



Ocean Exploration
and Research

**OER Response to *Ocean Exploration 2020*
and *National Forum 2014*
Recommendations
and
*National Ocean Exploration Forum 2015***

Third Ocean Exploration Advisory Board
Meeting

October 1-2, 2015

Narragansett, Rhode Island

NOAA's Role in the National Program

“ . . . establish a coordinated national ocean exploration program within the National Oceanic and Atmospheric Administration that promotes collaboration with other Federal ocean and undersea research and exploration programs . . . ”

“ . . . establish an ocean exploration forum to encourage partnerships and promote communication among experts and other stakeholders in order to enhance the scientific and technical expertise and relevance of the national program.”

National Forum Context and Timeline

2013

- First National Forum—*Ocean Exploration 2020*—designed to begin to build the foundation for a national program
- OER zeroed out of NOAA budget
- NOAA, OAR, and OER leadership in transition

2014

- National Forum 2014 (a “mini forum”) focused on NOAA priorities
- OER in NOAA budget
- New NOAA chief scientist chaired meeting
- Clear connection between NOAA priorities and ocean exploration established

National Forum Context and Timeline

2013-2015

- Progress in many *OE 2020* and *National Forum 2014* recommendations
- *National Ocean Exploration Forum 2015* will reinforce and extend that progress

2016

- Monmouth and Rockefeller Universities host “Emerging Ocean Exploration Technology” National Forum with stakeholder (including NOAA) support

2017 and Beyond

- To be determined

Ocean Exploration 2020

120 members of the OE community met at the Aquarium of the Pacific to discuss desirable attributes of a national ocean exploration program:

- *exploration priorities set by the community*
- *extensive and dynamic network of partnerships*
- *a greater number of platforms are dedicated to ocean exploration*
- *private and public sectors advance technology*
- *citizen scientists/explorers play an important role*
- *expedition data available at little or no additional cost*
- *coordinated public engagement*

And, NOAA should act as coordinator and facilitator of “all exploration activities”

National Forum 2014

30 members of the community met at the National Aquarium to focus on NOAA's role in ocean exploration:

- *Build the value proposition for a national ocean exploration program*
- *Focus on and prioritize targets for exploration (U.S. EEZ and ECS, Arctic, newly protected areas, and Pacific Territorial Trust Areas)*
- *Execute with attention to visibility and engagement*
- *Exploit existing partnerships*
- *Use the next National Forum as a lens to focus ocean exploration*

And, “[f]or NOAA to be an effective national ocean exploration program coordinator, ocean exploration must be more visible within NOAA and more relevant to the NOAA mission.”

Approach to OEAB Request

- Worked with Jerry Schubel to engage outside experts for their views on progress in the OE 2020 theme areas:
 - Schubel
 - Mayer
 - Towers
 - Ferrini
 - Lang
 - Ortner
 - Lang
 - Koch
- Conducted an internal review to describe NOAA and OER responses to the *OE 2020* and *National Forum 2014* recommendations
- Mindful of *NF 2014* recommendations in preparation for *National Ocean Exploration Forum 2015*

Outside Experts

- *Priorities* fairly consistent since the President's Panel Report in 2000. National Forums, OET-NOAA basin workshops are good models
- *Partnerships* developing in government, foundations, internationally. But lack a way to coordinate systematically among the ocean exploration entities
- The number of *dedicated platforms* is dwindling, not increasing. But new advances in robots (underwater and aerial), sensor capabilities, and lower cost offers important new opportunities
- *Technology development* continues, but rate remains flat. Investment is problematic, so new technologies and modes of operation are needed.
- The role of *citizen science* is expanding outside traditional science. Opportunities abound with low-cost vehicles, sensors, and interest—the challenge is to move into meaningful, systematic engagement of citizen scientists.

Outside Experts

- There has been considerable progress in *data sharing* with respect to standards, automated tools, archiving, dissemination. But many institutional, financial, and technical challenges remain
- Advances and distribution of telepresence, use of social media, and new STEM incentives have expanded *public engagement*. But better partnerships and application of proven models would accelerate progress.

OER Review

- Since *OE 2020*, NOAA established the OEAB, arguably the most important step the agency could take toward a national ocean exploration program.
- *National Forum 2014* established the link between ocean exploration (and OER) and NOAA priorities, a further critical step.
- OER continued to focus on *community priorities* in all of its investment areas, with an emphasis on NOAA mission program requirements.
- OER maintained and expanded traditional external *partnerships* (BOEM) while building new internal partnerships (NMFS and NOS), reinforcing its key relationships (OET), and exploring innovative approaches (ONR, NASA).
- Investments in fly-away systems and new vehicle demonstrations like *Nereid Under Ice* respond to the need for *new platforms*
- *Technology* advancements are consideration in all OER investments, though limited funds prevent major investments

OER Review

- *citizen science* remains an area of interest for OER, but of limited investment
- NOAA and OER retained leadership in *data sharing*. NOAA's OSTP-mandated data sharing plan is approved, and OER and NESDIS continue to develop and implement data management and sharing innovations.
- OER continues to *engage the public* in EX and other OER-funded exploration expeditions through its website, social media, and education programs. OER's YouTube channel is the most popular in NOAA. Opportunities and challenges remain.



NATIONAL OCEAN EXPLORATION FORUM 2015

OceanExplorer.NOAA.gov



National Ocean Exploration Forum 2015

- National Forum process both lays foundation for a national ocean exploration program and helps to build the community
- “Community” is broad, and refers to all stakeholders
- National program participation is voluntary, and NOAA is not funded to provide the usual incentives
- National Forums are intended to encourage community buy-in and engagement
- Results guide NOAA and other ocean explorers

National Ocean Exploration Forum 2015

- *Characterizing the Unknown: National Ocean Exploration Forum 2015* is intended to drive deeper into *OE 2020* and *National Forum 2014* themes.
- Building blocks for participants:
 - keynotes and assessments
 - Federal agency requirements
 - Community explorer requirements
 - Marketplace of ideas
- Working groups use building blocks and *OE 2020* themes to design conceptual future expeditions
- National Aquarium in Baltimore co-hosts 19-20 November



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Questions?

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