Changing the Data Governance Landscape

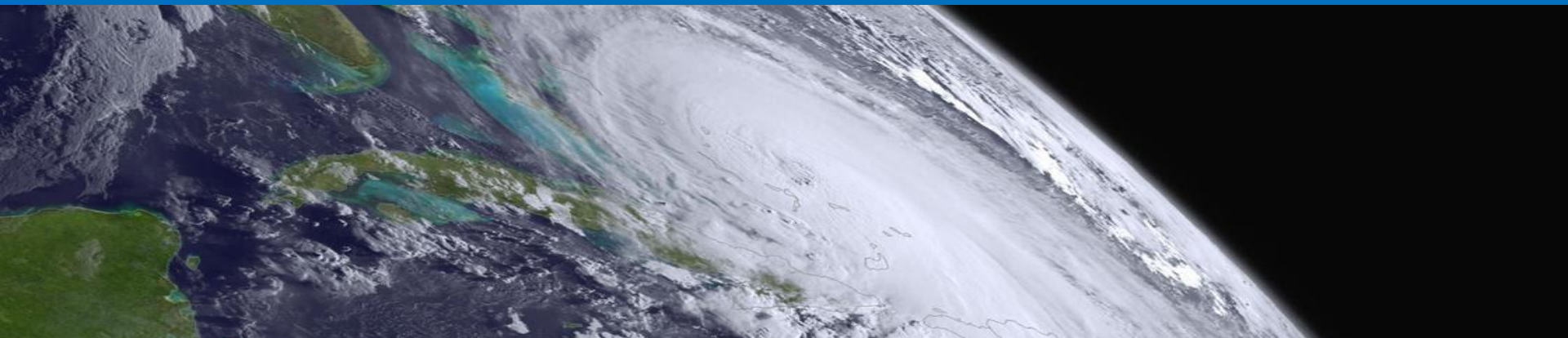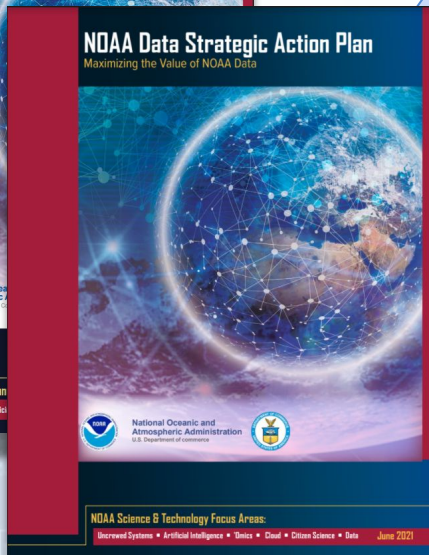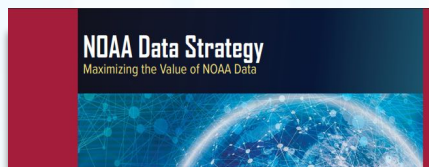**NOAA**

Tony LaVoi
NOAA Chief Data Officer

July 14, 2022

Shared Goals

Vision: NOAA culture that values data as a strategic asset

Goal 3: Improve the value, accessibility, and usability of observational data for informed decision-making

NOAA Data Vision: Achieve Readiness for Tomorrow's Data Landscape

- **NOAA culture that values data as a strategic asset** to understand the environment, create value for businesses, improve government efficiency, and provide quality services for the public

- **Open access to NOAA data and science is critical** to support the mission

CLIMATE

EQUITY

NEW BLUE ECONOMY

| REQUIREMENTS AND OPPORTUNITIES | NOAA DATA STRATEGY AND ACTION PLAN | ENTERPRISE-WIDE DATA GOVERNANCE | DISTRIBUTED NOAA DATA COMMUNITY & PROGRAMS | IMPLEMENTATION, OUTCOMES, & MISSION IMPACT |

Federal Landscape on Open Data

- Freedom of Information Act (FOIA) (1966), Paperwork Reduction Act (PRA) (1995), and Information Quality Act (2001)

- (2013) M-13-13: Open Data Policy and Public Access to Research Results (PARR)

- (2016) FAIR Principles - Findable, Accessible, Interoperable, Reusable

- (2018) Evidence Act, Geospatial Data Act, and Federal Data Strategy

- (2022) Open Data / Open Science --- NOAA Science Advisory Board; NASA, Nat. Academy of Sciences

Evidence Act Phase II - Open Data Access & Management

- Make each agency **data asset available in an open format**;

- Make public data assets available under an **open license**;

