NCEI Overview

Responsible for hosting and providing access to one of the most significant archives on Earth

National Centers for Environmental Information

September 2024

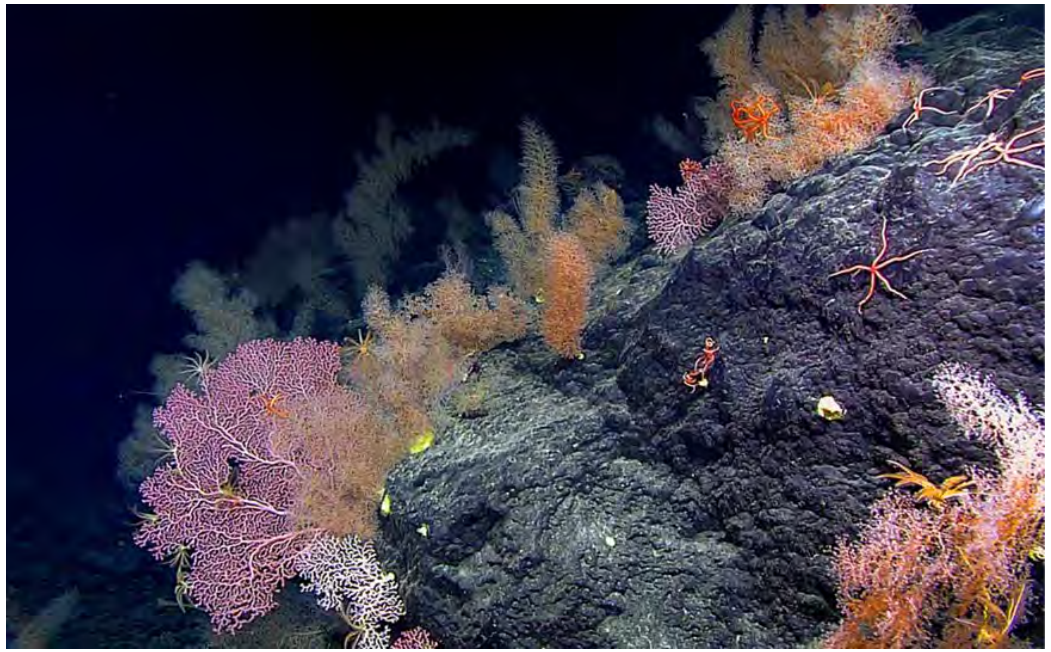
Russell Vose, Chief
Monitoring and Assessment Branch

NCEI Mission

NCEI provides environmental data, products, and services covering the depths of the ocean to the surface of the sun to drive resilience, prosperity, and equity for current and future generations.

NCEI Vision

A tenacious and trusted leader in environmental information for a rapidly changing world with a focus on driving lasting good across our partnerships, our economy, around the U.S and the world through generations.



Department of Commerce

NOAA
National Oceanic & Atmospheric Administration

NOAA Line Offices

- Satellite Data and Information Services
- National Marine Fisheries
- National Ocean Service
- Ocean and Atmospheric Research
- National Weather Service
- Office of Marine and Aviation Operations

National Environmental Satellite Data and Information Service (NESDIS) Line Office

- National Centers for Environmental Information
- Satellite Applications & Research
- Satellite & Product Operations
- Space Weather Observations
- Low Earth Orbit Observations
- Geostationary Earth Orbit Observations
- Systems Architecture & Engineering
- Office of Common Services
- International & Interagency Affairs

National Centers for Environmental Information (NCEI)

