

SECOORA Annual Meeting



New IOOS Strategic Plan

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

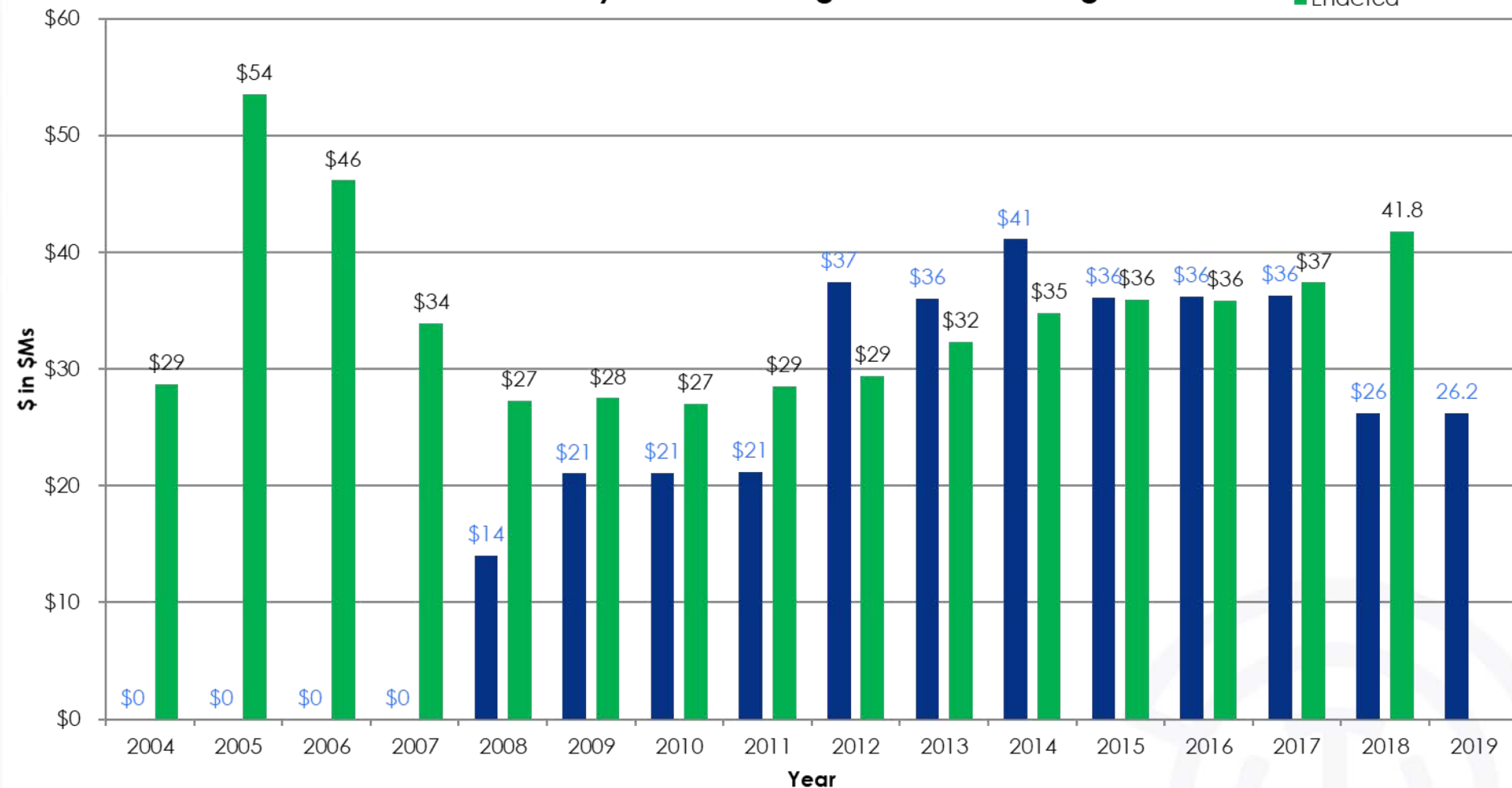
Mission - To produce, integrate, and communicate high quality ocean, coastal and Great Lakes information that meets the **safety, economic, and stewardship needs** of the nation.



