



# Stewarding NOAA's Data: How NCEI Allocates Stewardship Resources

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# Outline

- NCEI Mission
- The PARR driver for open access to research results
- NESDIS Core- Mission Priorities
- NCEI Resource Allocation Model
- NCEI Partnerships

# National Centers for Environmental Information (NCEI)

- Responsible for hosting and providing access to one of the most significant archives on Earth, with comprehensive oceanic, atmospheric, and geophysical data
- From the depths of the ocean to the surface of the sun and from million-year-old sediment records to near real-time satellite images
- Nation's leading authority for environmental information





# NCEI Mission and Vision

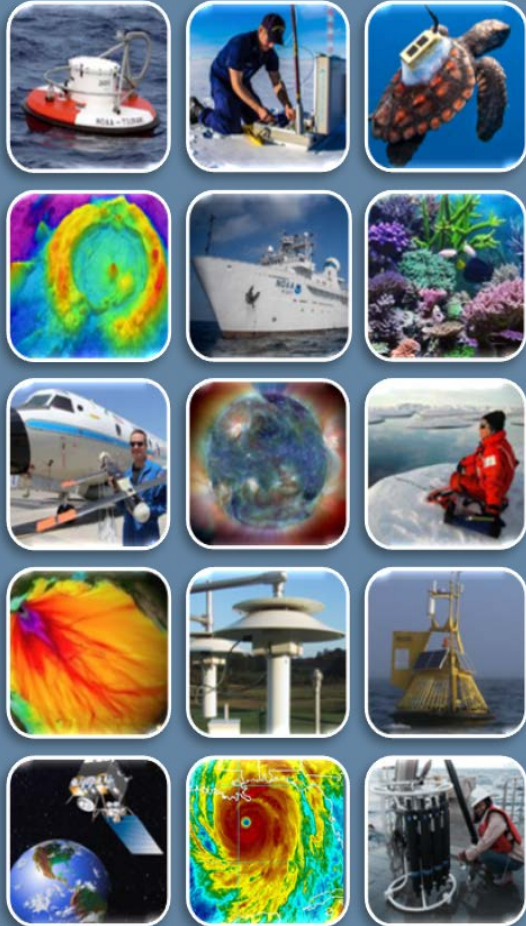
- **Mission:** Steward of the Nation's Environmental Information
- **Vision:** Be the Nation's Trusted Authority for Environmental Information



NCEI supports U.S. environmental, societal, and economic well-being through stewardship of the Nation's treasure of weather, climate, coastal, oceanic, and geophysical information.

# CCOG Environmental Intelligence Hub

## Earth Observing Systems



CCOG Science:  
integrating relevant  
data into  
authoritative and  
useful  
environmental  
intelligence



Regional, national, and  
global data products  
and foundational  
datasets rely on  
international data and  
international  
collaboration



# The Push for Open Access to Data

- Data management drivers

- ["Building a 21st Century Digital Government" Directive and Strategy](#)

- Principles for an information-centric approach to manage data (23 May 2012)

- [OMB Memorandum on Open Data Policy - Managing Information as an Asset](#)

- Framework to involve agencies in building or modernizing information systems to maximizes interoperability and information accessibility (9 May 2013)

- [White House OSTP Memorandum Increasing Access to the Results of Federally Funded Scientific Research \(PARR\)](#) and the NOAA plan in response to the PARR:

- “NOAA will leverage existing Data Centers and will not create new ones as part of this Plan”; NOAA data producers will submit their data to the National Data Centers for long term preservation; and “... long term preservation and access...are guaranteed only by the NOAA National Data Centers” (22 February 2013 and 2014).