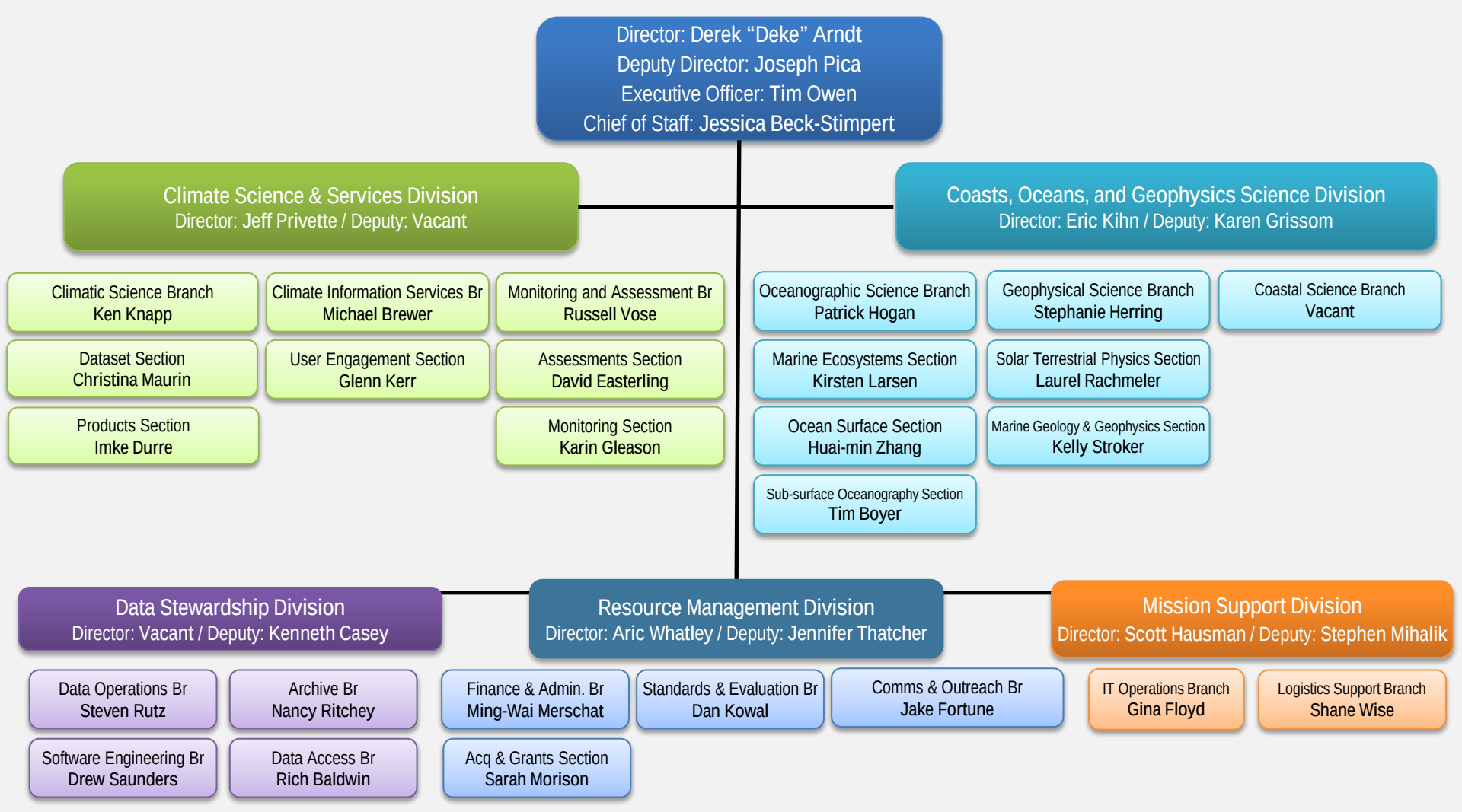

Asheville, NC
Headquarters

Boulder, CO

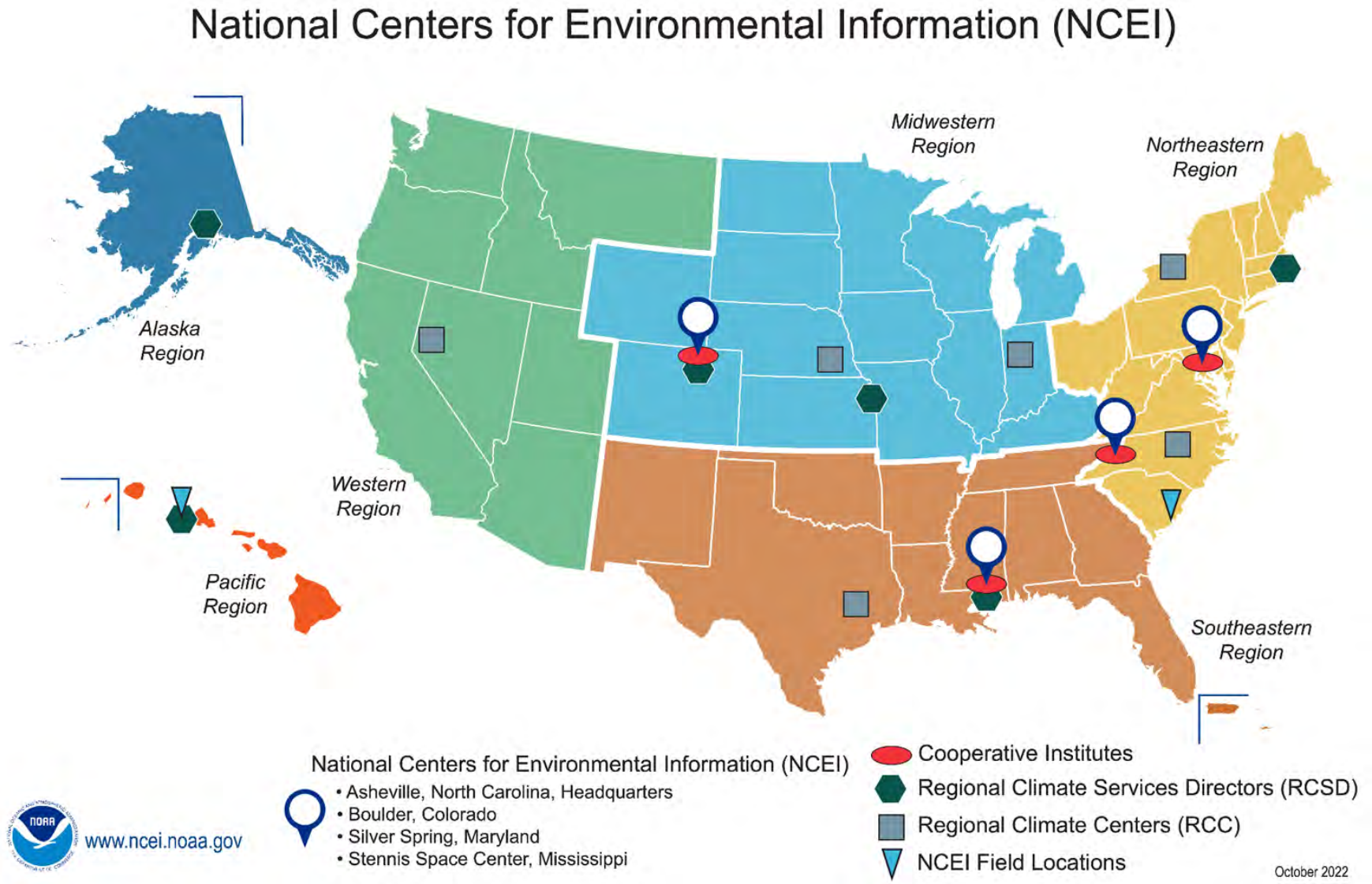

Silver Spring, MD


Stennis, MS

NCEI's Organizational Structure



NCEI's Nationwide Presence



NCEI's Organizational Culture

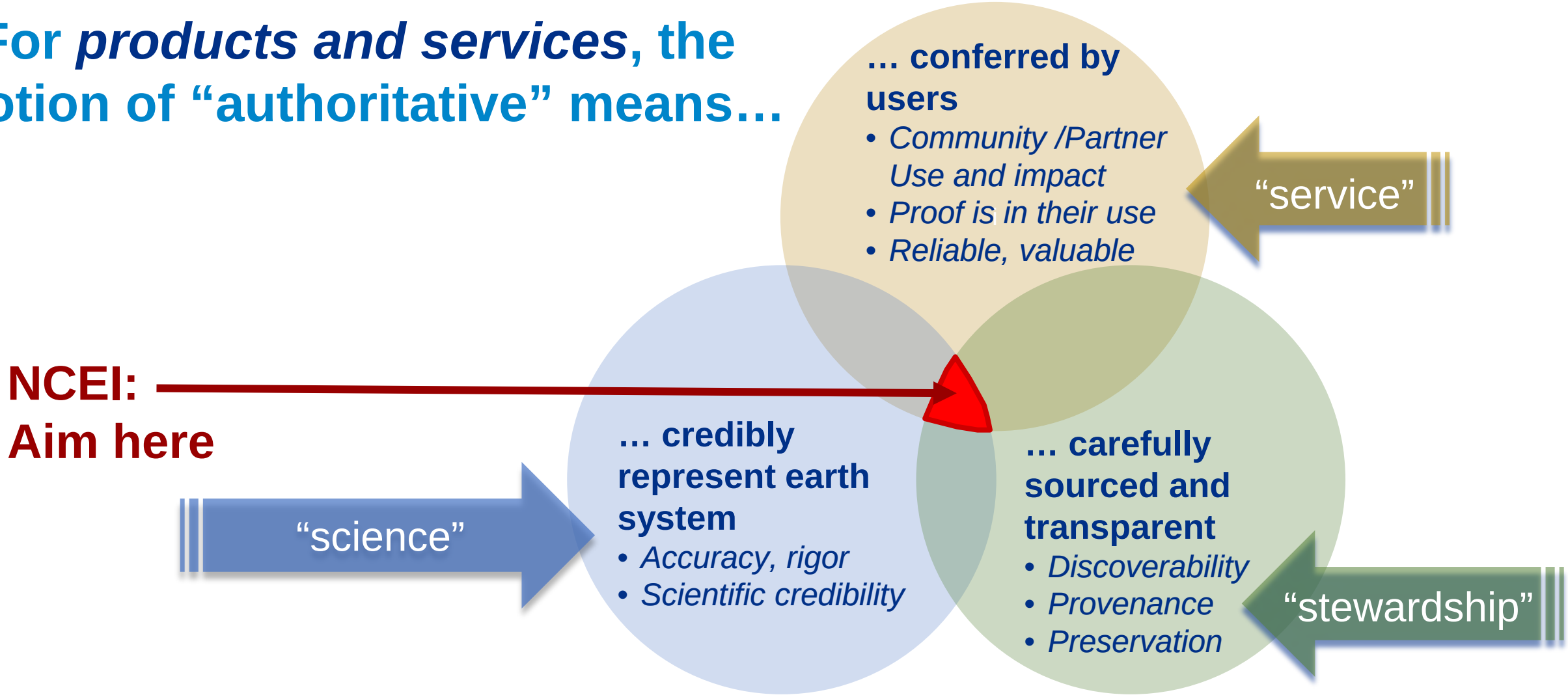
- INTEGRITY
  We hold the public's trust by demonstrating ethical behavior in all aspects of our operations
- TEAMWORK
  We cultivate cohesive, highly functioning teams
- AGILITY
  We embrace and rapidly respond to change

Stakeholders

- International
- Federal
- DOC/NOAA
- State/Local
- Academic
- NGOs
- Private Sector

