

Blue Economy Subcommittee Update

**Presentation to
NOAA Ocean Exploration Advisory Board (OEAB)**

**02 October 2020
Virtual Meeting**

Background

- OEAB formed Blue Economy Subcommittee at request of NOAA Administrator (late 2019)
- Goal: recommend actionable steps which NOAA can take to contribute to doubling of nation's Blue Economy over the next decade
- BES Interim Report (highlights in backup slides)
 - Completed 1 June 2020 (requested by early June)
 - Forwarded to NOAA leadership by Ambassador Hume on behalf of OEAB
 - 16 recommendations grouped as
 - NOAA Actions
 - NOAA Acting with Other Agencies
 - Innovation Initiatives
 - Sector Initiatives
 - End of Phase 1

Next Steps & Potential BES Phase 2 Tasks

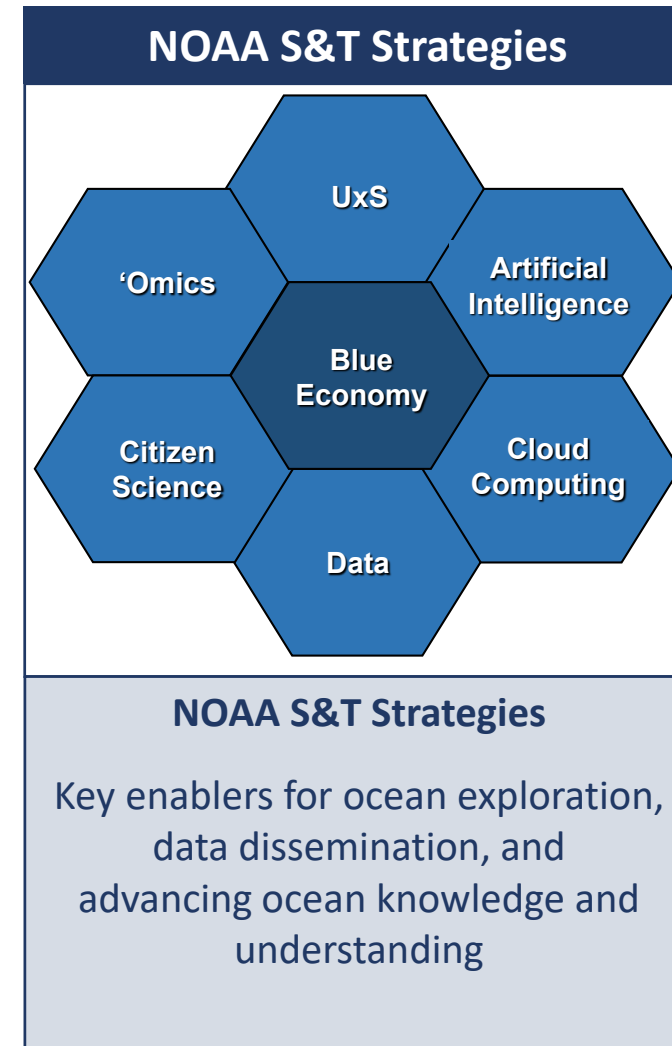
- NOAA Response to Interim Report
 - RDML Gallaudet – will discuss at meeting of NOAA Ocean & Coastal Council (NOCC) meeting 7 July 2020
- BES provided list of 5 potential Phase 2 tasks (7/5/20):
 - 1. Assist NOAA to promote, manage, & leverage partnerships with private sector**
 2. Assess and scope Ocean Innovation Initiative
 3. Provide more detailed description of ARPA-O Program
 - 4. Perform deep dive in selected high value sector of Blue Economy**
 - 5. Identify and promote potential sources for Blue Finance**
- Initial feedback - Tasks 1, 4, and 5

Events Subsequent to 7/7 NOCC Meeting

- NOAA formed NOAA Blue Economy Executive Council (NBEEC) on 7/21/20
 - Co-chairs: Brandon Elsner and Nicole LeBoeuf
 - NBEEC held monthly meetings early August and early September
 - RDML Gallaudet to brief OEAB later today
- BES met 8/18/20
 - Presentation by Jeff Adkins, NOAA Office of Chief Economist
 - Collaboration with DoC Bureau of Economic Analysis (BEA) to quantify Blue Economy
 - Identified and quantified economic activity in 10 sectors of Blue Economy
 - Presentation by Brandon Elsner, Co-Chair NBEEC
- BES decision to scope Phase 2 activities to support NBEEC
 - Potential extension of BES term (originally intended to end 12/20)