U.S. IOOS Enacted and President's Budgets FY04-19

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

■ Request
■ Enacted



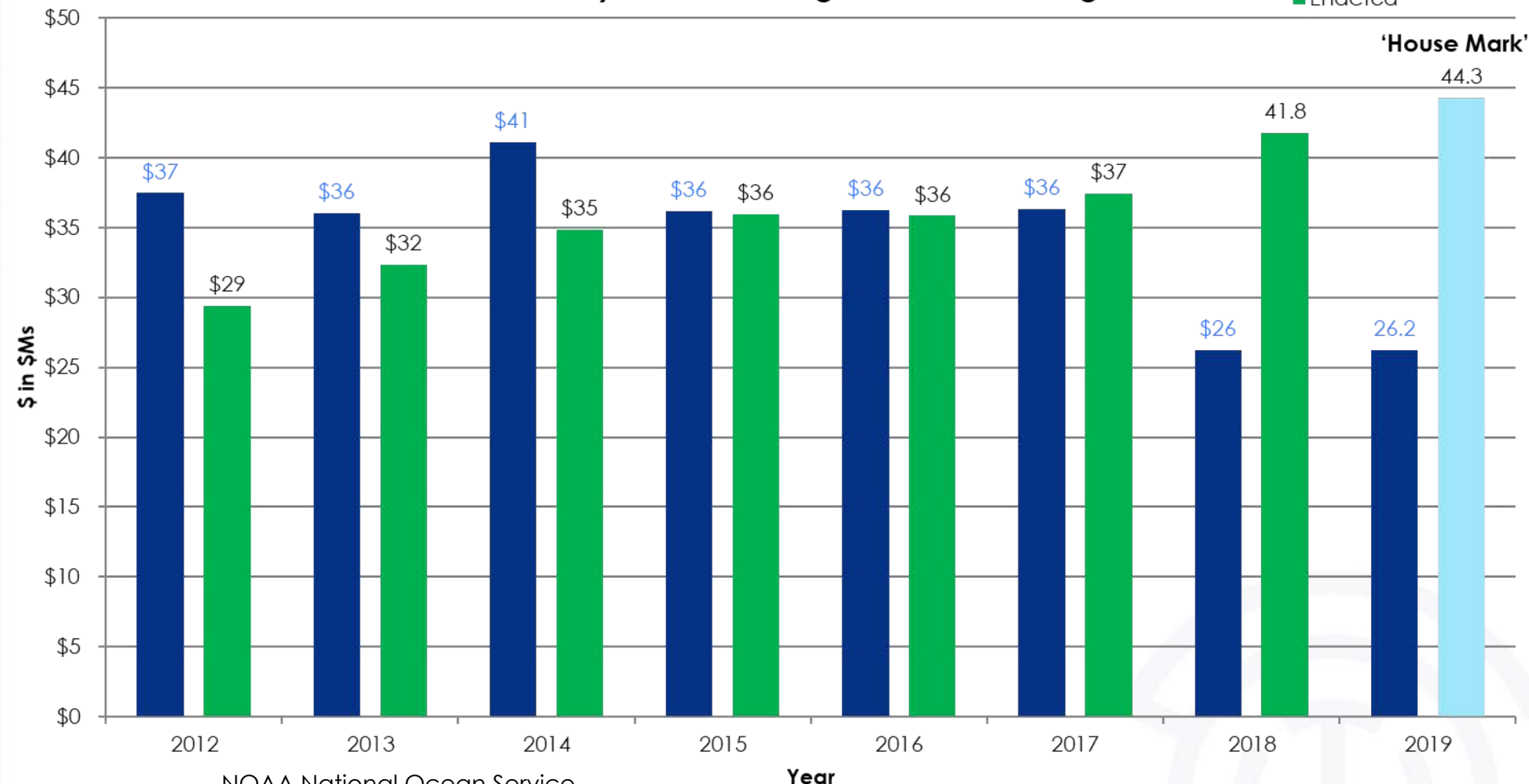
NOAA National Ocean Service

- Navigation, Observations, and Positioning: 'National IOOS' component FY18 Omnibus \$6.8M & 'Regional IOOS Observations' \$35M
- Estimated Enacted levels are 'post rescission' totals for each year
- 'Request' = the President's Budget Request

U.S. IOOS Enacted and President's Budgets FY12-19

NOS IOOS Request & Appropriation History
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■ Request
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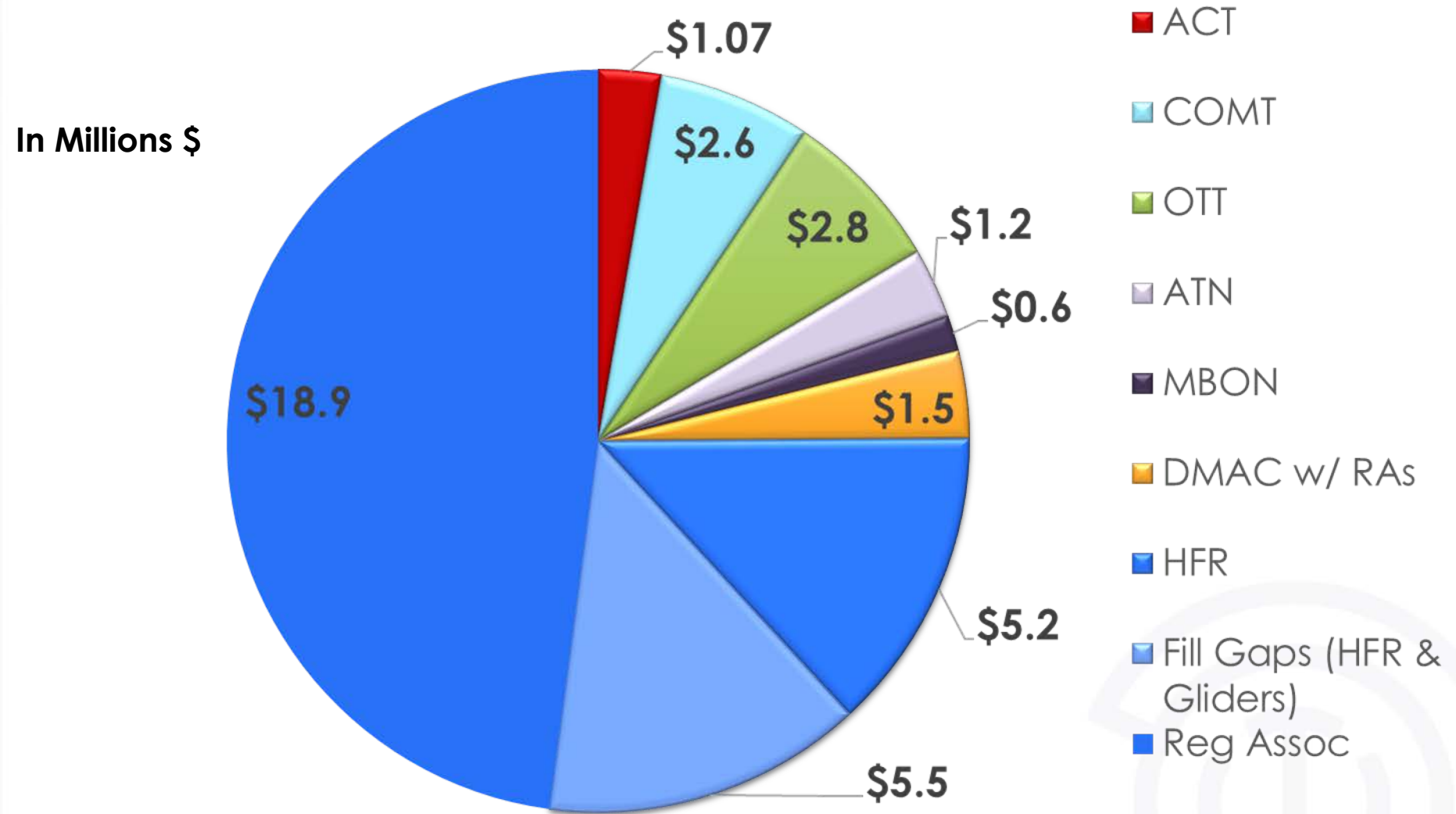


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- 'Request' = the President's Budget Request
- FY19 House Mark is first, next is Senate Mark, then Conference...

DRAFT FY 2018 IOOS spend plan

Draft FY2018 Spend Plan (\$39M Extramural)



Preliminary plan subject to final appropriations and approvals (multiple sources)

Does not include IOOS plan for \$5M– Office Ops

IOOS Supporting the Blue Economy

May 23, 2018 | SECOORA Annual Meeting | Carl Gouldman



OECD Ocean Economy 2030

Organisation of Economic
Cooperation and Development



- Ocean based industries generated USD \$1.5T in 2010 & 31M FTE in 2010
- 2030 Ocean industry projected to \$3 Trillion & 40M FTE