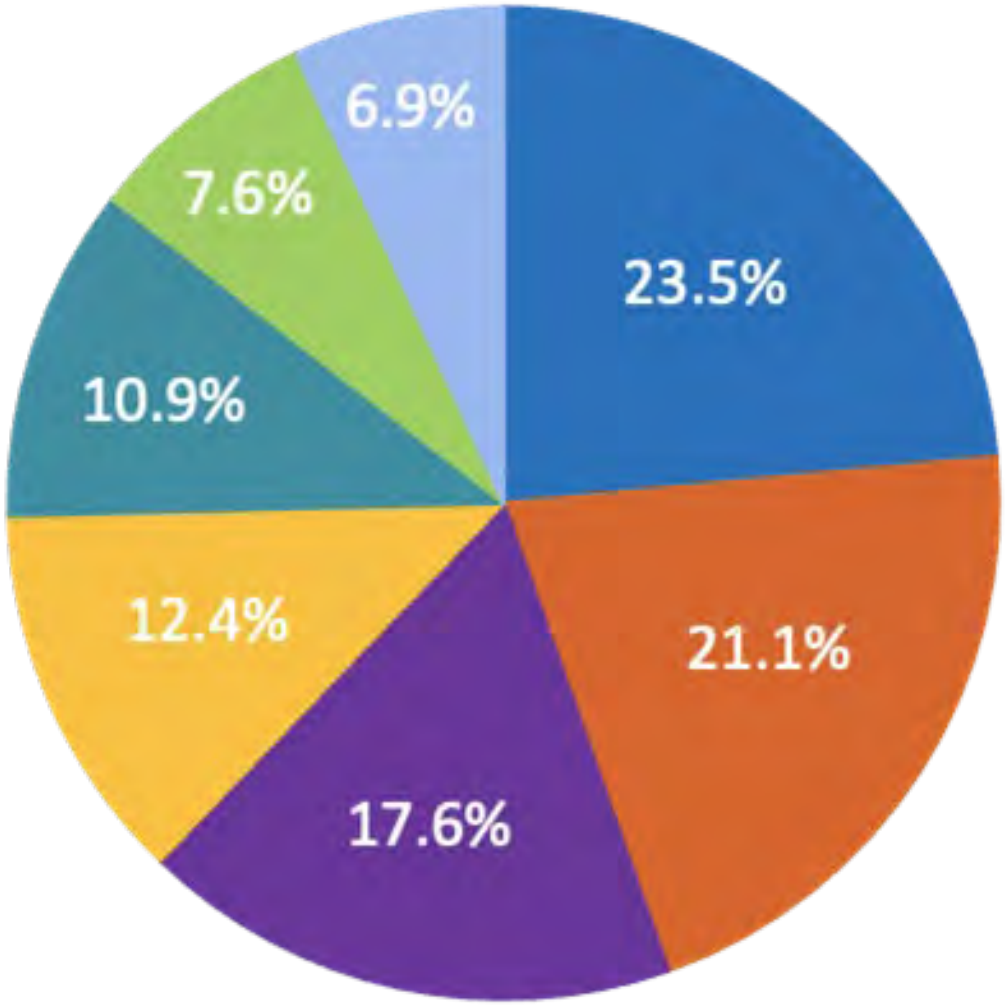
NCEI's Authoritative Information

"For *products and services*, the notion of "authoritative" means…



NCEI's Stakeholders by Sector

- Science, Technology, and Engineering
- Ecosystems (Agriculture/Aquaculture)
- Transportation and Infrastructure
- Energy
- Insurance, Finance, and Legal
- Health and Emergency Management
- Higher Education



NCEI's Gig: Turning Observations into Information

NOAA Observing Systems

NCEI

Research-quality products for decision making

Climate & Weather

- Climate Assessments
- Climate Normals
- Billion $ Disasters
- Drought Monitoring

Oceans & Coasts

- Tsunami Warning
- Coastal Digital Elevation Models
- Extended Continental Shelf
- World Ocean Database

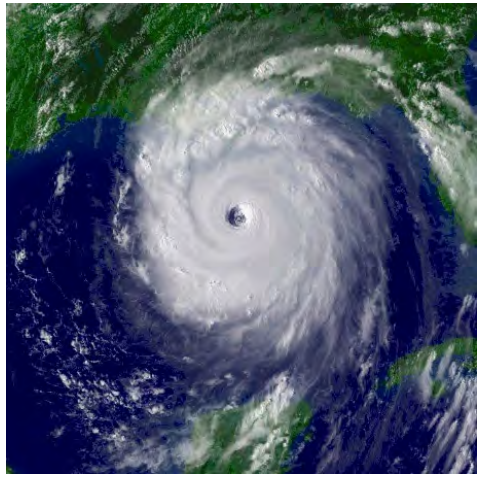
Geophysics

- Space Weather
- World Magnetic Model

NCEI's Tiers of Data Stewardship

Climate Information to Inform the Future

Climate at a Glance



Billion-Dollar Disasters

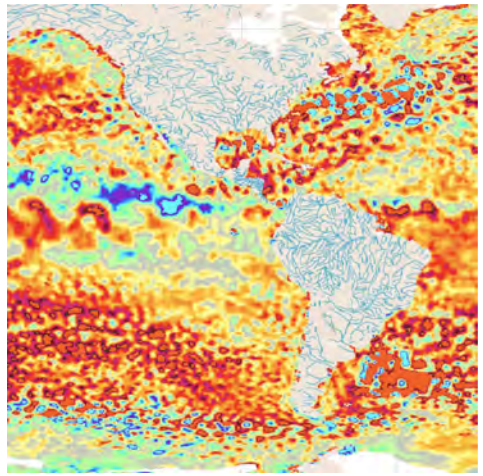
U.S. Drought Monitor

Regional Snowfall Index

Tornado Climatology

Hourly Precipitation Data

Climate Extremes Index



Blended Sea Winds

Satellite CDRs (Ken)

Home / Products / Climate Data Records

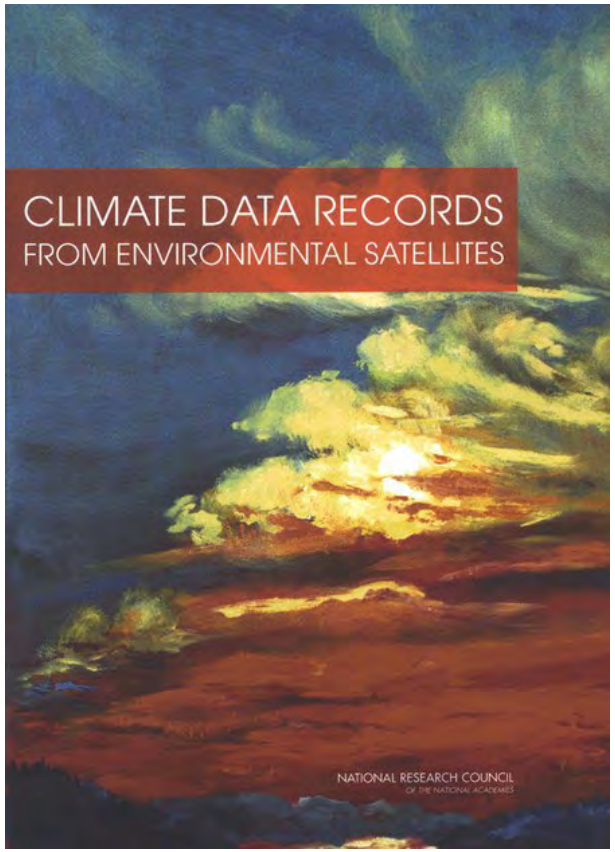
Climate Data Records

NOAA Climate Data Records (CDRs) can be used to manage natural resources and agriculture, measure environmental impacts on human health and community preparedness, and inform policy development and decision making for other sectors and interest groups.

What are CDRs?

CDRs are robust, sustainable, and scientifically sound climate records that provide trustworthy information on how, where, and to what extent the land, oceans, atmosphere and ice sheets are changing. These datasets are thoroughly vetted time series measurements with the longevity, consistency, and continuity to assess and measure climate variability and change. NOAA CDRs are vetted using standards established by the National Research Council (NRC).