Other Recent Related Events/Activities

- NOAA finalized six S&T Focus Areas with Implementation Teams
- UxS Virtual Workshop 4 – 6 August 2020
 - Hosted by CoL
 - Proceedings available
- Workshop to Identify National OE Priorities in the Pacific



Ocean Exploration: **Essential Catalyst for the Blue Economy** **&** **A Healthy Ocean**

Presentation
by
John R. Kreider, Kreider Consulting, LLC

Workshop to Identify
National Ocean Exploration Priorities in the Pacific
21 September 2020

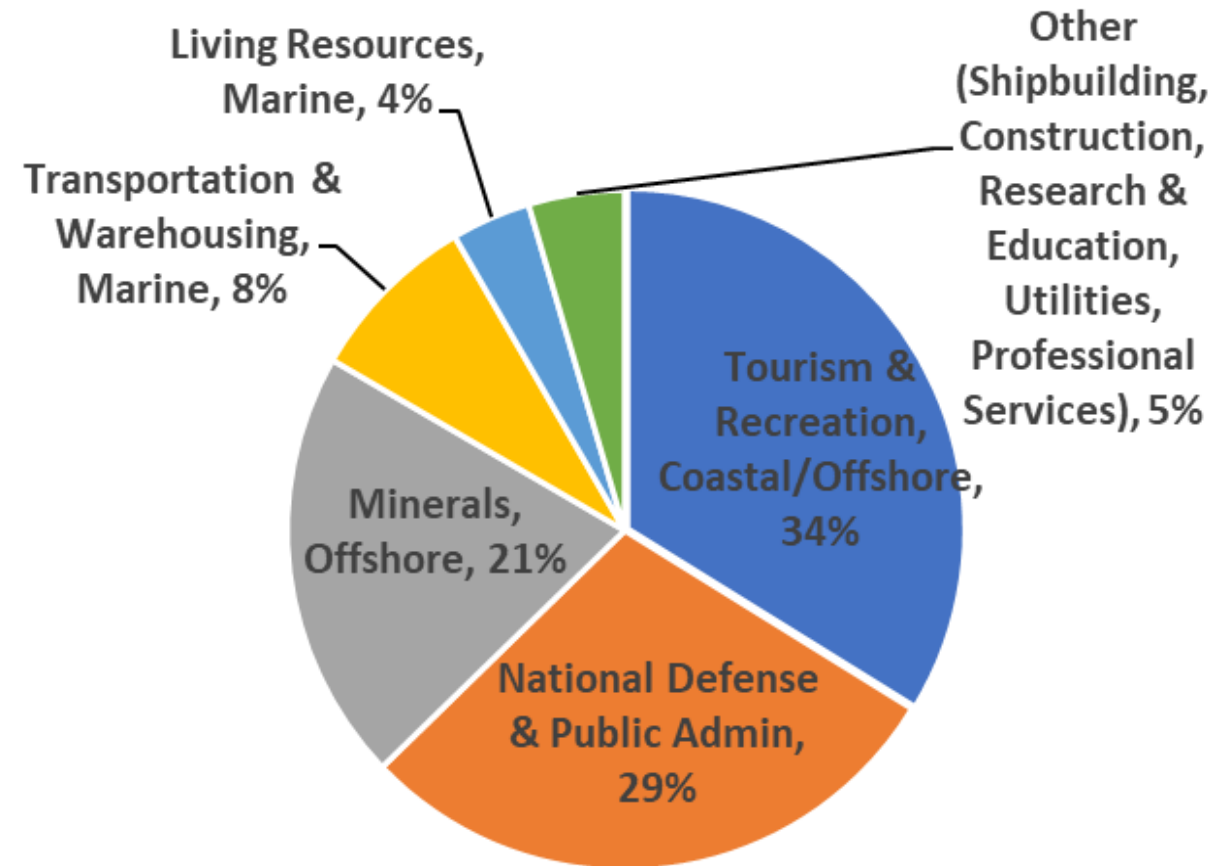
Blue Economy: What is it and How Big?

Blue Economy Definition

- Multiple, legitimate definitions – no consensus
- EU – all those activities marine-based or marine-related
- World Bank – **sustainable use** of ocean resources for **economic growth**, improved livelihoods, and jobs while preserving the health of ocean ecosystems

Blue Economy by the Numbers for US

- BE Gross Output – \$617 Billion in 2018
- 1.7% Total US Gross Output
- YOY Growth – 7.5%



Exploration as a Catalyst

First step in providing information to better understand and manage resources

Lewis & Clark Expedition



Louisiana larger than U.S.

Mission – collect “Useful Knowledge”

Combine scientific, commercial, agricultural concerns with geographic discovery and nation-building

Ocean Exploration U.S. EEZ



EEZ larger than continental U.S.