- [Executive Order “Making Open and Machine Readable the New Default for Government Information”](#)

- Mandates “that data are released to the public in ways that make the data easy to find, accessible, and usable” (9 May 2013)



# PARR Background

February 2013 OSTP direction:

*...each Federal agency with over \$100 million in annual conduct of research and development expenditures to develop a plan to support increased public access to the results of research funded by the Federal Government.”*

- Stated preference for agencies to work together to develop these plans
- Plans to lay out objectives for access to both scientific publications and scientific data



# PARR Drivers

Key drivers for this push toward increased access

- Maximization of the impact and accountability of the Federal research investment;
- Enhancement of innovation and competitiveness by maximizing the potential to create new business opportunities

After OSTP and OMB review and revision period, plans are now policy and implementation is underway





# NESDIS Core

- Develop a top-level framework that will help NESDIS articulate the NOAA NESDIS core mission, making it clear how our core mission supports the NOAA mission.
- The focus for this effort will be to articulate a logic framework that will allow NESDIS to organize our program expenses and budget discussions.
- 4 Priority “bins” based upon impacts, mandates and agreements, linking observations and services to NOAA Mission Outcomes

# Core Priority Bins

Bin 1	Clearly codified in law or Federal policy as a mandate to DoC/NOAA	Codified in Administrative or Departmental policy or Agreements	Clearly a key input to a Department of Commerce Primary Mission Essential Function	Mission Critical to NOAA	Mission Critical to NOAA customer who has signed agreement with NESDIS AA or higher	Long term preservation and basic access for NOAA-Managed Critical Observing System Data	
Bin 2				Mission Optimal to NOAA	Mission Optimal to NOAA customer who has signed agreement with NESDIS AA or higher	Long term preservation and basic access for Critical Observing System Data not managed by NOAA and not stewarded elsewhere	Information products essential for NOAA mission outcomes
Bin 3				Mission Enhancing to NOAA		Preservation and basic access for data that enhances NOAA mission objectives	Information Products that are mission enhancing for NOAA and/or NOAA standard, prime or principal customers
Bin 4				Supplemental for NOAA		Preservation and basic access for data used by NOAA and not stewarded elsewhere	Information Products that are mission critical/ enhancing to NOAA data consumers

# NCEI Resource Allocations

- Purpose: To establish a framework for how NCEI sets priorities and allocates base resources to achieve its mission.
- Audience:
  - NCEI employees: Focus the workforce and create decision-making transparency
  - NESDIS and NOAA LOs: Align NCEI efforts to best support NESDIS strategic plan and NOAA mission
  - External partners and stakeholders: Provide clarity on what resources NCEI will provide, and where partner resources will be needed

*Guidelines are structured around the Tiers of Stewardship*





# Guidelines for Base Resources

- Tier 1: Long Term Preservation and Basic Access
  - Data priority, volume, complexity
- Tier 2: Enhanced Access and Basic QA
  - Conforms to NCEI's data standards; established user requirements; support to higher tiers
- Tier 3: Scientific Improvements
  - Broad user base; multiple applications; proof of concept/innovation
- Tier 4: Derived Products
  - Established user requirements from important community; Leverages project funds; Supports important socio-economic outcomes
- Tier 5: Authoritative Record
  - Requirements from NESDIS, NOAA or DOC; critical to NOAA mission; external requirements require project funding
- Tier 6: National Service and International Leadership
  - Fulfillment of DOC/NOAA/NESDIS agreements; supports establishment of internationally accepted data standards;





# Guidelines for Partner Resources

NCEI works extensively with partners and through grants to enhance our mission. In considering the use of external funds, the following are key guidelines that will inform project funded activities NCEI engages in.

1. Leverages base resources to meet requirements.
2. Enhance an existing capability by supporting acceleration and/or augmentation of projects NCEI has already approved.
3. Develop or explore options for a new capability.