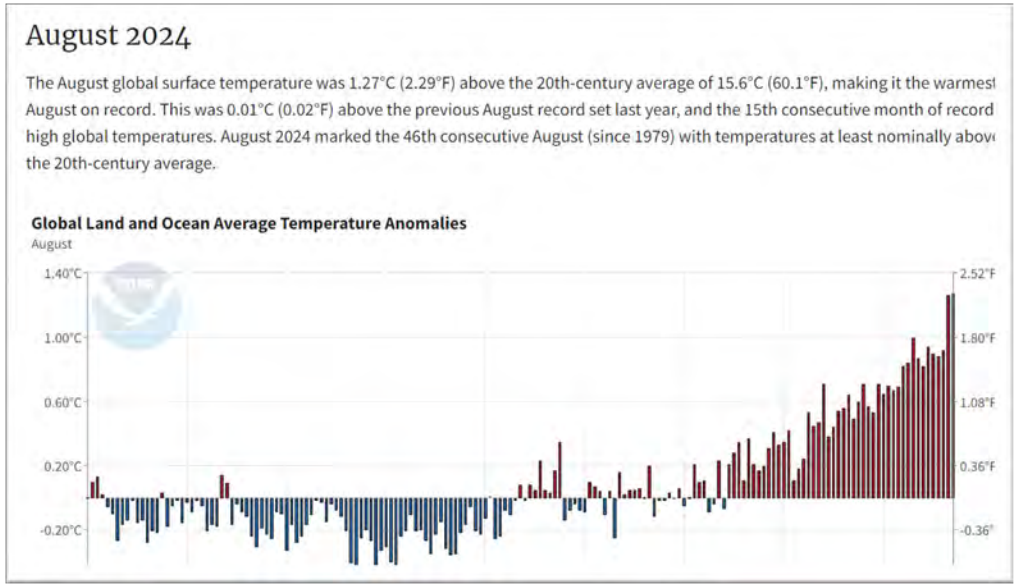
NOAA CDRs are systematically generated and routinely assessed for quality. The first step in establishing an operational CDR includes public posting of the source code that generated the CDR dataset, the dataset itself, and supporting documentation through a six-phase Research-to-Operations process that is described in the Developers Guidelines.

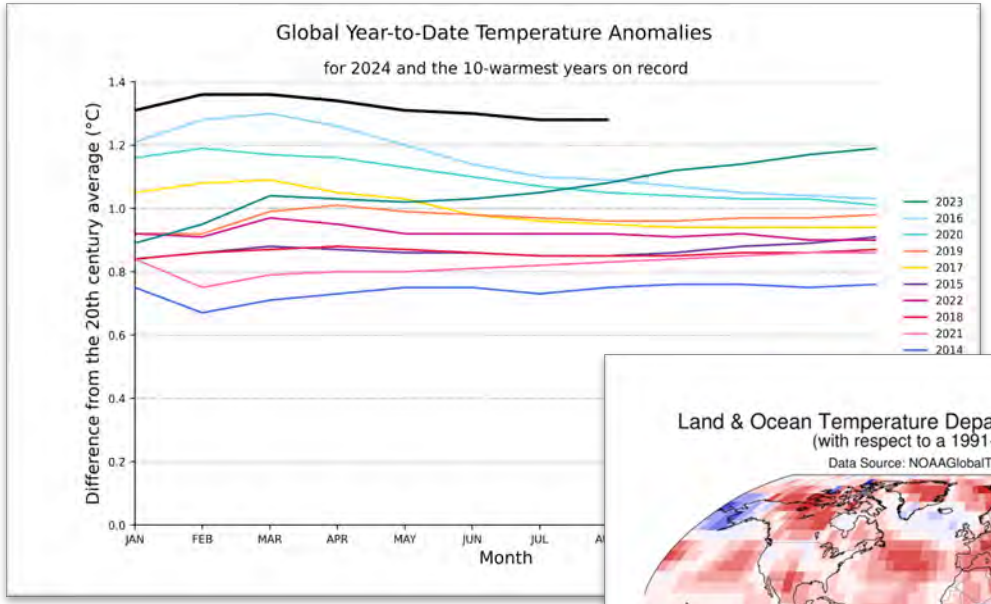


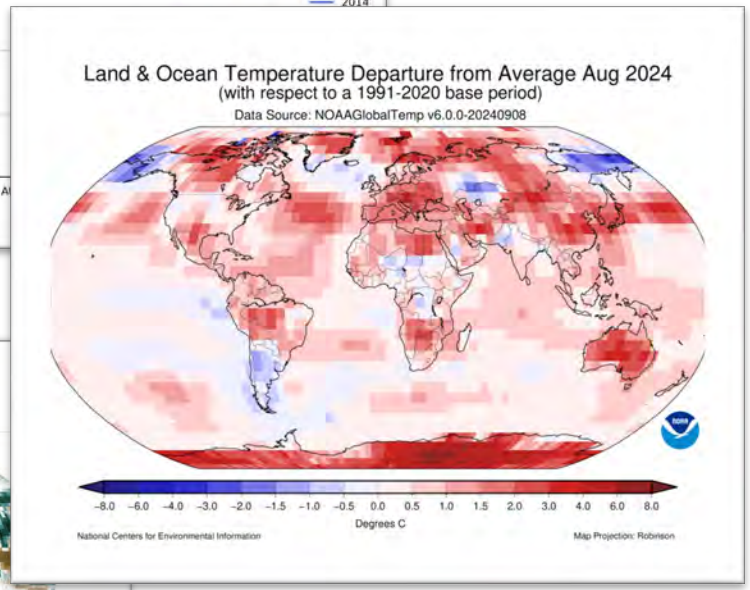
2004 National Academies Report

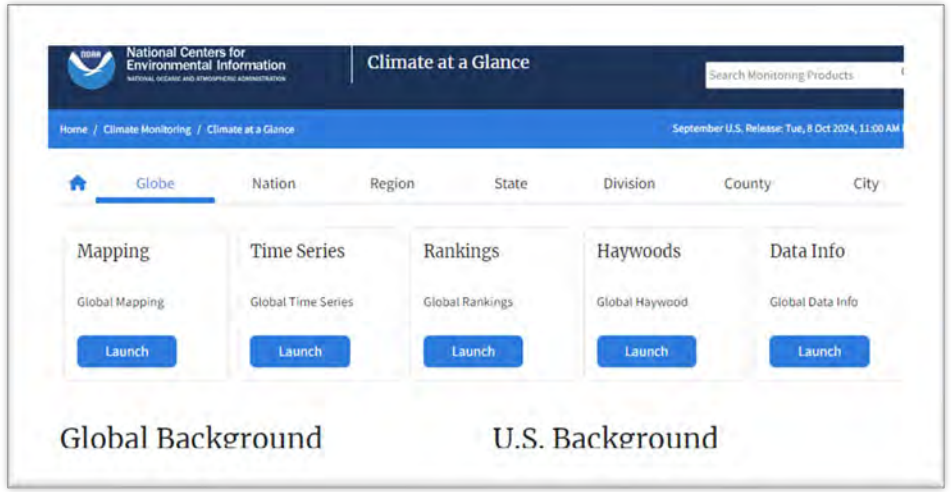
- Fundamental CDRs contain sensor data (e.g., calibrated radiances)
- Thematic CDRs depict geophysical variables (e.g., precipitation)
- There are about 40 CDRs at NCEI

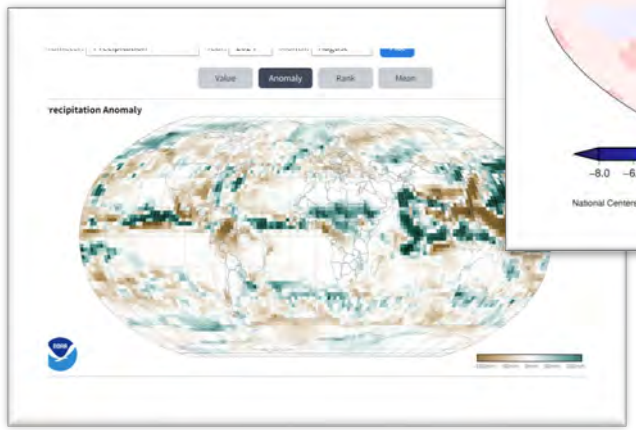
Climate Monitoring (Karin)