OER Mission – explore the ocean for national benefit

Make discoveries of value to promote U.S. leadership

- Geographic/mapping
- Scientific
- Economic
- Cultural

Post-Exploration: Struggle for Property, Profit, Environment, Governance

U.S. Western Frontier 19th Century



Best policy and future
stem from high priority,
informed debate, &
thoughtful leadership

Exploration is catalyst

Blue Economy 21st Century



Ocean Exploration: Essential Catalyst for the Blue Economy and a Healthy Ocean

Summary

- **Blue Economy Grand Challenge: How to maintain alignment between economic development and health of the ocean – reinforce not compete**
- **Lack of understanding of the ocean is a significant vulnerability/threat to our nation and to global health – knowing the sea is a strategic key**
- **A National Ocean Exploration Program is an essential catalyst to accelerate the Blue Economy:**
 1. **Useful Knowledge** – Push innovation for Networked Ocean of the Future to create and disseminate knowledge, enable informed debate, and inform decision makers
 2. **The Ocean: a Tier 1 Priority for the U.S.** – Act now because our National Security and global health depend on early and sustained action
 3. **Public Private Partnerships** – Sustain innovative partnerships to build trust & essential understanding among stakeholders

Backup Slides

List of NOAA OEAB Blue Economy Subcommittee Members

- John Kreider, Kreider Consulting LLC, (Oceaneering, Ret), Subcommittee Chair
- Thomas Chance, (ASV Global, Ret), (C & C Technologies, Ret)
- RADM Matthew Klunder (USN, Ret), L3 Harris
- Rob Munier, Woods Hole Oceanographic Institution
- Michael Olsen, Equinor
- Dr. Ruth Perry, Shell Exploration & Production Company
- Millicent Pitts, Ocean Exchange
- Jerry Schubel, Aquarium of the Pacific
- Shally Shanker, AiiM Partners
- Mark Stevens, Microsoft
- VADM Scott Van Buskirk (USN, ret), Van Buskirk Associates, LLC
- Dave Whaley, Independent Fisheries and Ocean Consultant

Staff

- David McKinnie, NOAA, Designated Federal Officer
- Christa Rabenold, NOAA Office of Ocean Exploration Research, Staff Support

Blue Economy Interim Report & Results

ACCELERATING GROWTH OF U.S. BLUE ECONOMY Initial Recommendations



Image Source: The Ocean Economy in 2030, OECD

An Interim Report
Blue Economy Subcommittee
Of
NOAA Ocean Exploration Advisory Board
1 June 2020

Excerpts from Summary

NOAA is in a key position to lead the Administration's efforts to increase the economic impact of the Nation's ocean and coastal resources and be at the forefront of international discussions on the Blue Economy.¹

A collaborative and dynamic strategy for **partnerships in ocean science and technology (S&T)** is critical to coordinate, focus, and catalyze a national effort to achieve the goal of growing the Blue Economy.

It is imperative that the U.S. government cannot stand by passively. It must engage now.

Follow-Up/Results

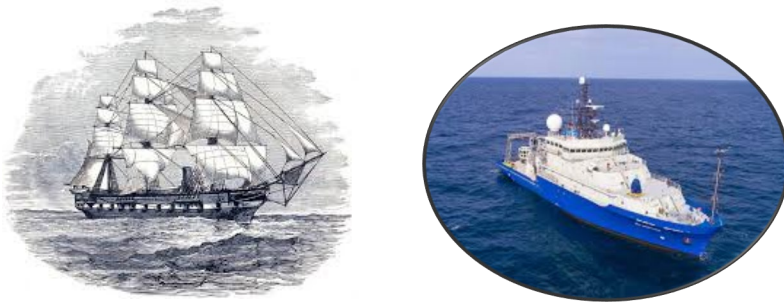
- NOAA to lead National BE Effort – top priority
- RDML Gallaudet sponsored NOAA Blue Economy Executive Committee co-chaired by Brandon Elsner and Nicole LeBouef