- Maintain a **comprehensive data inventory**; Federal Data Catalogue;

- Develop and maintain an **Open Data Plan;** and

- **Engage the public** in using publicly available data assets

First Principle: Maximizing the Value of NOAA Data

5 Goals
Leadership, Governance, Open Data, Capabilities, and Collaboration
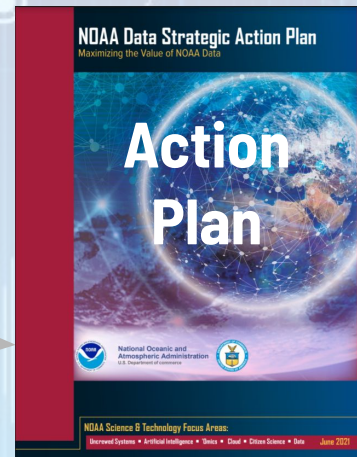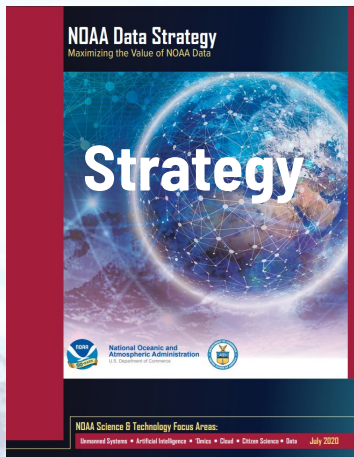
20 Objectives
Maximize the overall value of NOAA data assets

23 Actions
How NOAA will make progress towards goals and objectives

70+ Milestones and Deliverables
Targets and Measures of Success

NOAA Data Strategy
Maximizing the Value of NOAA Data

Strategy

National Oceanic and Atmospheric Administration
U.S. Department of Commerce

NOAA Science & Technology Focus Areas:
Unmanned Systems • Artificial Intelligence • 'Omics • Cloud • Citizen Science • Data   July 2020

NOAA Data Strategic Action Plan
Maximizing the Value of NOAA Data

Action Plan

National Oceanic and Atmospheric Administration
U.S. Department of Commerce

NOAA Science & Technology Focus Areas:
Uncrewed Systems • Artificial Intelligence • 'Omics • Cloud • Citizen Science • Data   June 2021

Change Agents: NOAA Data Governance Committee (DGC)

Membership
Assistant Chief Data Officers (ACDO) - new mission area data governance leads

Roles & Responsibilities
Data governance, management, and performance mgmt

Topics
Standards, metadata, licensing, technology, access, policy, and workforce

Policy
New NOAA Data Governance and Policy Handbook - in development

NMFS ACDO

NOS ACDO

NESDIS ACDO

NWS ACDO

NOAA CDO

OAR ACDO

SO/CO ACDO

OMAO ACDO

NOAA Data Governance Committee (DGC)

Global Ocean Monitoring and Observing
NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION

Strategic Plan

Strategic Goals:

Goal 1: Sustain global ocean monitoring and observing for long-term continuity and improve data quality and system efficiency.

Goal 2: Innovate and evolve the ocean observing network to address emerging needs and opportunities for ocean health, ocean economy, weather and climate.

Goal 3: Improve the value, accessibility, and usability of observational data for informed decision-making.
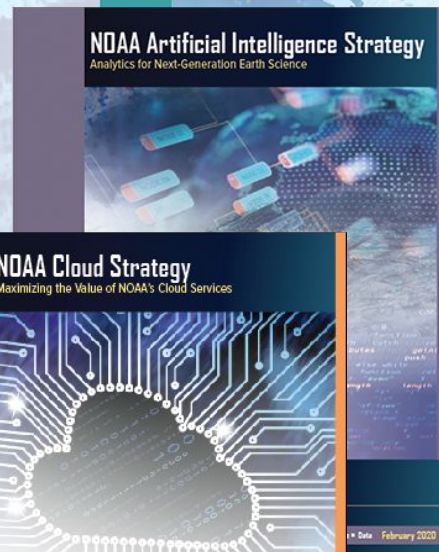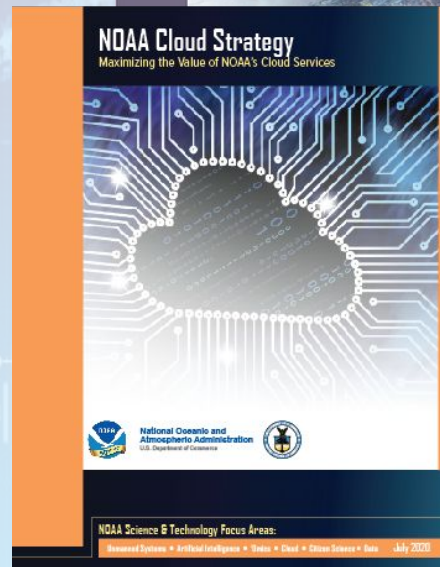
Goal 4: Develop and capitalize on the expertise, diversity and capacity of the ocean observing enterprise.