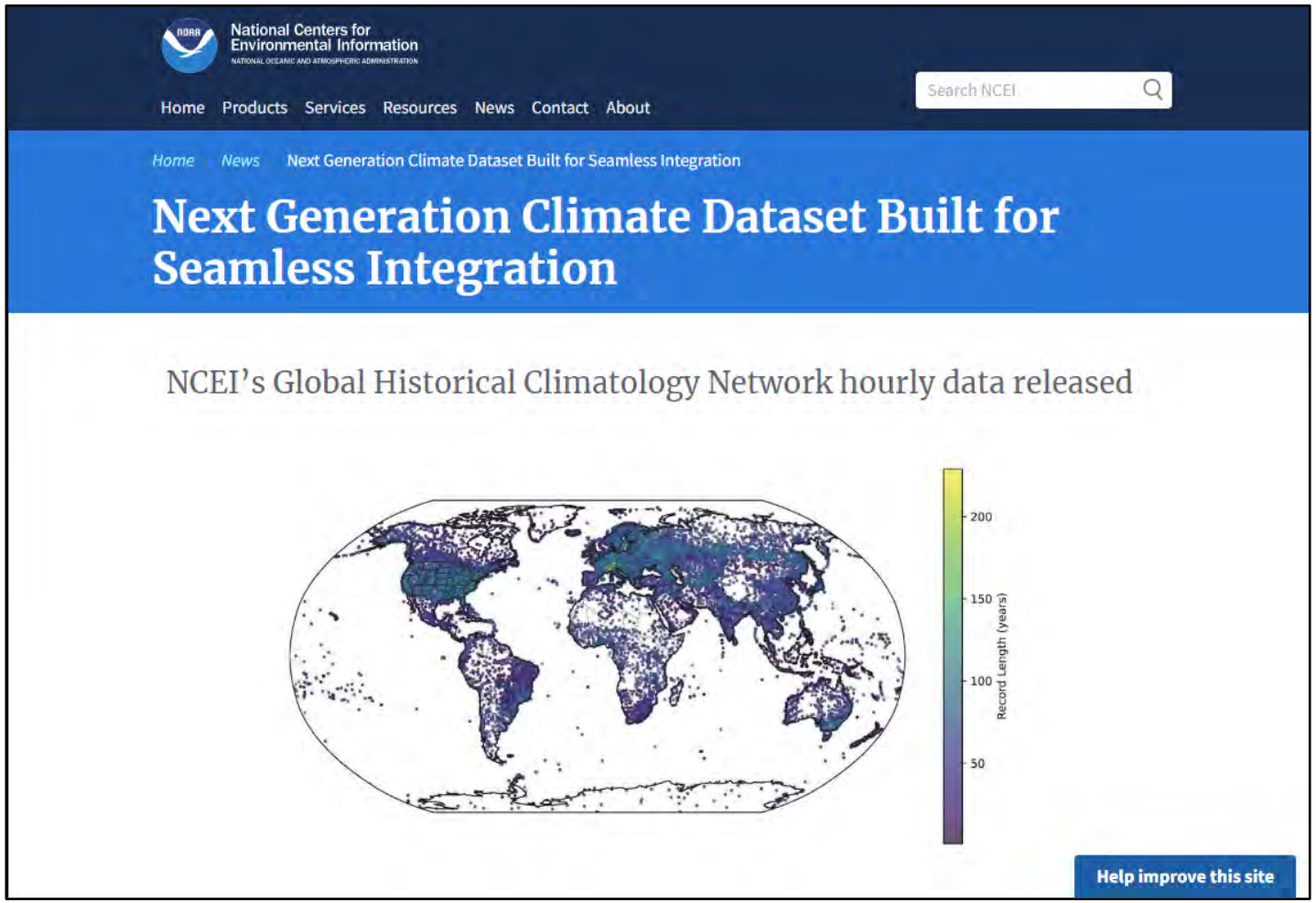


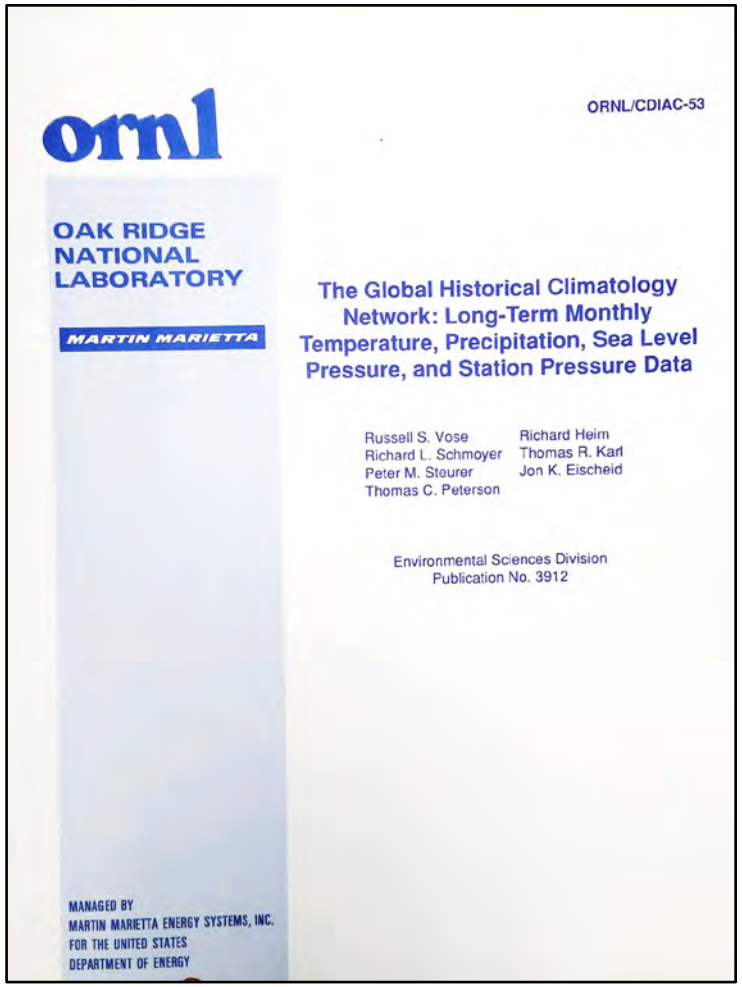




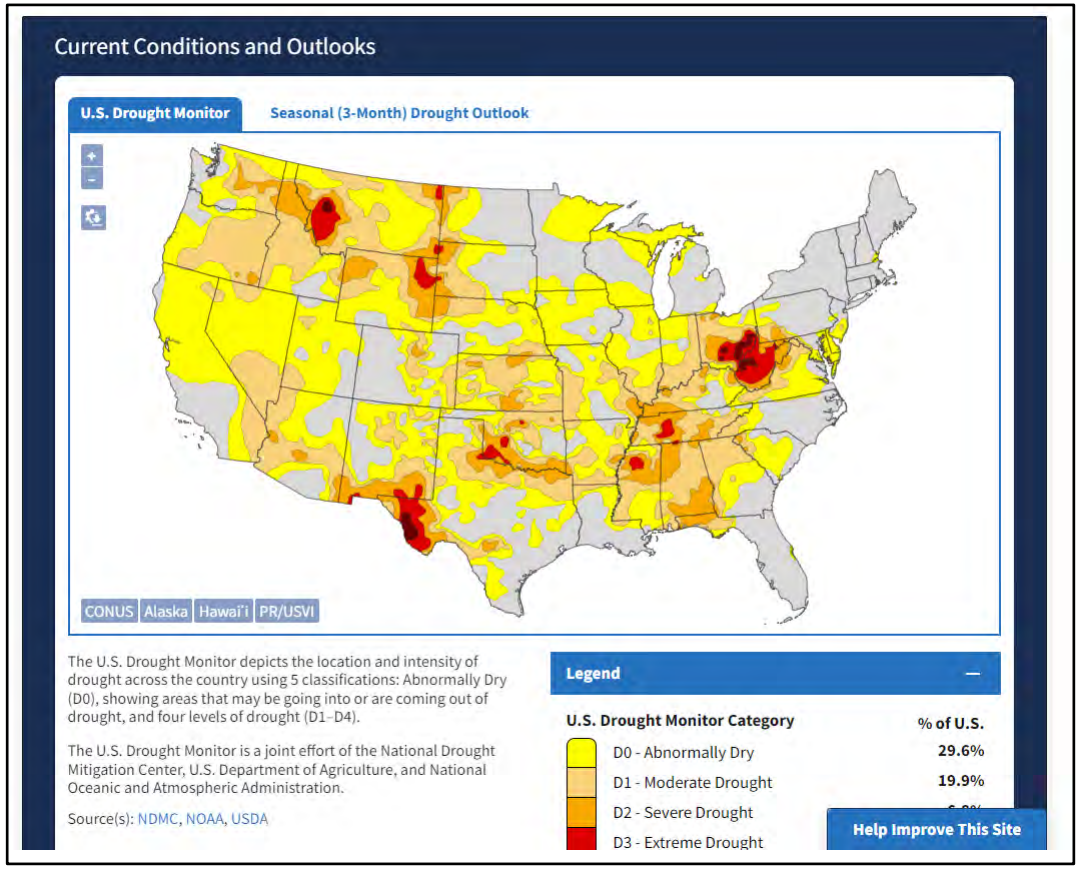


Flagship Datasets (Matt)

