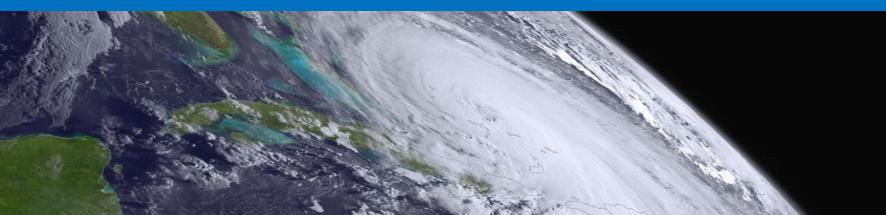


NOAA

Kim Valentine NOAA Geospatial Information Officer (GIO) NOAA's Digital Data Landscape -Transforming Data into Actionable Information

Hydrographic Services Review Panel (HSRP) Digital Twin Panel Session September 27, 2023





Today's Topics



Federal Open Data Requirements



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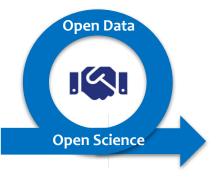
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- NOAA's Data Governance Framework
- **Geospatial Data & Mission Support**
 - Data Challenges
- **NOAA Open Data Dissemination**
- Key Takeaways

Maximizing the value of NOAA data



FAIR principles





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Federal Landscape on Open Data

- M-13-13: Open Data Policy
- Foundations for Evidence-Based Policymaking Act
- Geospatial Data Act
- Federal Data Strategy
- **FAIR Principles** Findable, Accessible, Interoperable, Reusable
- Open Science / Open Data
- Interagency Equitable Data Working Group
- Government Information Services Freedom of Information Act (FOIA) and Information Quality Act (IQA)

Evidence Act Phase II - Open Data Access & Management

- Make each agency <u>data asset</u> <u>available in an open format;</u>
- Make public data assets available under an <u>open</u> <u>license</u>;
- Maintain a <u>comprehensive</u> <u>data inventory</u>; Federal Data Catalogue;
- Develop and maintain an
 <u>Open Data Plan</u>; and
- Engage the public in using publicly available data assets



NOAA Data Governance Implementation



NOAA Data Governance Committee

- Expanded data governance scope
- Data Licensing Task Team

Assistant Chief Data Officers (ACDOs)

 Mission-Area data governance and management leads

Data Policy Framework

- Substantial update to existing procedural directives and policies
- Open Data Licensing Policy



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Blueprints for the NOAA Data Infrastructure (2018-22)



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NOAA's Data Enterprise - Continued Growth & Progress (2023 >)



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Data are foundational to the mission of the National Oceanic and Atmospheric Administration (NOAA) Observations form the basis of NOAAs products are services: these are constrained with the bottom of the search of the star of the amophere and bypoint. These observations are large for a variety of activities such as analyses and predictions of the earth system, nautical charts, and support to decision making for safety of life and property, fisheries and ecosystem management, the Blue Economy, and any number of other NOAA missions. Each of these products and services, in turn, generate their own data, all of which must be effectively imanged by the agency.

NOAA Enterprise Data Community







IDAA Data Stephenic Action Dis

The NOAA Data Strategy

Strategic Goals

LLADERNIP - Align data management leadership release across the organization.
 COVERNARCE - Goven and manage data strategically to most effectively streamed the US support investment.
 OVENDRA: Share data as openity and widely as possible to promote maximum inilization of NOAA data.
 AULINDRA CLARATY - Fromote data innovation and quality improvements to facilitate science and support data strategication.

 COLLABORATION - Engage stakeholders and leverage partnerships to maximize the value of NOAA data to th Published: Relv 2020

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NOAA Data Strategic Action Plan

This Data Strategic Action Plan serves as a **readmap for implementation of the NOAA Data Strategy**, beginning with the top priorities for PT22-PT23. This action plan will establish a modernized and unified NOAA data enterprists in support of the missions access NOAA. Including doce occonstants on with the NOAA science and technology focus areas (Uncrewed Systems, Artificial Intelligence [AI], Omics, Cloud, and Citizen Science).

Final Draft Approved by the NEC in June 2022 - A final PDF including signatures will be posted ASAP

NOAA's Enterprise Data Community Site: sites.google.com/noaa.gov/noaa-data

Handbook

ed Oceanic and Atmospheric Administration (NOMA) Administrative Grader (NAG) 212-152

Nanagement of NOAK's Data and Information Data Management Directives Handbook dasaver dever. HOA das Gewennen Conntine (660) This Internation is in Information of 180-213. Stift water and a data of The International Information of 180-213. Stift water and a data of a sense





<u>NOAA Data Management</u> <u>Directives Handbook</u>

NAO 212-358 establishes the NOAA Data Management Policy. The purpose of the policy is to ensure data are treated as a strategic asset and managed to realize the maximum value from NOAA's investment in observations, modeling, and research per the NOAA Data Strategy.

