation?</li> <li>Preview of Day 2</li> </ul>	G. Canonico, NOAA E. Duffy, SI		
04:30	Adjourn			
05:00	Reception in the SERC Garden			

	Day 2: Key Players and Commitments August 10, 2023   Venue: Smithsonian Environmental Research Center   Schmidt Re	oom			
08:30	Registration & Breakfast				
09:00	<ul> <li>Welcome Back to the NOPP Ocean Life Forum</li> <li>Reminder of goals and outcomes for the Forum</li> <li>Post-It Note Activity Results</li> <li>Housekeeping</li> <li>Charge for Breakout Session 2</li> </ul>	A. Leonardi, NOPP			
09:15	Open Discussion: National Nature Assessment	P. Levin, USGCRP			
09:30	<ul> <li>Breakout Session 2: Partners and Commitments</li> <li>What organizations, agencies, or sectors are well suited to help design and lead each component?</li> <li>How might those entities work together to implement effective coordination?</li> <li>How best to communicate/publicize this work to the broader community, gather input and buy-in?</li> </ul>	All Participants			
10:45	Break				
11:00	Report on Breakout Session 2: Partners and Commitments	G. Canonico, NOAA E. Duffy, SI			
11:30	Lunch				
12:30	<ul> <li>The Way Forward: Tabletop Activity</li> <li>Who are the knowledge holders and users that need to be involved as we advance this conversation - what voices and perspectives are missing and why?</li> <li>What do you think needs to be committed and by whom (offer examples)?</li> <li>Additional questions</li> </ul>	All Participants			
02:00	Break				
02:30	Wrap Up & Synthesis	All Participants			
04:00	Adjourn				

First Name	Last Name	Affiliation
~	Aguilera-	
Stacy	Peterson	National Science Foundation
Jason	Biggs	Guam Department of Agriculture
Kelsey	Bisson	National Aeronautics and Space Administration
Eric	Buck	U.S. Navy
Gabrielle	Canonico	National Oceanographic and Atmospheric Administration
Lisa	Clough	National Science Foundation
Dan	Costa	University of California, Santa Cruz
Brittany	Croll	National Oceanographic and Atmospheric Administration
Amanda	Demopoulos	United States Geological Survey; National Ocean Mapping, Exploration, and Characterization Council
Kruti	Desai	Center for Ocean Leadership at University Corporation for Atmospheric Research
Katelyn	DiBenedetto	Smithsonian Environmental Research Center; MarineGEO
Emmett	Duffy	Smithsonian Environmental Research Center; MarineGEO
Masha	Edmondson	Center for Ocean Leadership at University Corporation for Atmospheric Research
Katie	Fillingham	Center for Ocean Leadership at University Corporation for Atmospheric Research
Steve	Formel	United States Geological Survey
Casey	Godwin	University of Michigan
Rachel	Golden Kroner	World Wildlife Fund-Oceans
Eileen	Graham	Smithsonian Institution
Roger	Griffis	National Oceanographic and Atmospheric Administration
Mitch	Hebner	National Oceanographic and Atmospheric Administration
Anson "Tuck"	Hines	Smithsonian Environmental Research Center
Matthew	Hodanbosi	National Oceanographic and Atmospheric Administration
Sarah	Kapnick	National Oceanographic and Atmospheric Administration
Holger	Klinck	Cornell University
Emily	Knight	Lenfest Ocean Program
Christian	Laspada	Regional Wildlife Science Collaborative for Offshore Wind
Pete	Leary	U.S. Fish and Wildlife Service
Alan	Leonardi	National Oceanographic Partnership Program; Integrated System Solutions
Lisa	Levin	Scripps Institution of Oceanography; Deep Ocean Observing Strategy

#### Appendix II. 2023 NOPP Ocean Life Forum Participants

Phil	Levin	U.S. Global Change Research Program; University of Washington
Mark	Luther	University of South Florida
Vera	Metcalf	Eskimo Walrus Commission
Chris	Meyer	Smithsonian Institution
Allison	Miller	Schmidt Ocean Institute
Mark	Monaco	National Oceanographic Atmospheric Association
Jackie	Motyka	Northeastern Regional Association of Coastal Ocean Observing Systems
Frank	Muller-Karger	University of South Florida
Amanda	Netburn	National Oceanographic and Atmospheric Administration; National Ocean Mapping, Exploration, and Characterization Council
Matt	Ogburn	Smithsonian Environmental Research Center; MarineGeo Program
Jim	Price	Bureau of Ocean Energy Management
Catherine	Puma	National Oceanographic Partnership Program; Integrated System Solutions
Aviva	Rosenthal	Smithsonian Institution
Michelle	Rossman	Smithsonian Environmental Research Center; MarineGEO Program
Kasondra	Rubalcava	National Oceanographic Partnership Program; Integrated System Solutions
Greg	Ruiz	Smithsonian Environmental Research Center
Kris	Sarri	Go Blue LLC
Heather	Spence	Department of Energy
Ellen	Stofan	Smithsonian Institution
Tracey	Sutton	Nova Southeastern University
Ruth	Tiffer- Sotomayor	World Bank
Julie	Traweek	U.S. Department of State
Woody	Turner	National Aeronautics and Space Administration
Alison	Watts	University of New Hampshire
David	Weeden	Mashpee Wampanoag Tribe
Lauren	Wenzel	National Oceanic and Atmospheric Administration National Marine Protected Areas Center
Timothy	White	Bureau of Ocean Energy Management
Kristen	Yarincik	Integrated Ocean Observing System Association