IOOS supports this growing ocean economy by providing

- Collaboration
- Economic valuation
- Boosting innovation

<http://www.oecd.org/futures/oceaneconomy.htm>

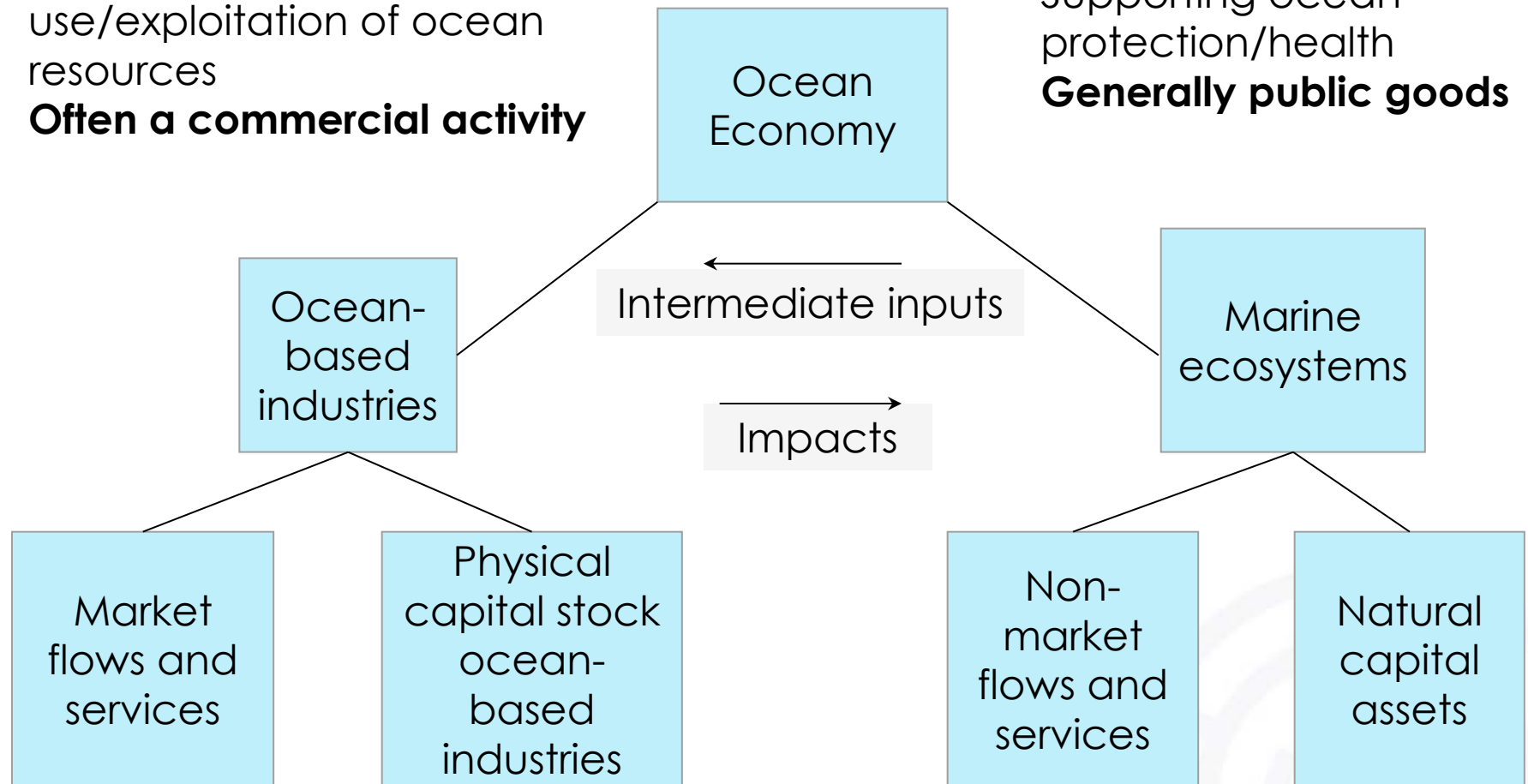
The benefits

Supporting ocean
use/exploitation of ocean
resources

Often a commercial activity

Supporting ocean
protection/health

Generally public goods

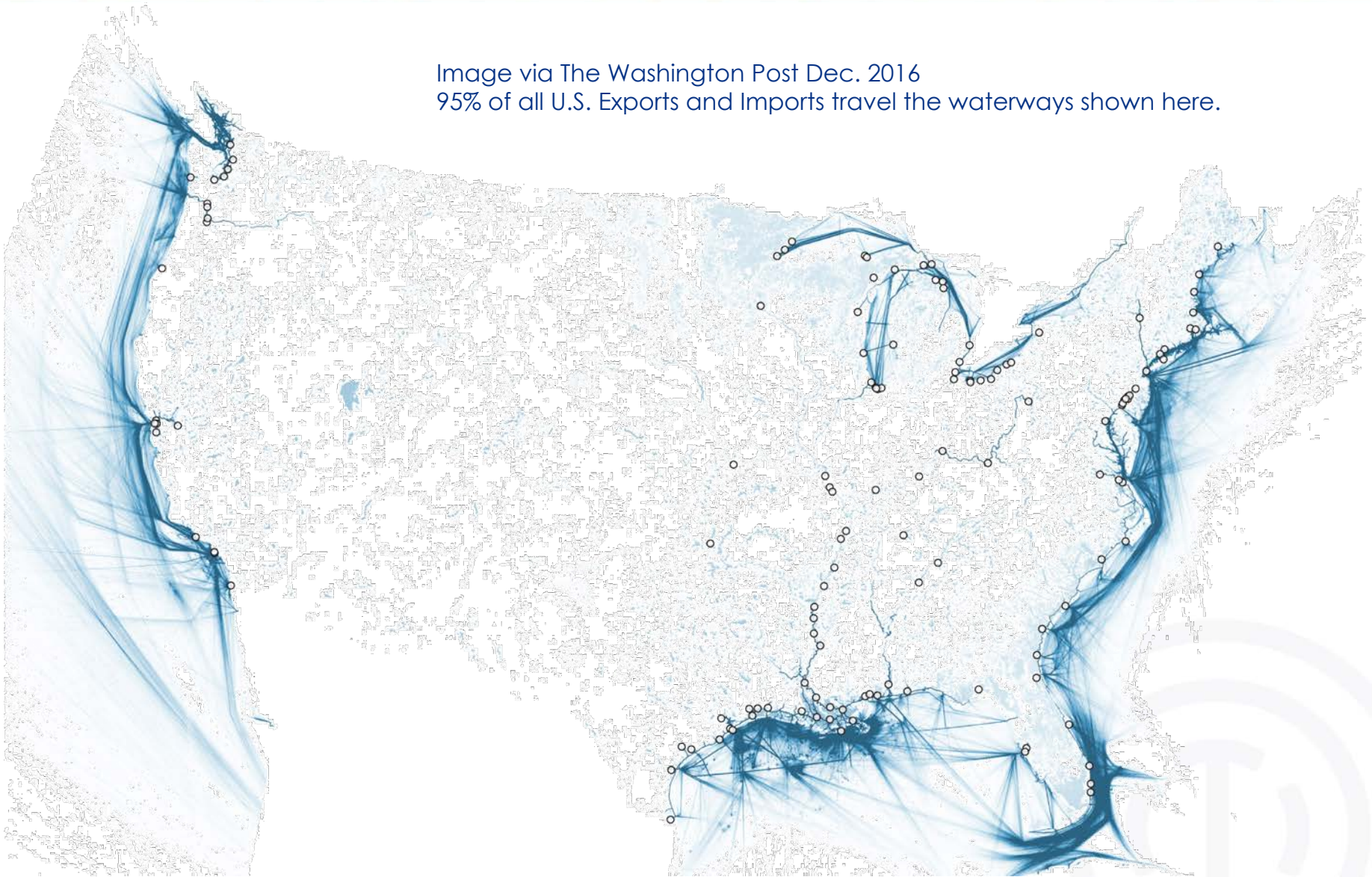


Source: OECD (2016)

National Lifeline: U.S. Ports & Waterways

Image via The Washington Post Dec. 2016

95% of all U.S. Exports and Imports travel the waterways shown here.