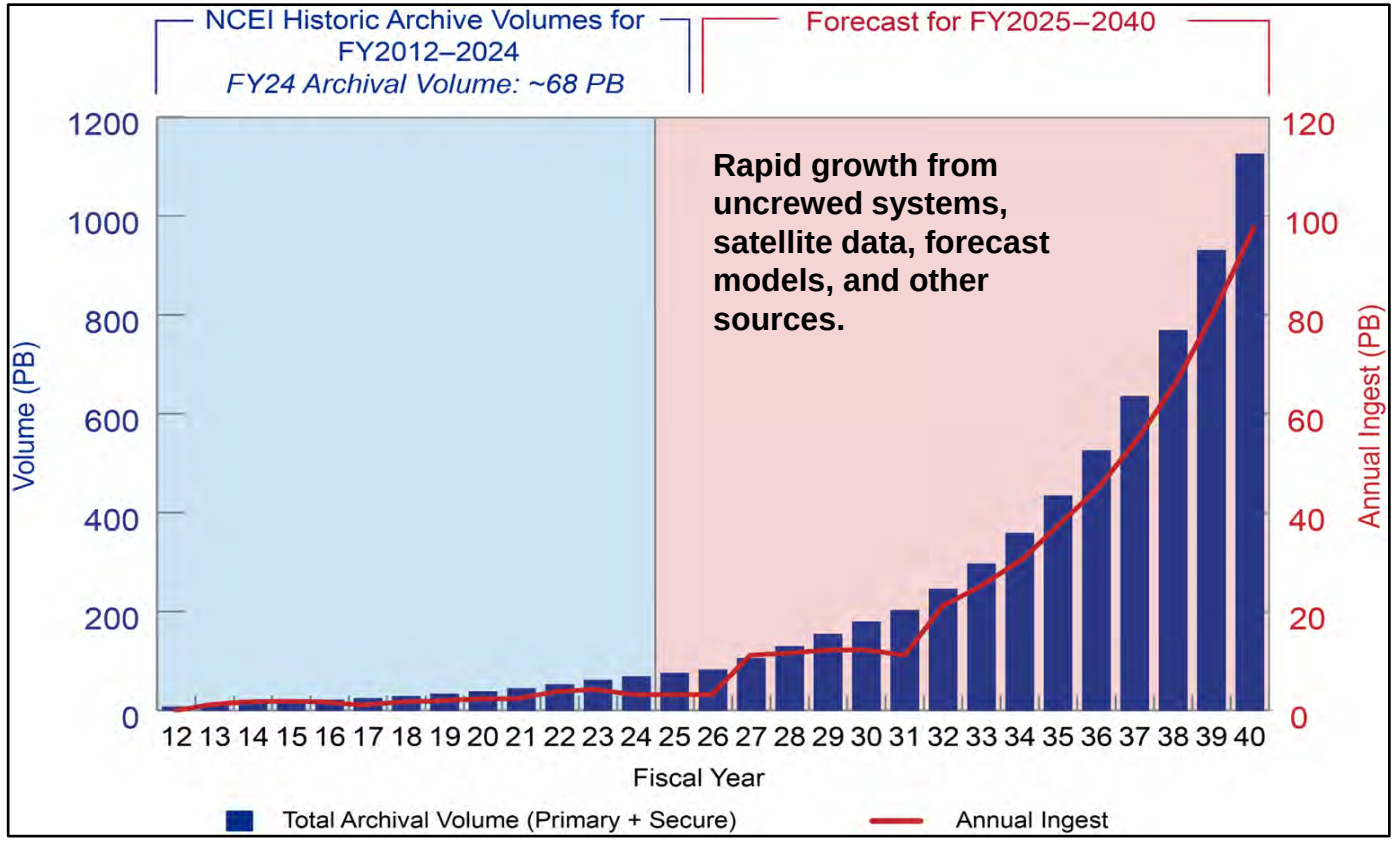




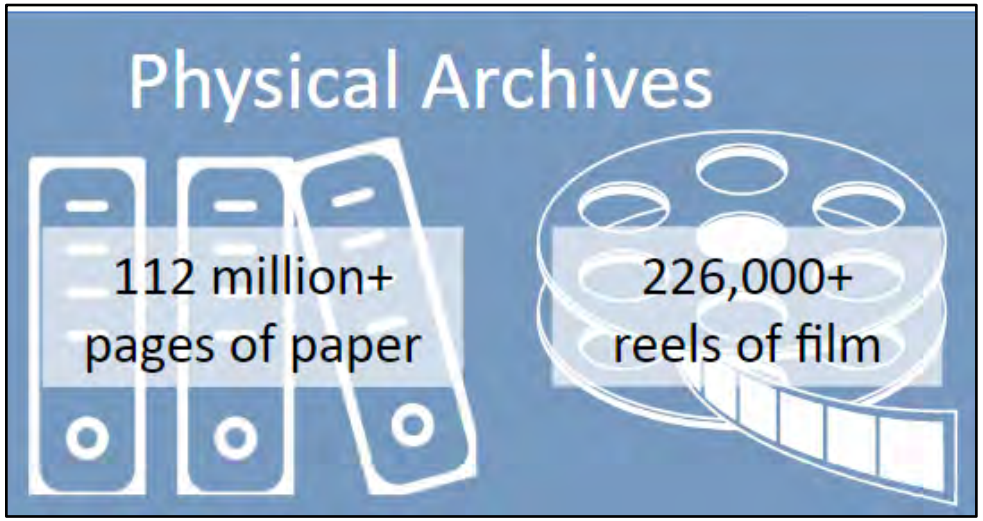
Climate Engine / Drought.gov (Steve)



Climate Data Rescue (Jason)