This <u>Data Management Handbook</u> assumes the full authority of NAO 212-15B to provide guidance and details on how the policy is to be implemented superseding the NOAA Data Management <u>Procedural Directives</u>

The Handbook defines requirements, supports the tracking of performance objectives to understant the current state of data management and progress towards our data management goals. The intenof the handbook is to outline procedures that Assistant Chief Data Officers (ACDoa), data managers, program managers, project leads, data stewards, and hata analysts, or any other roles involved in data life cycle management must take to meet the purpose of the NAO.







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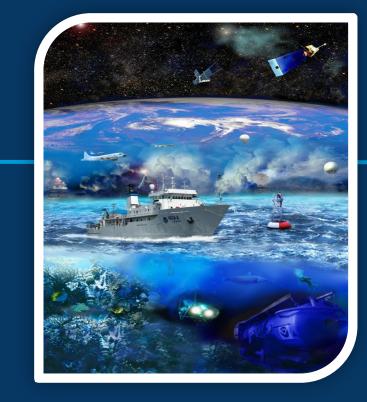
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Geospatial is in our DNA





Geospatial data & technologies provide the framework to collect, store, analyze, and disseminate 'NOAA's Environmental Intelligence'





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Without a geodetic control "base map" layer, GIS

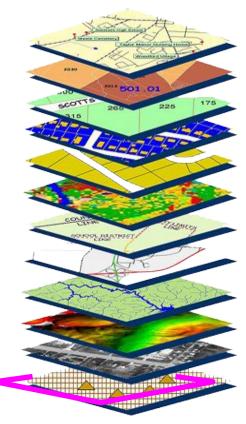
Accurate maps begin with accurate coordinates!

Geodetic Control (NSRS) is the foundation layer

for all geospatial products.

National Spatial Reference System (NSRS)

- Geodetic control needs to be more accurate than any survey or map which builds upon it.
- NOAA's geospatial data must be tied to the new NSRS Framework



NOAA's Geospatial Data > National Framework

and Climate

Weather



Nautical Charts and Shoreline



NOAA Data Strategy

Environmental data is the foundation of NOAA's mission. Through optimizing the availability and use of operational, research, and administrative data, NOAA is positioned to increase the value of data as a strategic asset in all facets of the organization. The overarching goal of the NOAA Data Strategy is to achieve readiness for tomorrow's data landscape. Imagery and Satellites



Coastal Ecosystems



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Geodetic Control



Bathymetry and Coastal Elevation



Department of Commerce // National Oceanic and Atmospheric Administration // 9

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Gallery

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Scene

Groups



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Enabling Access to Authoritative Geospatial Data



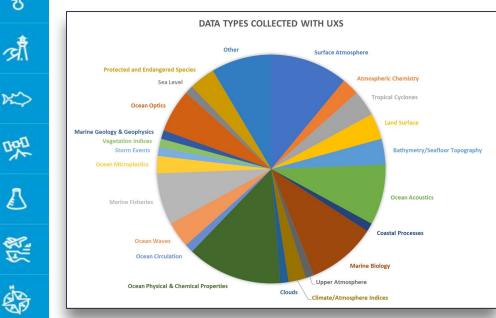
Welcome to NOAA's GeoPlatform

The NOAA Geoplatform provides access to a wide suite of trusted geospatial data, services, and applications that help support NOAA's mission. It is designed as a creative space to collaborate and share authoritative data in a variety of formats and to help translate that data into useful information to support decision making.

https://noaa.maps.arcgis.com

- Real-time weather data
- Climate data
- Navigational charts
- Tides, currents, water-levels
- U.S. shoreline data
- NOAA satellite data
- Observational data
- Emergency response imagery
- More.....

Data Challenges



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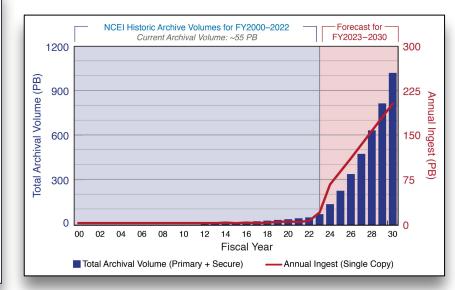
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New Data Collection Platforms & Technologies ...