Ocean Enterprise (Round 1)

A study of US business activity in ocean measurement, observation and forecasting

The Ocean Enterprise: Background

Objective - Determine the breadth and value of the US Ocean Observation Enterprise.

- Understand the scale and scope of business of ocean measurement, observation and forecasting.
- Several studies of breadth and value of “weather enterprise.”
- No equivalent studies for the marine enterprise at the national level.
- Raise visibility and awareness of ocean sector’s economic importance

The study is sponsored by NOAA’s National Ocean Service and US IOOS®.
Conducted by ERISS Corp and The Maritime Alliance.

Why this is important

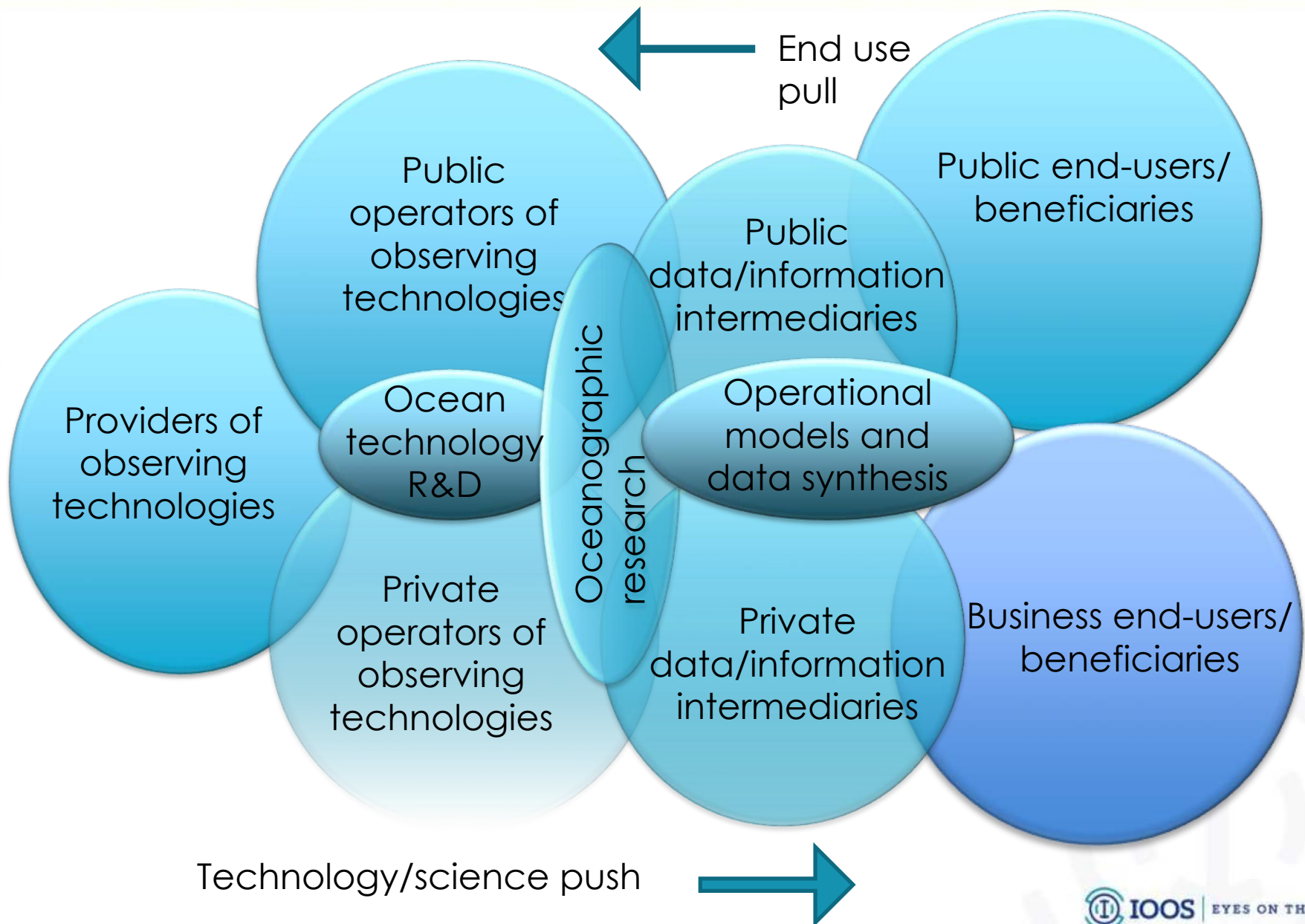
Ocean information underpins the blue economy providing safety, economic and environmental benefits.

Until this study, very little information about this component of the economy

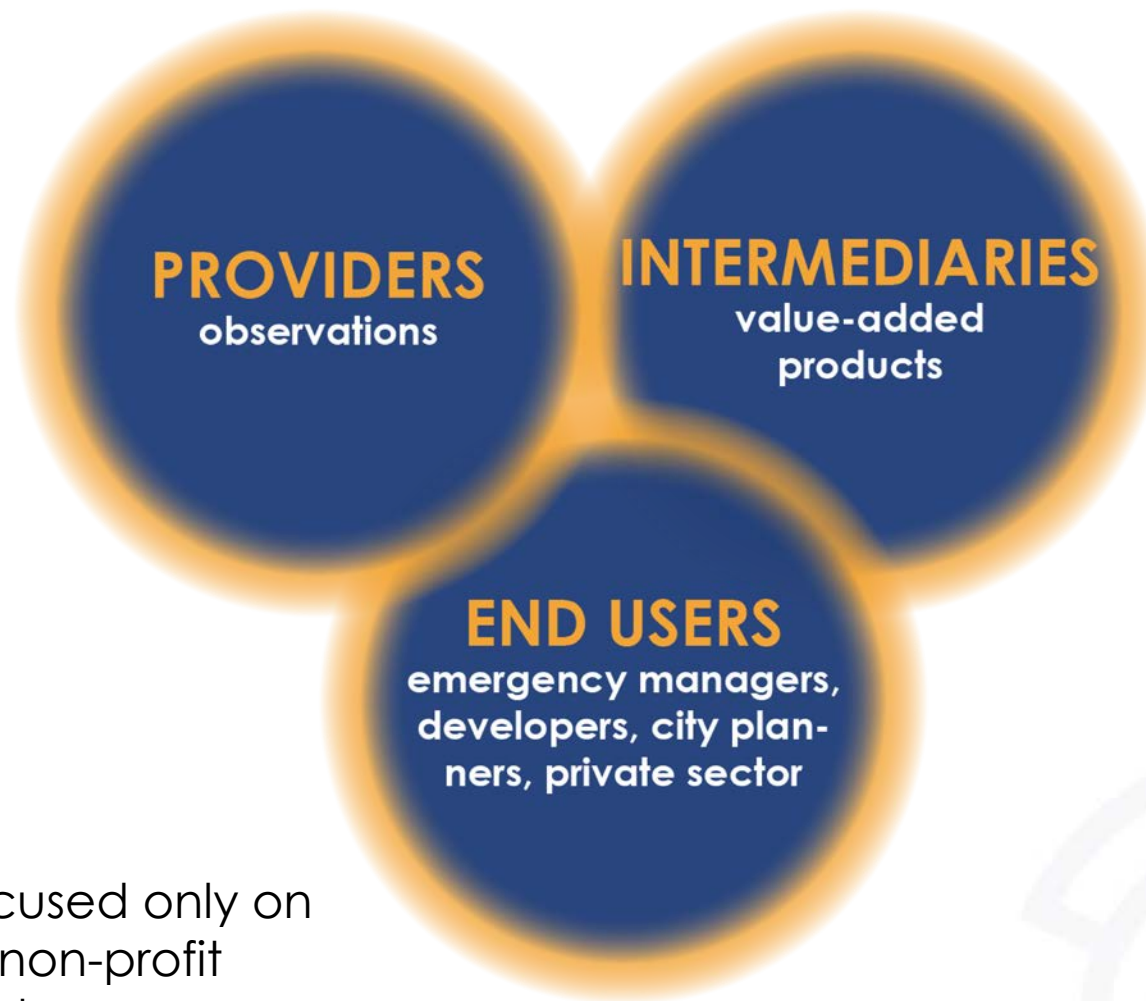
The North American Industry Classification System (NAICS) precludes properly quantifying this enterprise in public records.