- **Goal 1 & 2**
  - Data integration with NOAA Science & Technology (S&T) Strategies for Cloud, AI, and UxS

- **Goal 3**
  - Open Data foundational building blocks

- **Goal 4**
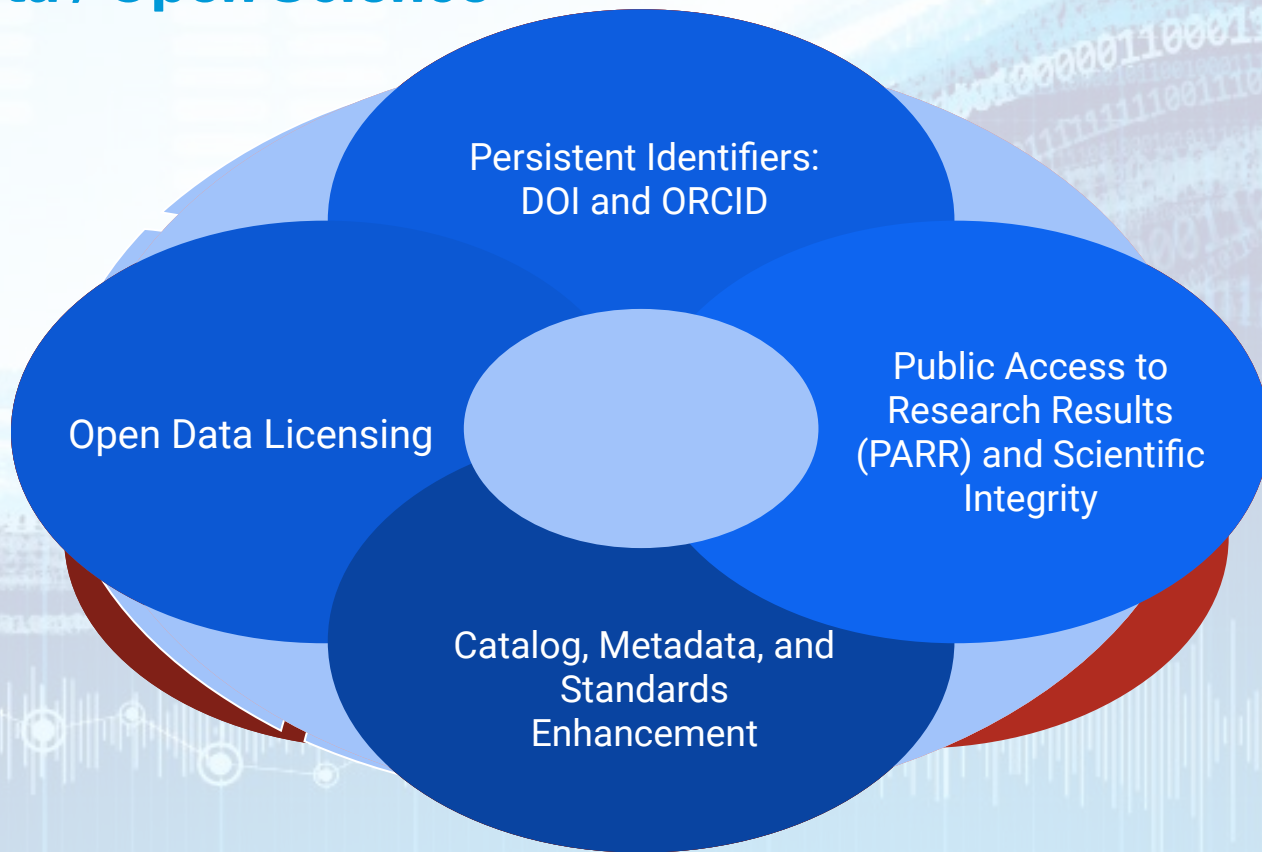 - Supporting commercial enterprises for climate and New Blue Economy