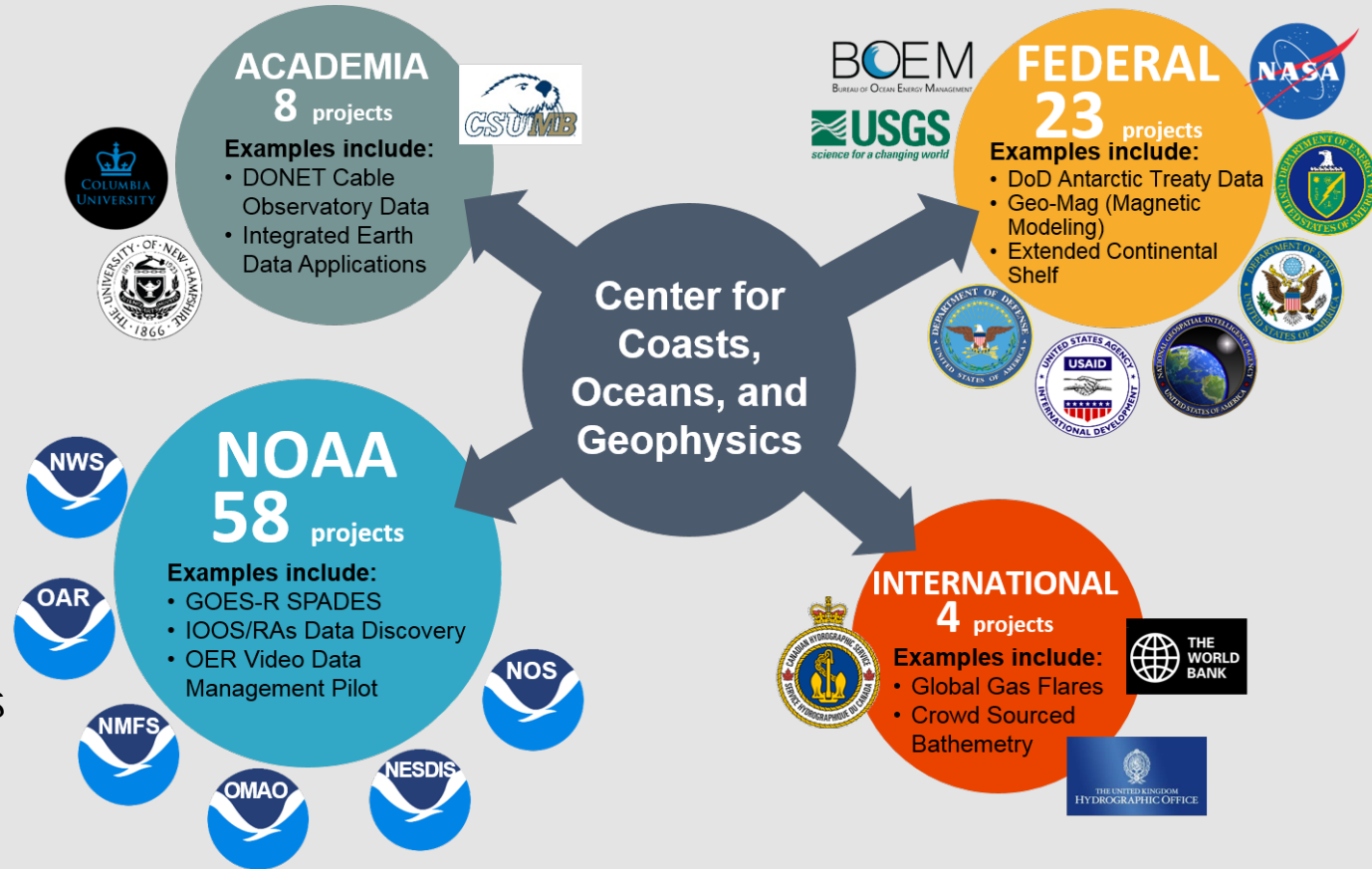


# CCOG Partnerships

- NCEI stewards foundational datasets that serve as the backbones of earth and space science applications, in support of NOAA and NESDIS core priorities
- CCOG has extensive working partnerships across NOAA, the federal and state governments, and internationally
- CCOG's portfolio encompasses all of our tiers of stewardship, from basic data archive and preservation to developing quality controlled datasets and authoritative data products

# CCOG Partnerships

- CCOG partnerships are extensive and documented
- Our deliverables are documented in service level agreements, statements of work, and competitively funded proposals
- Many of our partnerships are funded externally





# Conclusions

- NCEI stewards and produces a broad range of foundational datasets.
- Each of these data sets has been developed to serve distinct user communities.
- Several products are interdependent on each other, adding value along the way for the designated user communities they serve.