A view of the observing system



Stakeholders

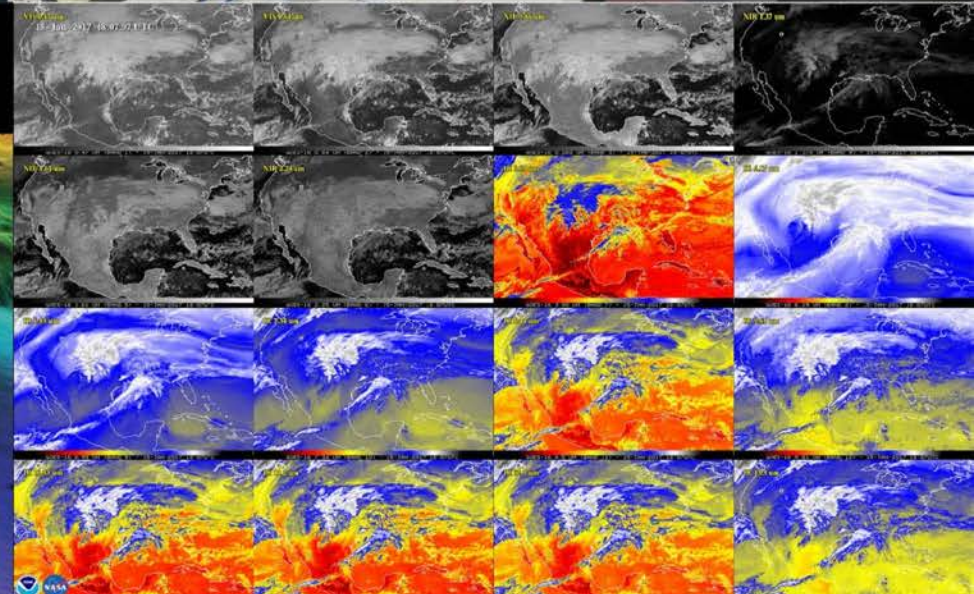
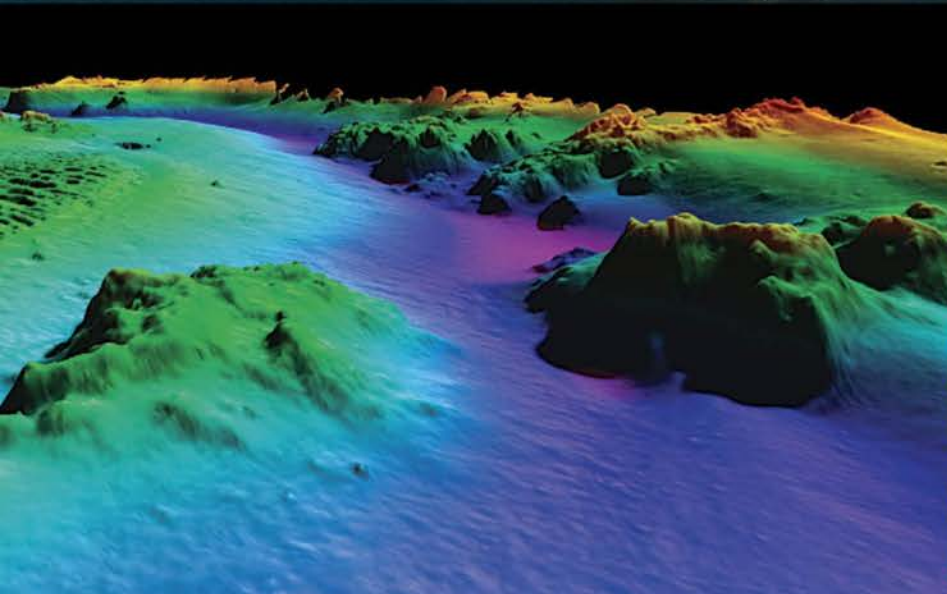
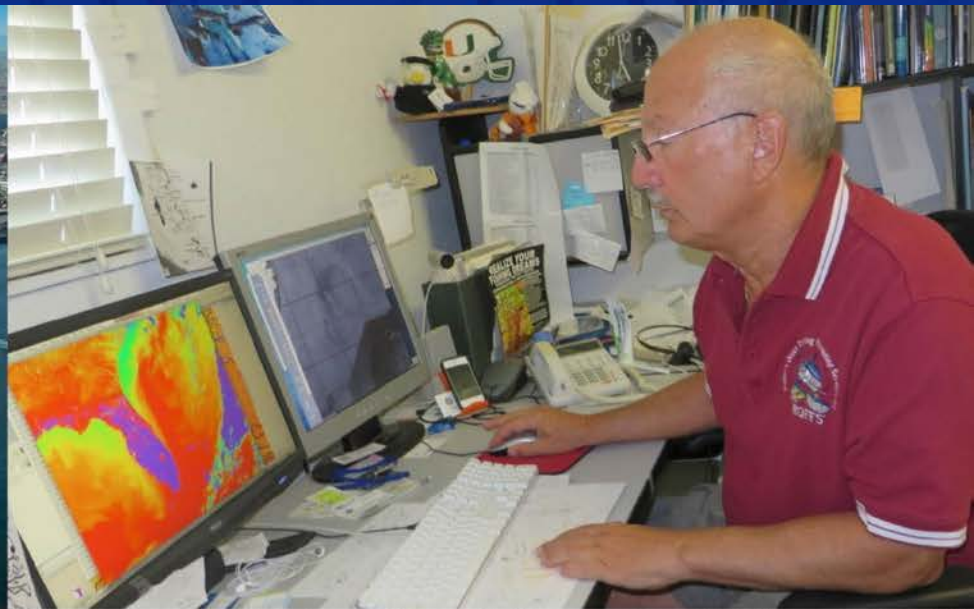


This study focused only on private and non-profit Providers and Intermediaries.