Leads to Growing Data Volumes

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Open Data Dissemination

- Moving data to the cloud is one of the top requests we have from our users
- Goal is to remove obstacles to accessing NOAA data and keep up with increasing demand
- NOAA has an 8-year partnership with Amazon, Google, and Microsoft to provide cloud hosted data that are
 - 1) Open

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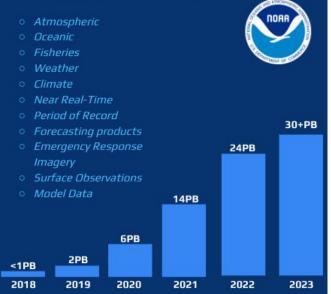
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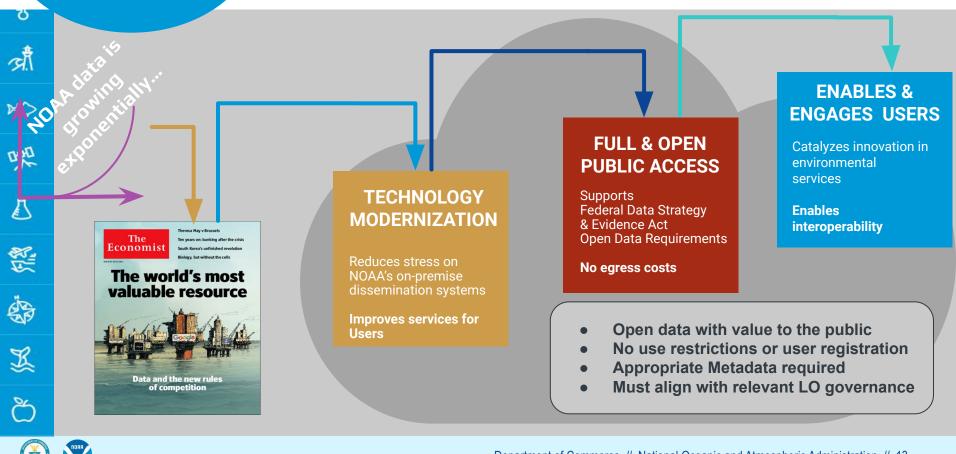
- 2) No cost to download and
- 3) Readily usable on (commercial) cloud platforms
- > 30Pb of data stored with the three CSPs
- Drives innovations and private sector opportunities

NOAA Datasets Accessible via NODD



NOAA Open Data Dissemination www.noaa.gov/nodd

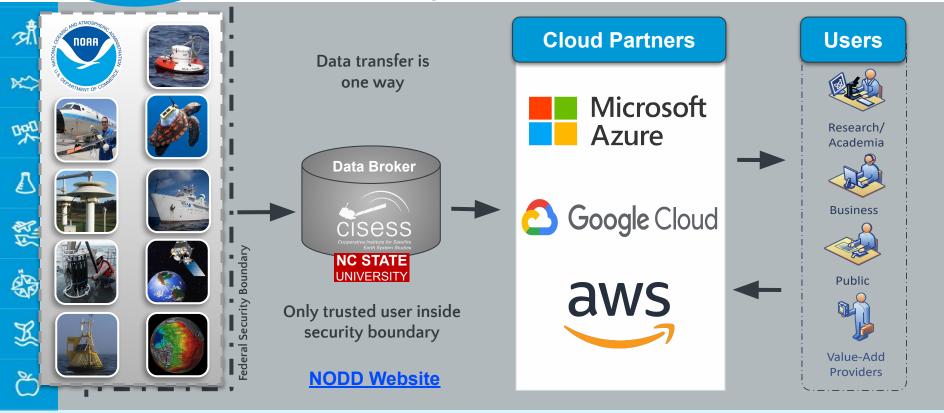
NODD Data Dissemination across all NOAA Line Offices



Architecture

NOAA

NODD Accelerates Access to NOAA Open Data for the Public



Key Takeaways

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- NOAA provides the critical foundational and authoritative geospatial data that supports the National Spatial Data Infrastructure, the public and our partners.
 - We are committed to ensuring all NOAA's geospatial data supports the new modernized National Spatial Reference System (NSRS) framework.
- NOAA's data management framework is evolving and maturing to support the FAIR principles, but is currently under resourced.
 - Additional attention, focus and resources across the organization must be dedicated to proper data management moving forward.
- Potential and future of Digital Twins is exciting, but without accurate and quality data and information, the Digital Twin concept is useless.



Thank You!

Kim Valentine, NOAA Geospatial Information Officer (GIO)

