



**NOAA**

# Motivations, Approaches, and Practice for Valuing EO - NOAA Perspective

National Oceanic and Atmospheric Administration  
July 2019



# NOAA's Mission and Vision

## MISSION

### *Science, Service, Stewardship*

- To understand and predict changes in **climate, weather, oceans and coasts**
- To share that knowledge and information with others
- To **conserve and manage coastal and marine ecosystems and resources**

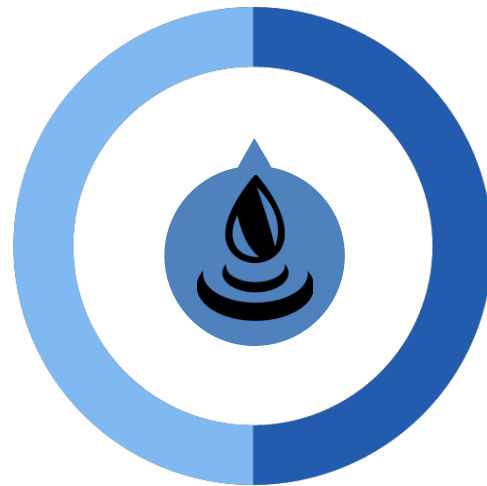
## VISION

- Building the **Blue Economy**
- Implementing the **Weather Act**

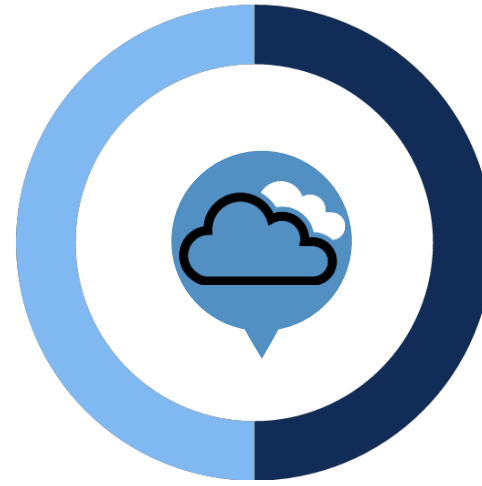


# NOAA Strategic Priorities

Observations account for \$2.7B of NOAA's \$5.45B budget

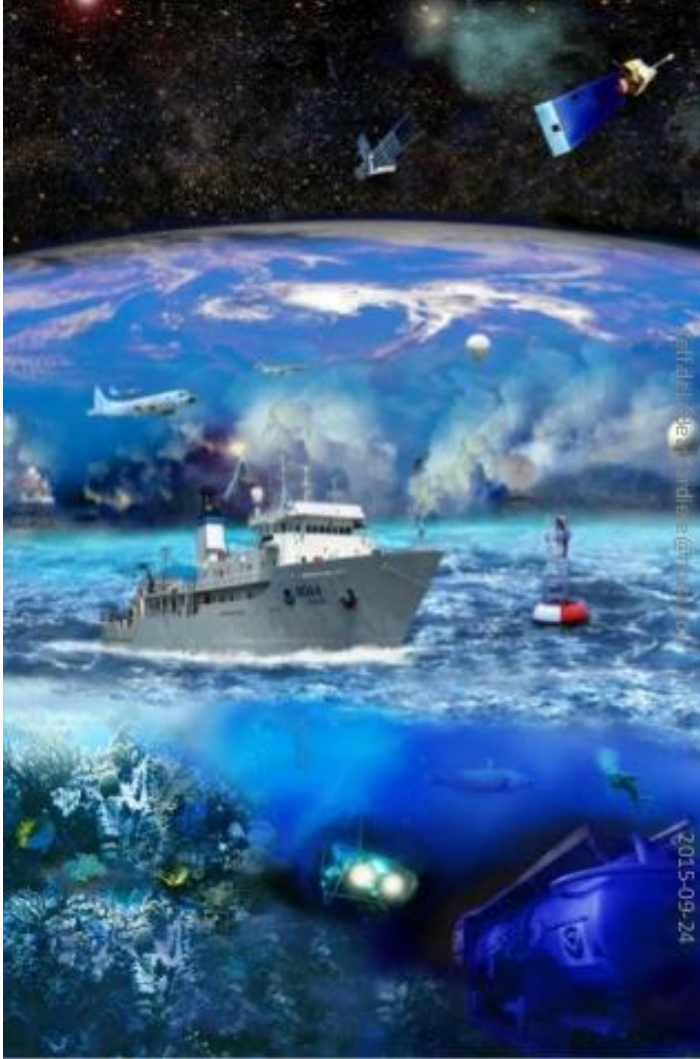


**Blue  
Economy**



**Implementing  
the Weather  
Act**

# NOAA Observations



- 18 Satellites
- More than 150 weather radars
- 3 buoy networks
- More than 200 tide gauges
- 17 ships
- 10 aircraft
- Unmanned systems
- Human Observers
- And more...

***Plus...data from global partners and systems.***

# NOAA's Motivation

## EO Socio-Economic Analysis Strategic Plan

- Understanding the value created by observations and data produced is a challenging problem, requiring long-term, systematic investment in gathering information and strengthening analytical capabilities.
- Robust economic analysis can inform investment decisions, support budget requests, and identify targeted investments that improve cost efficiency or increase impact.

# NOAA's APPROACH - Step 1

1. **Identify** and understand the EO **users**
2. Work with NOAA's governance and strategic councils to provide guidance on priorities, information and resources that can be leveraged to **support analysis, document review coordination and approval.**
3. Leverage existing resources to **engage end users** within and outside the agency (e.g. TPIO, NCEI)
4. Undertake coordinated effort to identify where data about end users is currently collected in NOAA. What information is readily available for socio-economic studies?
5. Determine gaps in knowledge about data users
6. Use currently available data to study sensors/communities of interest