S&T Synergy: Cloud, UxS, and AI

- **Cloud - *Enable Innovation through Rapid Adoption of Cloud-Based Services***
  - Expand access to NOAA's data to unleash its full value, while improving the security of the information systems and data supporting NOAA's mission
- **Artificial Intelligence (AI) - *Advance AI Research and Innovation in support of NOAA's Mission***
  - Leading development of an AI-Ready Data Standard, ensuring NOAA Data are usable for AI/ML applications
  - NOAA Center for AI - Data Pilot Projects
- **Uncrewed Systems (UxS) - *Implement an Innovative, Robust, and Encompassing UxS Data Enterprise***
  - Developing NOAA UxS platform inventory
  - Implementing UxS data management policies

Open Data / Open Science

Persistent Identifiers: DOI and ORCID

Open Data Licensing

Public Access to Research Results (PARR) and Scientific Integrity

Catalog, Metadata, and Standards Enhancement

Open Data Licensing / Commercial Data Buys

- **DATA LICENSING**
  - <u>NOAA as a data provider</u> - What license should we apply to NOAA data?
  - <u>NOAA as a data user</u> - What licenses can we accept from external data providers?
  - Federal Open Data Policy guidance recommends using Creative Commons Zero (CC0) wherever possible for NOAA's open data
  - Develop NOAA Data Licensing Policy and Guidance Documentation in active collaboration with agency partners and data users; release in FY23

- **COMMERCIAL DATA BUYS**
  - In broad use across NOAA
    - Weather: Lightning, Aircraft Obs, Mesonet, GPS-Met
    - Satellite: Commercial radio occultation satellite weather data
    - Fish/Research: Saildrone for various atmospheric and oceanic data
  - Implications for use in NOAA research and mission operations
  - Developing policy to guide NOAA's future acquisitions

Action 11: Develop & maintain NOAA data licensing guidance that is consistent with Open Data policies in the EA.

Milestones:

A. Develop and publish NOAA Data Licensing Guidance that is machine-readable.

B. Develop NOAA policy for specifying appropriate Data Licenses for data that NOAA creates, procures, or otherwise receives as in the case with NOAA Data Buys from commercial or outside vendors.

C. Promote NOAA Data Licensing Guidance within NOAA and with key partners.

International Activities

NOAA Data are curated locally, applied globally

- Data governance and foundational data support benefits all data users
- NOAA data governance and guidance influenced by International entities
  - WMO - Significant impact on NWS activities
  - IOC - NOAA membership on many activities (GOMO participation)
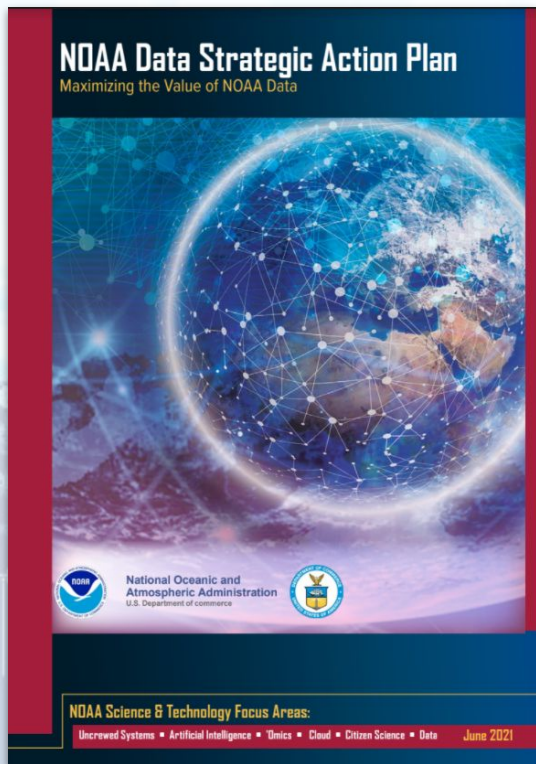 - OGC - NOAA is an active member

Data Management does not happen in isolation

- GOMO is pace setter with international marine data activities
- The CDO is ready to support GOMO from a governance and NOAA policy perspective
- GOMO data practitioners are encouraged to highlight GOMO international activities at the annual NOAA Environmental Data Management Workshop

Stakeholder Engagement and Equitable Access

- **Open Data Action:** Improving public access to priority NOAA data assets that aligns with the Evidence Act, as well as the Executive Order on On Advancing Racial Equity and Support for Underserved Communities Through the Federal Government and the DOC Environmental Justice Strategy

EQUITY

Building a New NOAA Data Ecosystem

LEADERSHIP

GOVERNANCE

OPEN DATA

CAPACITY BUILDING

COLLABORATION