Providers



Intermediaries



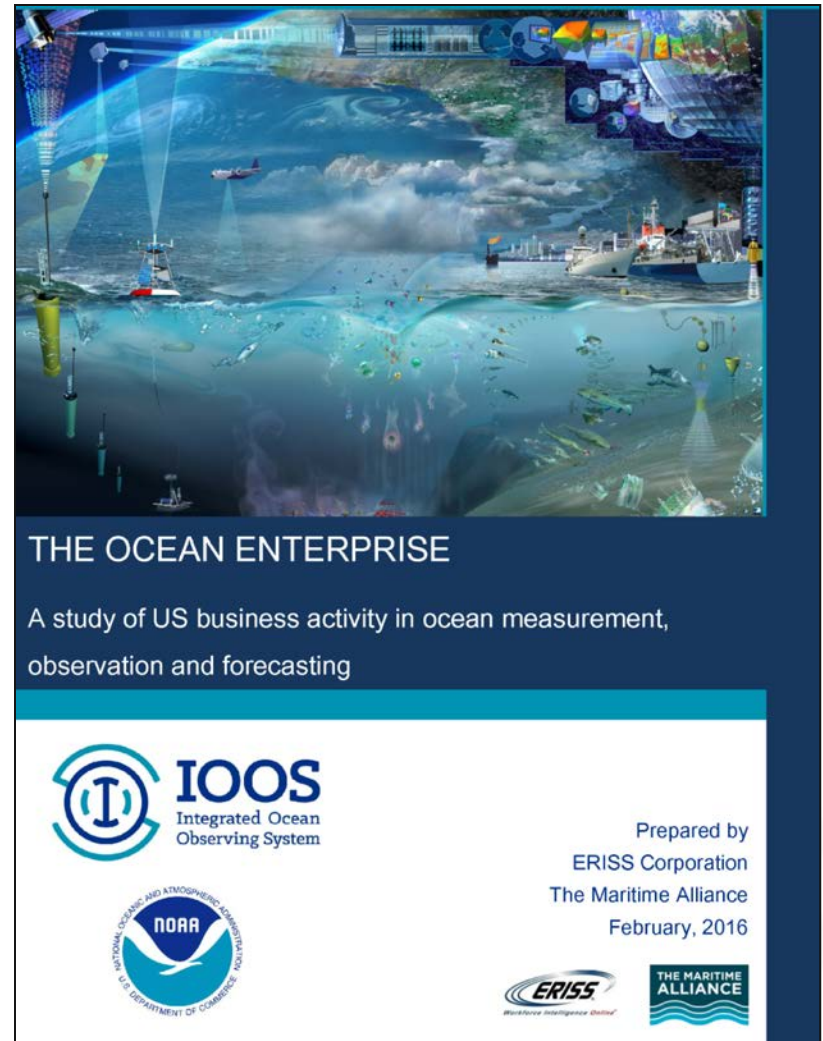
Ocean Enterprise

February 16, 2016 release

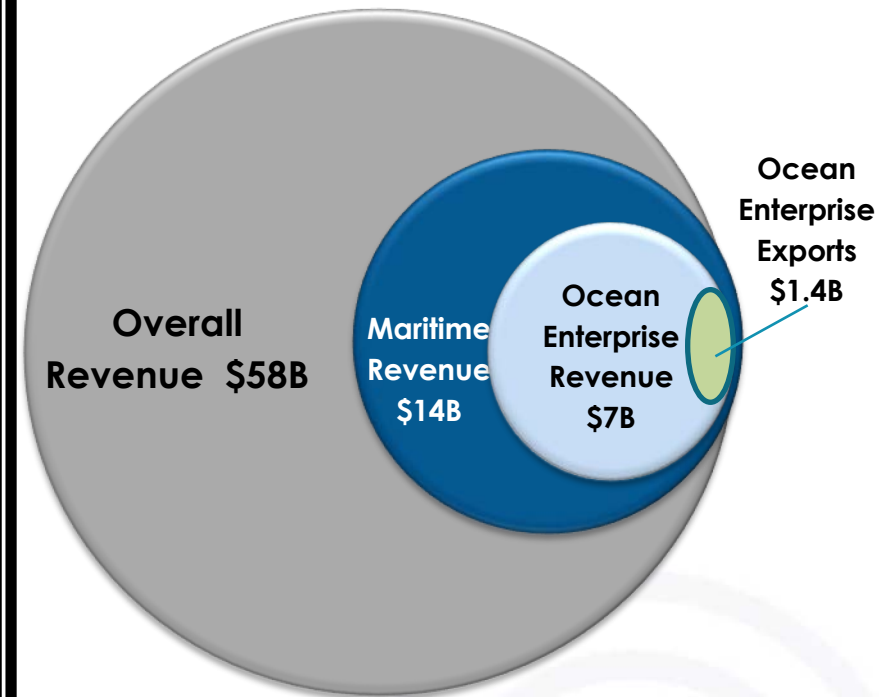
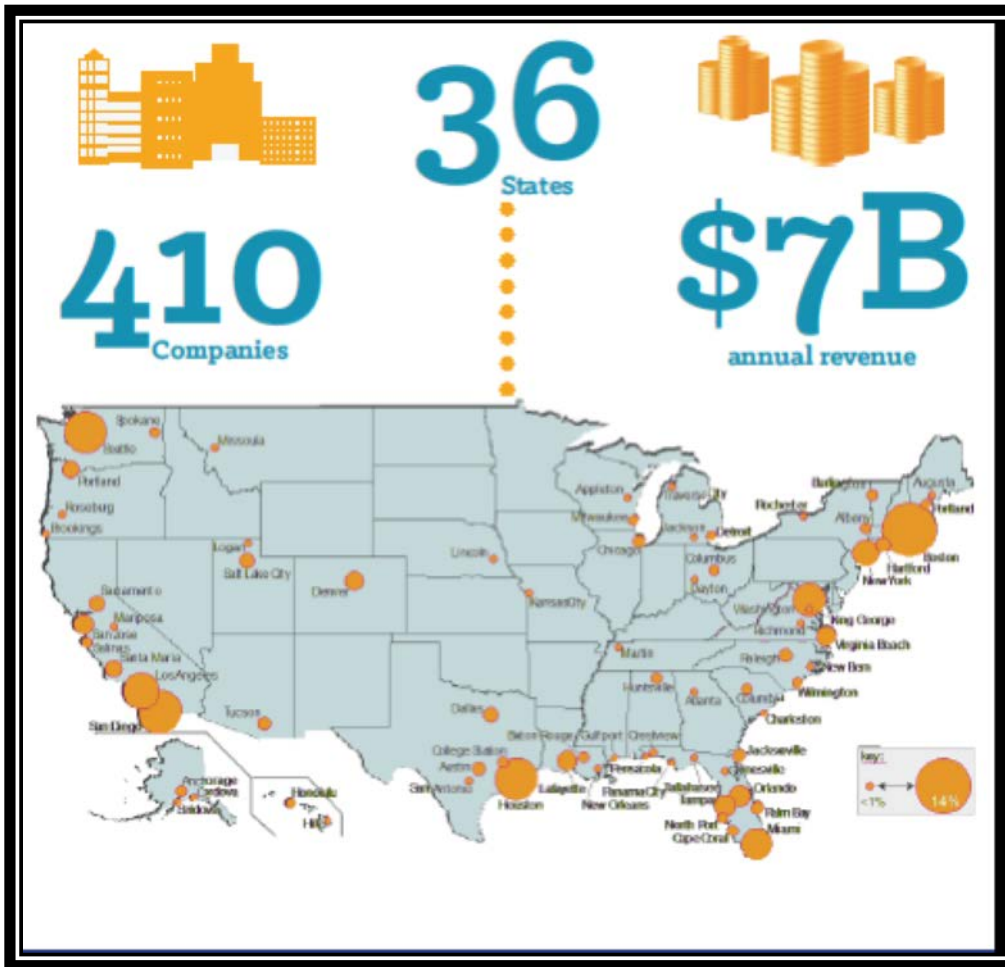
Results:

- First national effort to capture details of this part of the blue economy
- We estimate **\$7B in Ocean Enterprise** annual revenue from private and nonprofit **providers** and **intermediaries**. Of that, **\$1.4B in exports**.
- Company locations in **36 states**
- Ocean Enterprise employment* can be projected as high as **30,000 jobs**.
- **17 Market Sectors** with wide diversity of company sizes and locations

*Employment estimates have high level of uncertainty because respondents only provided employment range for their 'overall' business activity and did not break it down by sub-components



US IOOS/NOAA Ocean Enterprise Study



Market Sectors

Represents 'overall' activities of companies

Market sectors in which a company is engaged

(with Provider/Intermediary split in parenthesis)

Intermediary majority in fishing, water, engineering, & coastal protection

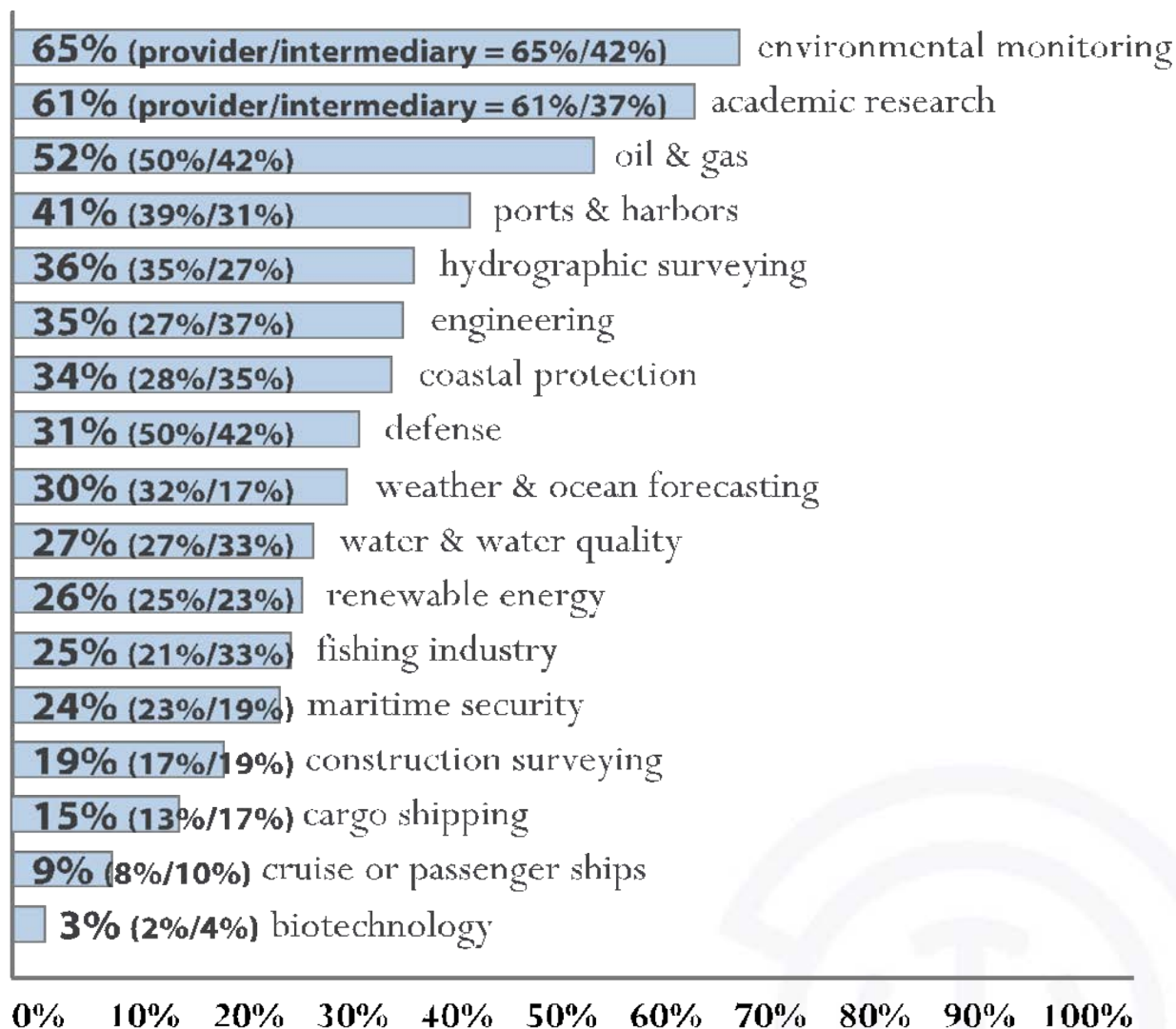


Figure 17. % Respondents' who responded "yes" to chief market segments

Ocean Enterprise (Round 2)

A study of US business activity in ocean measurement, observation and forecasting

Follow up to Ocean Enterprise study



- Maintain industry contact database
- Plans for Canadian study
- Follow up to 2015/16 study

Ocean Enterprise - What next?