# NOAA's APPROACH - Step 2

1. Identify future needs and implement strategies to improve user engagement and tracking going forward
  - i. Target ***collection of socio-economic data*** to ***support priority analysis***.
  - ii. Identify all platforms where EO data is distributed and collect information about users on those platforms including:
    - who is using the data, (government, universities, businesses, and individuals)
    - demographic information about these users (eg education, industry etc)
    - what data are being taken and how much,
    - the cost of accessing the data (time, money, equipment needs)
    - When are the data accessed
    - For what purpose are the data accessed, (the more specific the better)
2. Develop communication materials to tell the story

# Current Valuation Initiatives

## ECONOMIC VALUATION

- Space Weather (NESDIS)
- **Technology Partnerships Economic Impact (OAR)**
- Big Data Project Economic Assessment (NOAA wide)
- Valuation of Satellite Data (NESDIS)
- **Value of Marine Vessel Observations (OMAO)**
- **IOOS Ocean Enterprise Study (NOS - IOOS)**
- **Benefits of Ocean Observing Systems (NOS - IOOS)**
- Benefits of Impact-Based Decision Support Services (NWS)
- **Precision Navigation (NOS - IOOS)**

## COORDINATION/COLLABORATION





# Space Weather



- **Issue:** Time-variable conditions in the near-Earth space environment including the sun, solar wind, magnetosphere, ionosphere, and thermosphere can interrupt/damage important infrastructure (electrical grid, airlines etc.)
- **2017 study** identified potential economic impacts in several industries
- **Ongoing work** - effect of space weather on the power industry and interventions that can be made in reaction to NOAA Space weather forecasts that depend on the L1 satellite



**NOAA**

**Thank You.**

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# KEY QUESTIONS

- What is the product?
- Who uses the product (**user**)?
- How do they use it? What decision is made?
  - e.g. Public sector - disaster response, regulatory
  - e.g. Private sector - agriculture, insurance, tourism, transportation, energy;
- What gets better because of the use of this product?
- How much better do things get?