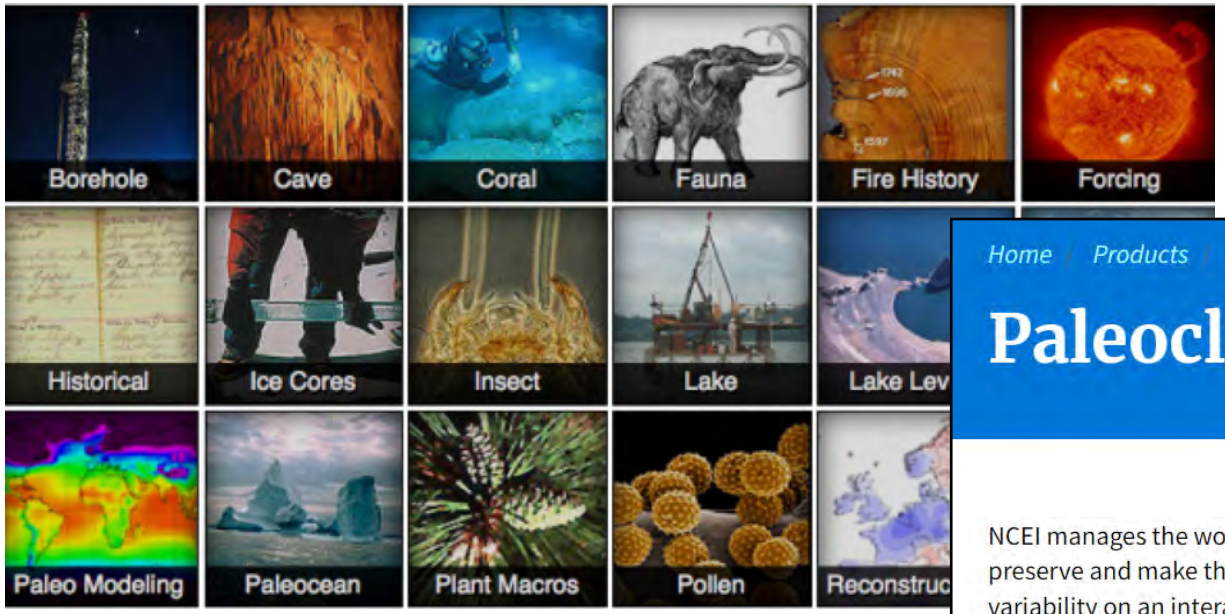


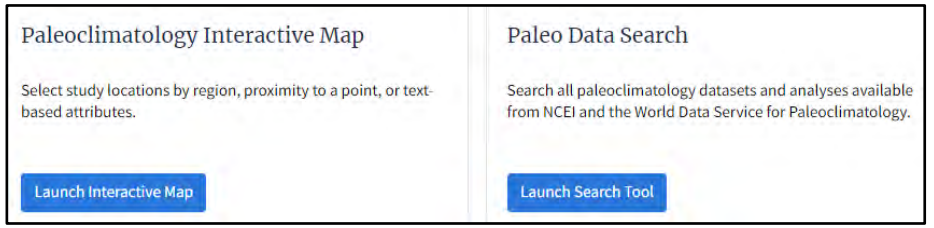
This gets a lot of the attention

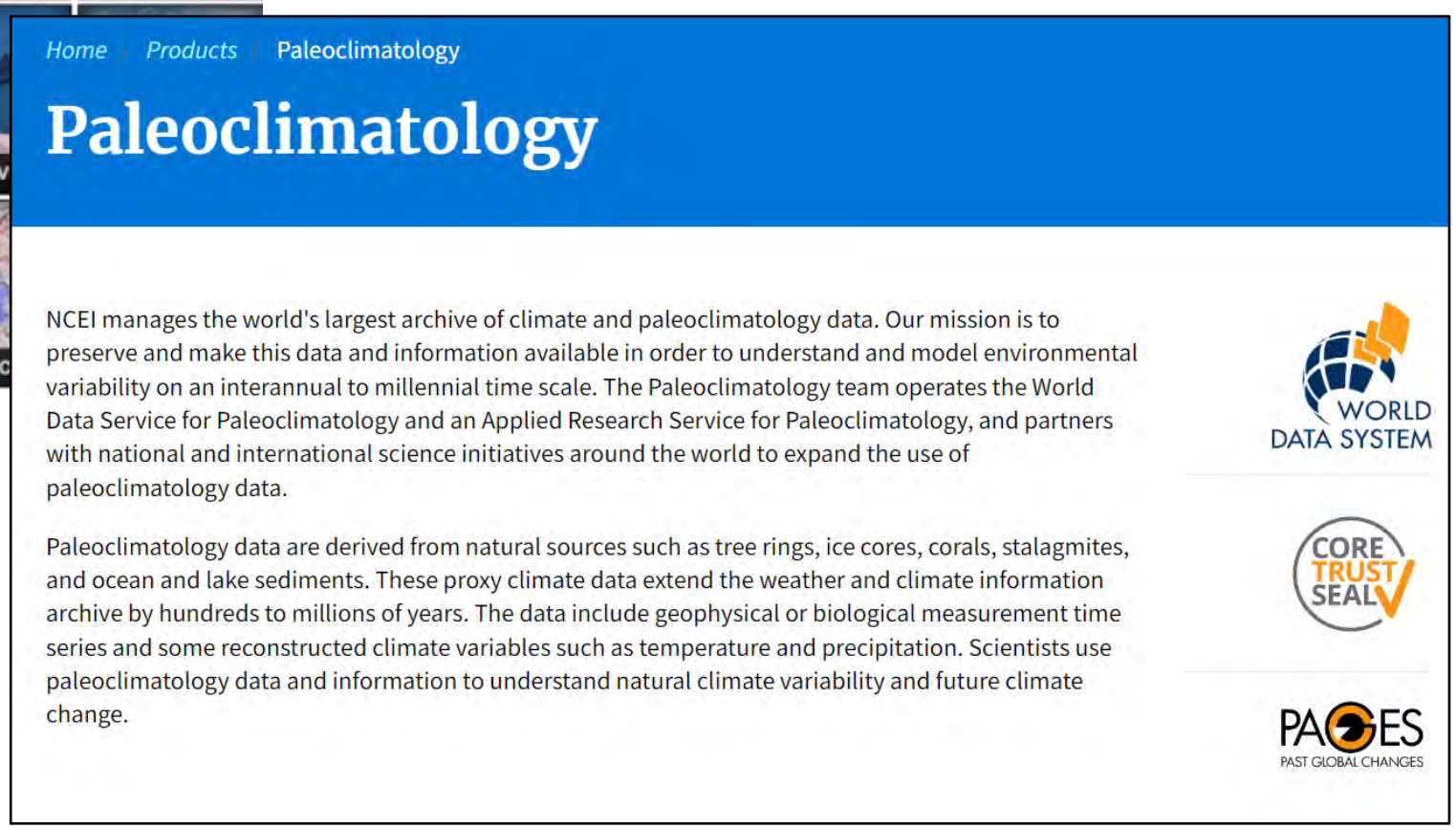


But there is a critical role for this

Best Practices for Making Data FAIR (Carrie)







Findable
Accessible
Interoperable
Reusable


Find your local weather
News
Tools
About
National Oceanic and Atmospheric Administration
U.S. Department of Commerce
Search NOAA sites
Home / News & Features
Biden-Harris Administration invests $85M for Industry Proving Grounds program to strengthen climate resilience through Investing in America agenda

Industry Proving Ground Sectors

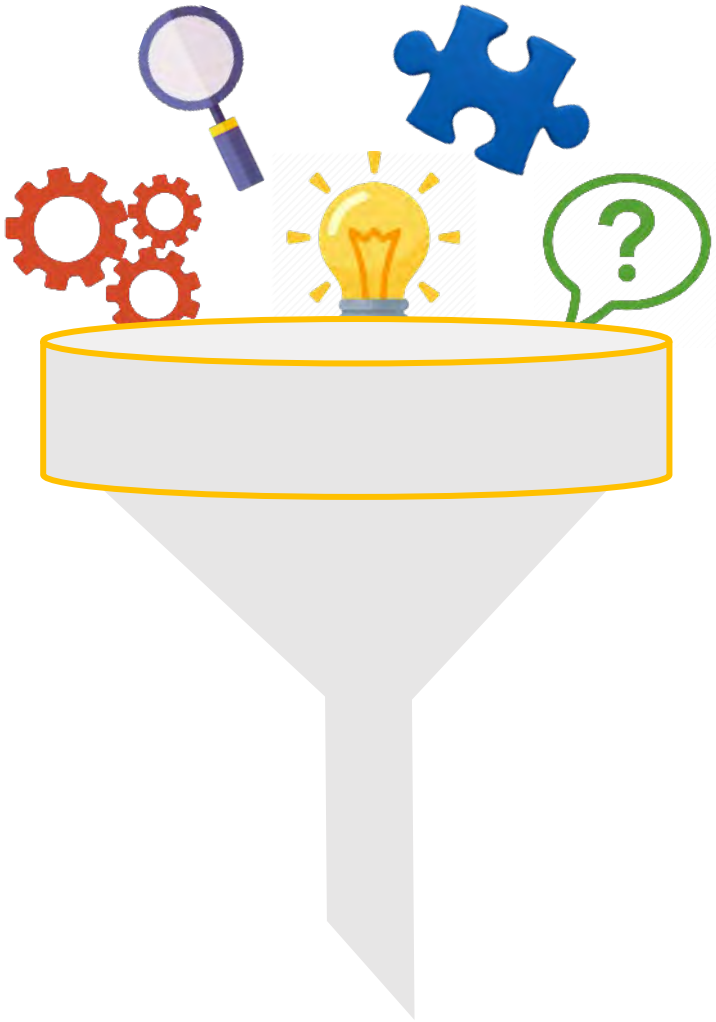
Finance & Reinsurance

Retail

Architecture & Engineering

Common Themes

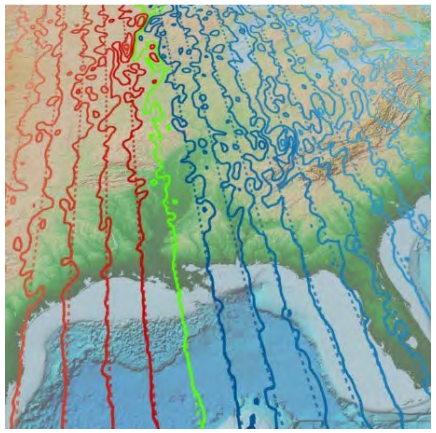
- Provide information and products in an easy to use format
  - **– Don’t make me be a climate scientist**
- Improve access by establishing a central repository for prioritized information
  - **– Don’t give me the kitchen sink**
- Co-develop new information to help with decision making
  - **– Don’t treat me like a loading dock**