- Dialogue with providers and intermediaries
- Round 2 - Follow up to the Ocean Enterprise study (2018/19)
- Work with The Maritime Alliance (TMA) and the International Trade Administration (~\$650M in 2017 exports)
- Links to trade associations, professional bodies
- Economic studies of the benefits of ocean observations & engagement with the OECD Ocean Economy project



US IOOS FY2018

A forward look of priorities today

FY2018 IOOS Priorities & Highlights

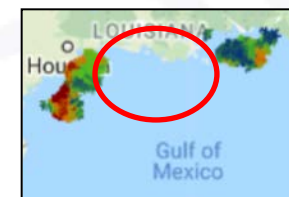
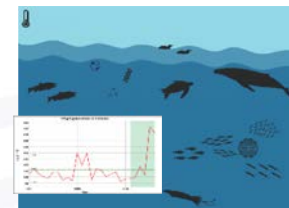
- **NOAA Weather Act** – weather and water prediction
- **Blue Economy** – innovation and growth (fisheries, navigation, health)
- **NOAA Water Initiative** (NOS/IOOS modeling and decision support) <http://www.noaa.gov/water>
- **NOS Modeling Strategy** – Upgrades to Coastal Ocean modeling



IOOS Delivering Benefits

#customerfocus

- ICOOS Act / Strategic Plan / IOOC Metrics Task Team
- IOOS R&D (R₂O)- Coastal and Ocean Modeling Testbed / Ocean Technology Transition / Alliance for Coastal Technologies
- Animal Telemetry Network and Marine Biodiversity Observation Network (towards 'operations')
- Data and Data Assembly Centers – 'Metocean', Gliders, ATN, HF Radar, & Waves
- **Filling IOOS gaps** –
 - FY17 + \$1.2M installing HF radars in LA/mouth of Mississippi River and Pacific northwest outer coast.
 - FY18 + \$5.5M filling gaps in HF radars and enhancing and deploying gliders for multiple missions



Questions

Thank you

Carl.Gouldman@noaa.gov



Ocean Enterprise Study

http://www.ioos.noaa.gov/ioos_in_action/oceanenterprise_feb2016.pdf

Thank you SECOORA

U.S. IOOS: Program Overview

Authorizing legislation

Integrated Coastal Ocean Observing System (ICOOS) Act (P.L. No 111-11, March 2009)

Mission Areas

- Predicting Weather & Climate variability
- Safe and Efficient Transportation and Commerce
- Preparedness and Risk Reduction for Coastal Communities
- Healthy ecosystems and water quality



Supporting Decisions Everyday

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 *refreshed* Core Variables

PHYSICS

- Bathymetry
- Bottom character
- Currents
- Heat flux
- Ice distribution
- Salinity
- Sea level
- Surface waves
- Stream flow
- Temperature
- Wind speed and direction

BIOGEOCHEMISTRY

- Acidity
- Colored dissolved organic matter
- Contaminants
- Dissolved nutrients
- Dissolved Oxygen
- Ocean color
- Optical properties
- Pathogens
- Partial pressure of CO₂
- Total suspended matter

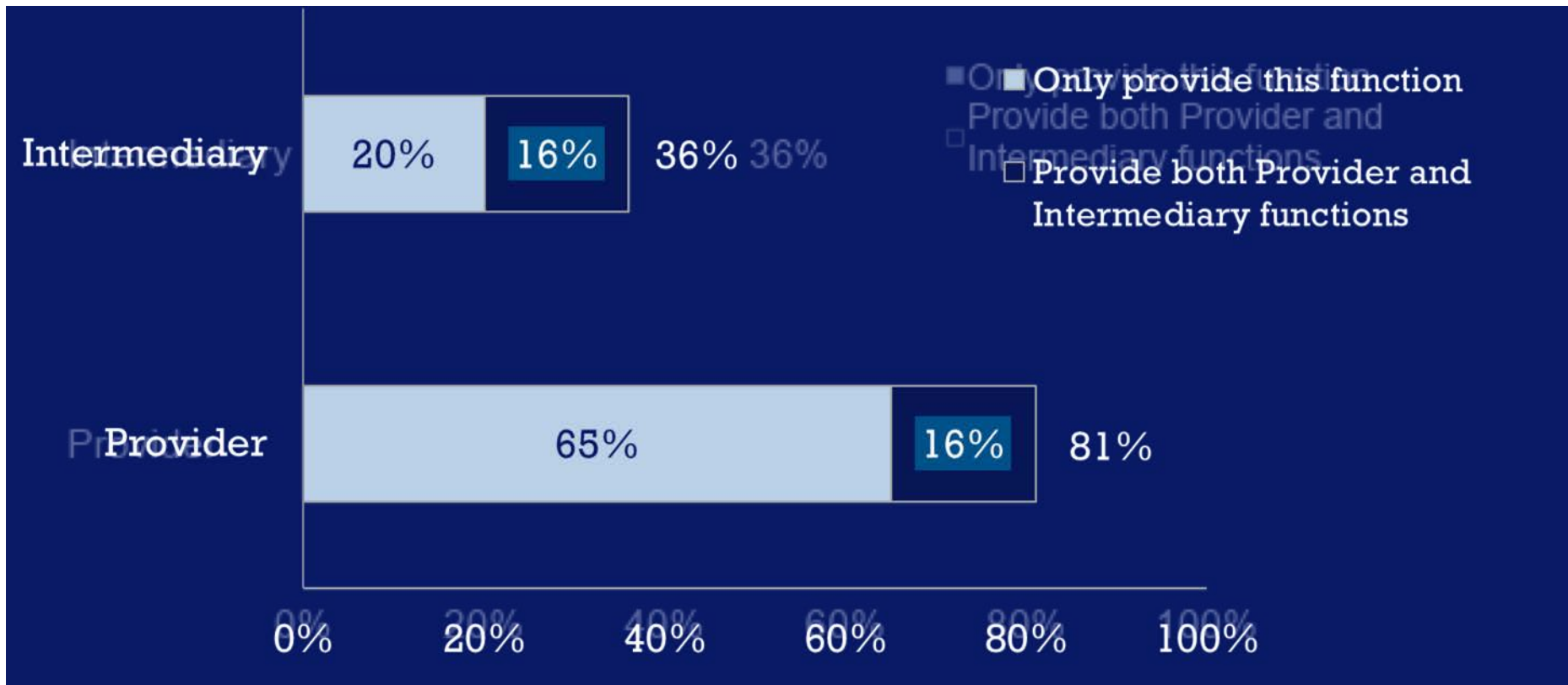
BIOLOGY & ECOSYSTEMS

- Biological vital rates
- Coral species and abundance
- Fish species/abundance
- Invertebrate species and abundance
- Marine mammal species/abundance
- Microbial species/abundance/activity
- Nekton diet
- Phytoplankton species/abundance
- Sea birds species/abundance
- Sea turtles species/abundance
- Submerged aquatic vegetation species/abundance
- Sound
- Zooplankton species/abundance

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



Ocean Enterprise Study 2015: Functions



81 % of the companies we surveyed were providers
36% were Intermediaries