| | NOAA Actions |
|----|---|
| 1 | Focus on NOAA Culture and Organization to Enable Growth of the Blue Economy |
| 2 | Establish NOAA Blue Economy Special Advisor and Executive Committee |
| 3 | NOAA Ocean Exploration as a Focal Point for Economic Stimulus and Recovery |
| 4 | Promote and Leverage Partnerships with Private Sector |
| | NOAA Acting with Other Agencies |
| 5 | Convene Shareholders to Promote Blue Economy Growth by Mitigating Conflicts for Ocean Use |
| 6 | Develop and Publish Blue Economy Metrics |
| 7 | Establish and Execute a NOAA Strategic Engagement Plan to Increase Public Awareness of the Importance of the Ocean and the Blue Economy |
| 8 | Develop & Execute Overarching Strategy for Ocean Data |
| 9 | Partner with Economic Development Administration (EDA) for Improved Business Outreach |
| 10 | Increase Pilot and Demonstration Programs |
| | Innovation Initiatives |
| 11 | Establish an ARPA-Ocean Program to Foster Innovation & Commercialization |
| 12 | Create National Ocean Innovation Consortium to Accelerate Blue Economy Growth |
| 13 | Create an Ocean Innovation Initiative |
| | Sector Initiatives |
| 14 | Increase Efforts to Enhance Coastal Resilience of Human and Natural Ecosystems |
| 15 | Ensure US food security through modernized wild harvest and increased aquaculture production |
| 16 | Support Next-Generation Services for Marine Transportation and Ports |

OE as a Catalyst #1:

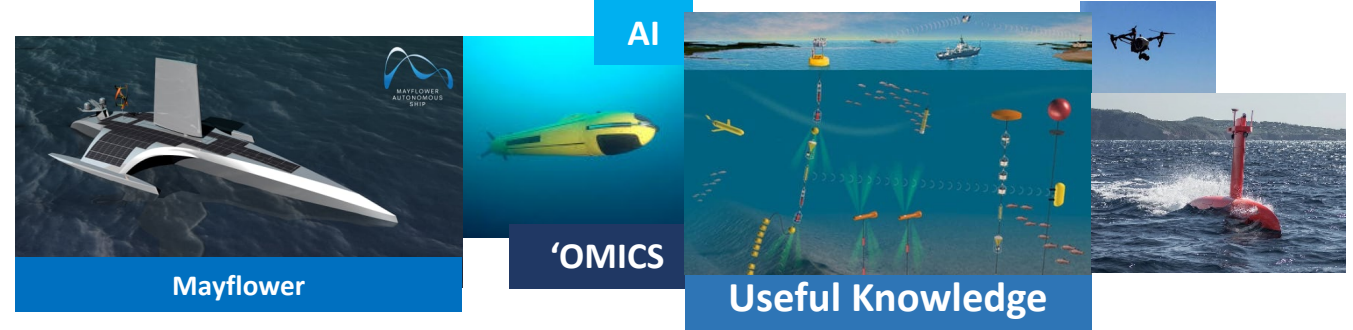
Useful Knowledge: Innovation for Networked Ocean of the Future

THREAT



- Complex ecosystem
- Ocean is under-observed
- Have techniques really progressed since *HMS Challenger*?
- Need understanding not only to protect ocean, but also to manage sustainably

OPPORTUNITIES



Push Innovation
New ways to
explore & observe

**Reach Out to
Industries of Scale**
Cost effective tools

**Diversity, Equity,
Inclusion**
Telepresence enabled

WHY CARE

Data and knowledge essential to:

- Understand complex & rapidly changing ocean system
- Inform decision makers (evidence-based decisions)
- Govern the ocean as contiguous space

OE as a Catalyst #2:

The Ocean: Tier 1 Priority for the U.S.

THREAT

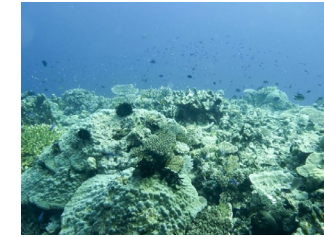


VS



1. Ocean is complex
2. Issues & returns are long term
3. Other issues and opportunities compete for resources
4. Communication gap

OPPORTUNITIES



**Increase
Public Awareness
Discoveries**

**Educate
Next Generation
Encounters**

**Educate
Policy Makers
Impact**

**Economic
Opportunities
Entrepreneurs**

WHY CARE

Blue Economy and health of ocean are critical for U.S. security and global health:

- Global competition for military, economic, diplomatic power – ocean is strategic key
- Use understanding to make evidence-based decisions and set ESG milestones

OE as a Catalyst #3:

Public Private Partnerships (PPP): Essential for Success

THREAT



- Inadequate understanding of each other
- Self-interests
- Struggle for control

OPPORTUNITIES



Many PPPs

Philanthropists & Cooperative Institutes
Shared objectives

Banks/Investors



Corporations

ESG Criteria:
(Environment, Social, Governance)
Pressure for investment \$
(lifeblood of industry)

Private Sector Incentives



Data as a Service

Innovative Contracting
OE-birthed spinoffs
(ala space expl)

WHY CARE

No one sector can succeed alone:

- Need private financing (incentify investment)
- Valuable technology spin-offs
- Engage for understanding / Build trust now