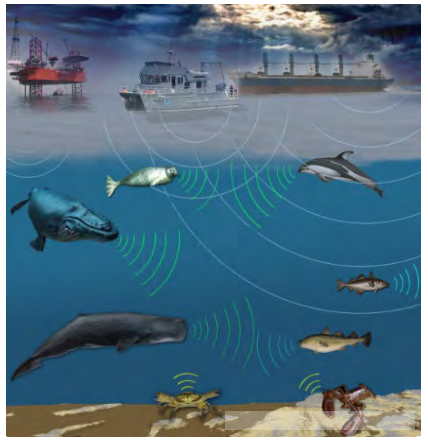
Coast, Oceans, and Geophysics

Providing data and information from the Sun to Earth's seafloor

Ocean Exploration Digital Atlas

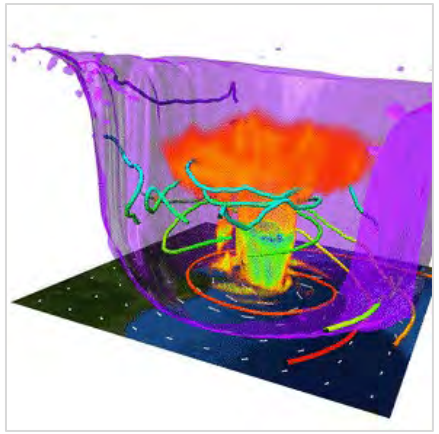


Enhanced Magnetic Model



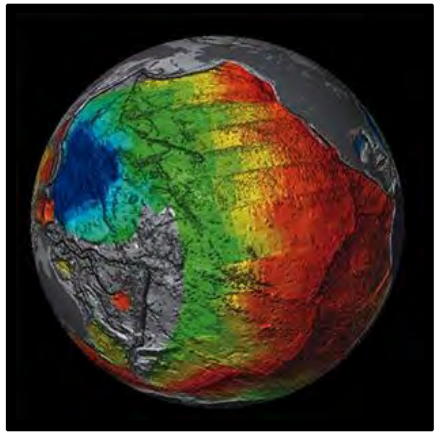
Passive Acoustics

Gulf of Mexico Data Atlas



Model Reanalysis

Deep Sea Corals Data Portal



Bathymetry and Global Relief

World Ocean Database

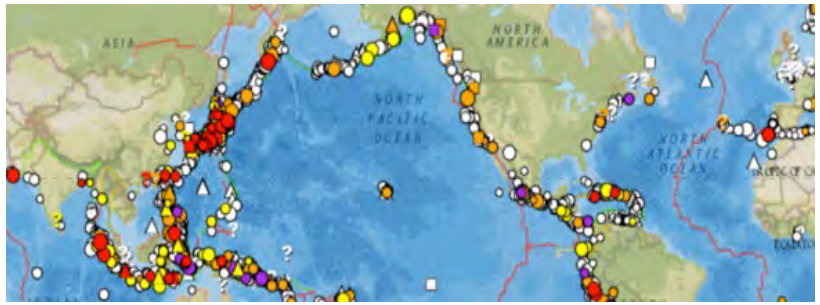
NCEI's Value to the Nation

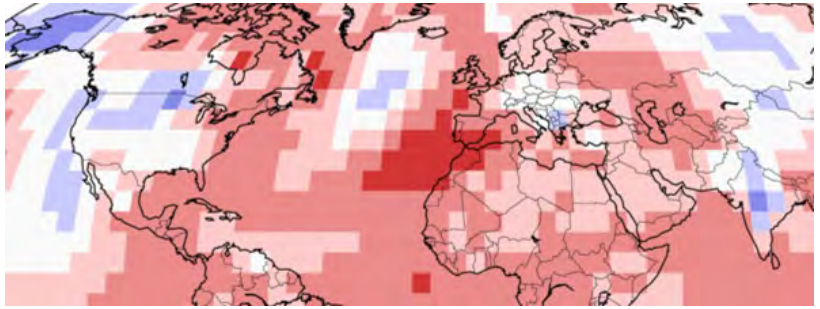
Range of Products

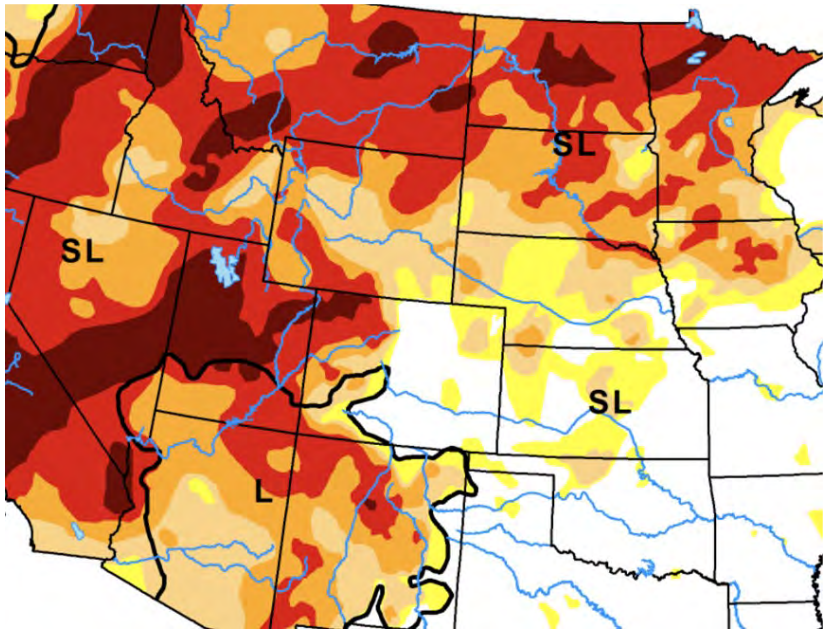
- Time scale: Hourly to Decadal
- Geographic scale: Local to Global

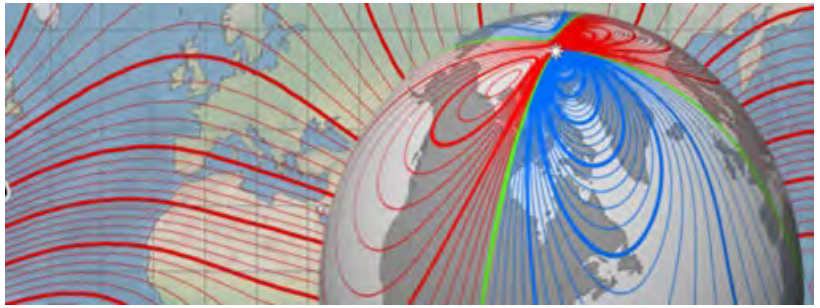
Technical Expertise

- Aerosols to Coastal Inundation
- Drought Monitoring to Ocean Surface Winds
- Paleoclimatology to US/Global Climate Monitoring









Learn More: www.ncei.noaa.gov