# Back-up

# Bin 1- Mission Critical (Priority 1)

Capabilities/observations/services **critical for NOAA to meet its mission goals** and for **protecting life, property and the Nation's economic interests**, or **critical to operational capability and support to other government users to protect life and property** (e.g. DHS, DoD)\*. Not having these capabilities/observations/services would **prevent** the Agency from meeting its mission or preclude satisfactory mission accomplishment.

- Criteria (one or more of the following)
  - Clearly codified in law or Federal policy as a mandate to DoC/NOAA
  - Codified in written agreement (NESDIS AA level) if NOAA is not primary driver for Bin 1 ranking
  - Clearly a key input to a Department of Commerce Primary Mission Essential Function
  - Long term preservation and basic access for NOAA-Managed Critical Observing System Data
  - Requires **high levels of mission assurance** to ensure these observations are available to meet requirements and actively identifies and mitigates risks
  - **NESDIS builds** the core capability (spacecraft, instrument, ground, data/information products) required to deliver the observation or service and designates it as a Key Performance Parameter. It may be supplemented by partner or commercial data.

\* Items fully reimbursed from another agency are not included in Bins. However, items that are not reimbursed (usually because they support NOAA) and have an important use by another US agency are ranked slightly more impactful than if they were used by NOAA alone.



# Bin 2- Mission Essential (Priority 2)

Capabilities/observations/services **essential to NOAA mission goals** and **protecting property and the Nation's economic interests** or **essential to operational capability and support to other government users to protect life and property** (e.g. DHS, DoD)\*. Not having these capabilities/observations/services would **severely degrade** the ability of the Agency to achieve satisfactory mission accomplishment.

- Criteria (one or more of the following)
  - Codified in Administrative or Departmental policy or Agreements
  - Codified in written agreement (NESDIS AA level) if non-NOAA is primary driver for Bin 2 ranking
  - Preservation and basic access for NOAA Critical Observing System list data not in Bin 1 and not stewarded elsewhere
  - Information products essential for NOAA mission outcomes
  - NESDIS requires **moderate to high levels of mission assurance** to ensure these observations are available to meet requirements and actively identifies and mitigates risks
  - Provided by NESDIS-managed systems, partner contributions or commercial purchases.

\* Items fully reimbursed from another agency are not included in Bins. However, items that are not reimbursed (usually because they support NOAA) and have an important use by another US agency are ranked slightly more impactful than if they were used by NOAA alone.



# Bin 3- Mission Essential (Priority 3)

Capabilities/observations/services that **enhance NOAA mission objectives** but are **not required to meet them**. Not having these capabilities/observations/services would **degrade** the ability of the Agency to optimally fulfill its mission.

- Criteria
  - Preservation and basic access for data that enhances NOAA mission objectives.
  - Information Products that are mission enhancing for NOAA and/or NOAA standard, prime or principal customers.
  - NESDIS requires ***moderate to low levels of mission assurance***
  - Provided by NESDIS-managed systems or partner contributions or commercial purchases.





# Bin 4- Supplemental (Priority 4)

Capabilities/observations/services that **supplement NOAA mission objectives** but **do not measurably enhance them**. Not having these capabilities/observations/services has the ***potential to degrade*** the ability of the Agency to optimally fulfill its mission.

- Criteria
  - Information Products that are mission enhancing to NOAA data consumers
  - Preservation and basic access for data used by NOAA and not stewarded elsewhere
  - NESDIS requires low levels of mission assurance
  - Provided by NESDIS-managed systems or partner contributions or commercial purchases.