

# The Value of Environmental Information from NOAA's NCEI

National Centers for  
Environmental Information (NCEI)

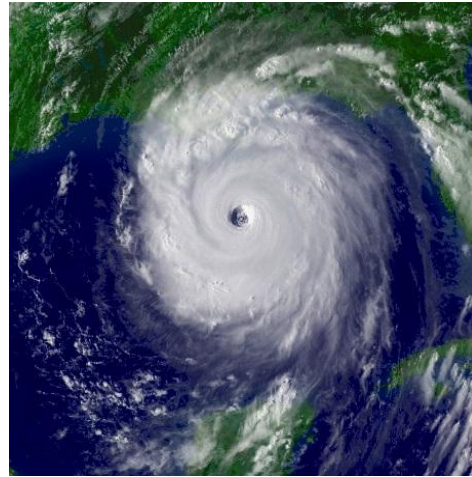
March 27, 2024

Tamara Houston, Glenn Kerr, Michael Brewer

# Providing Climate Information to Inform the Future



Monthly U.S. & Global Climate Reports



U.S. Billion-Dollar Weather & Climate Disasters Report



U.S. Drought Monitor



Regional Snowfall Index



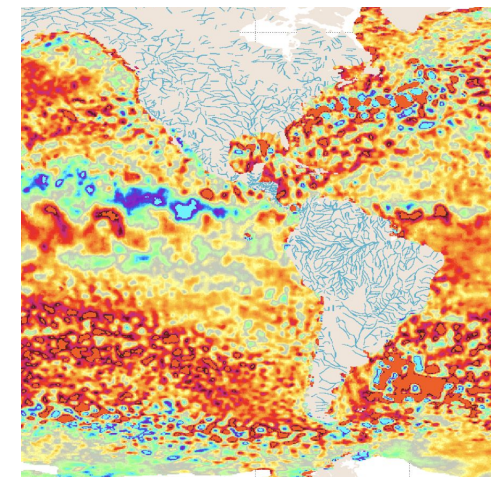
Tornado Climatology



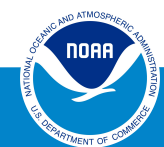
Hourly Precipitation Data



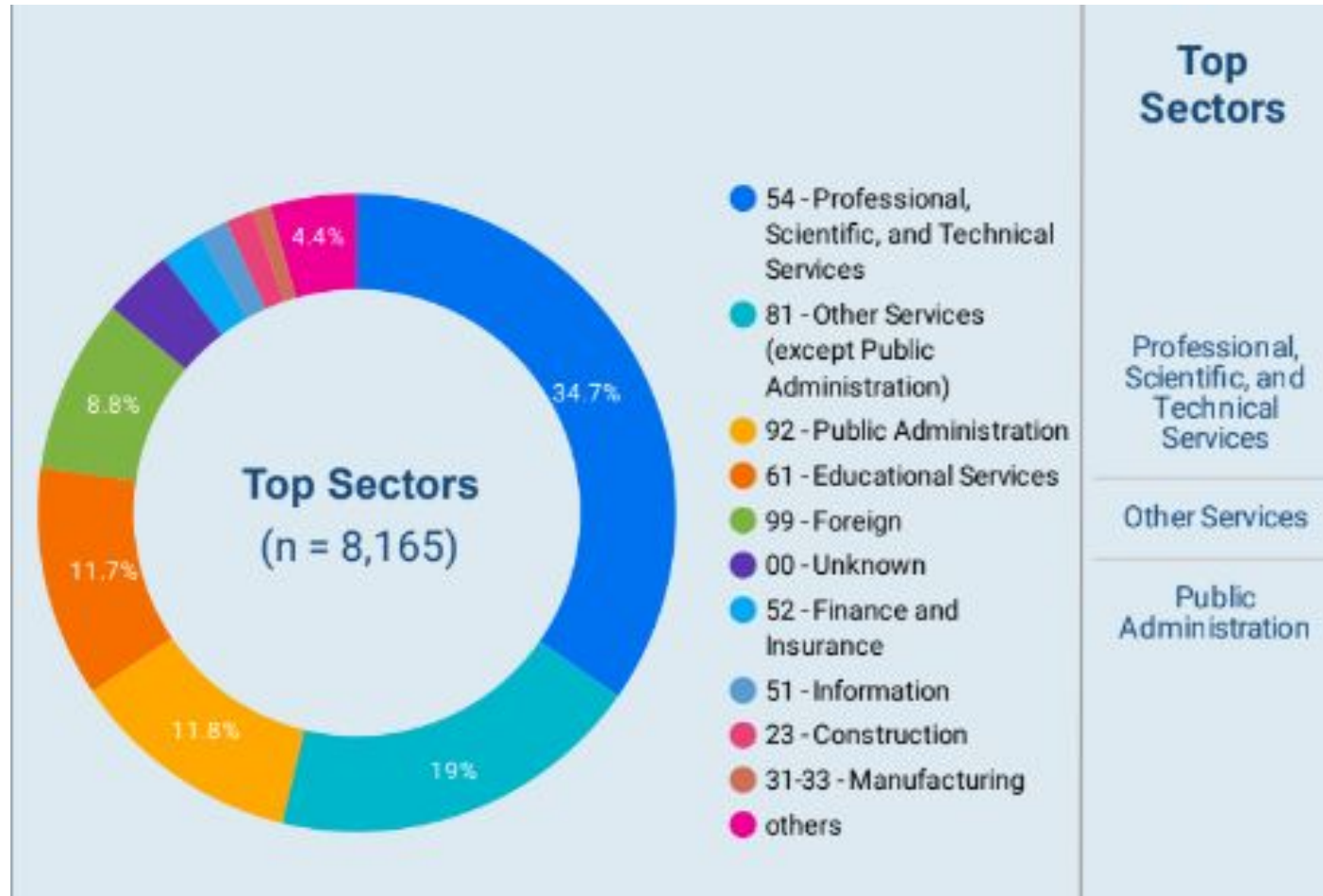
Climate Extremes Index



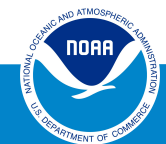
Blended Sea Winds



# Customer Insights - Who

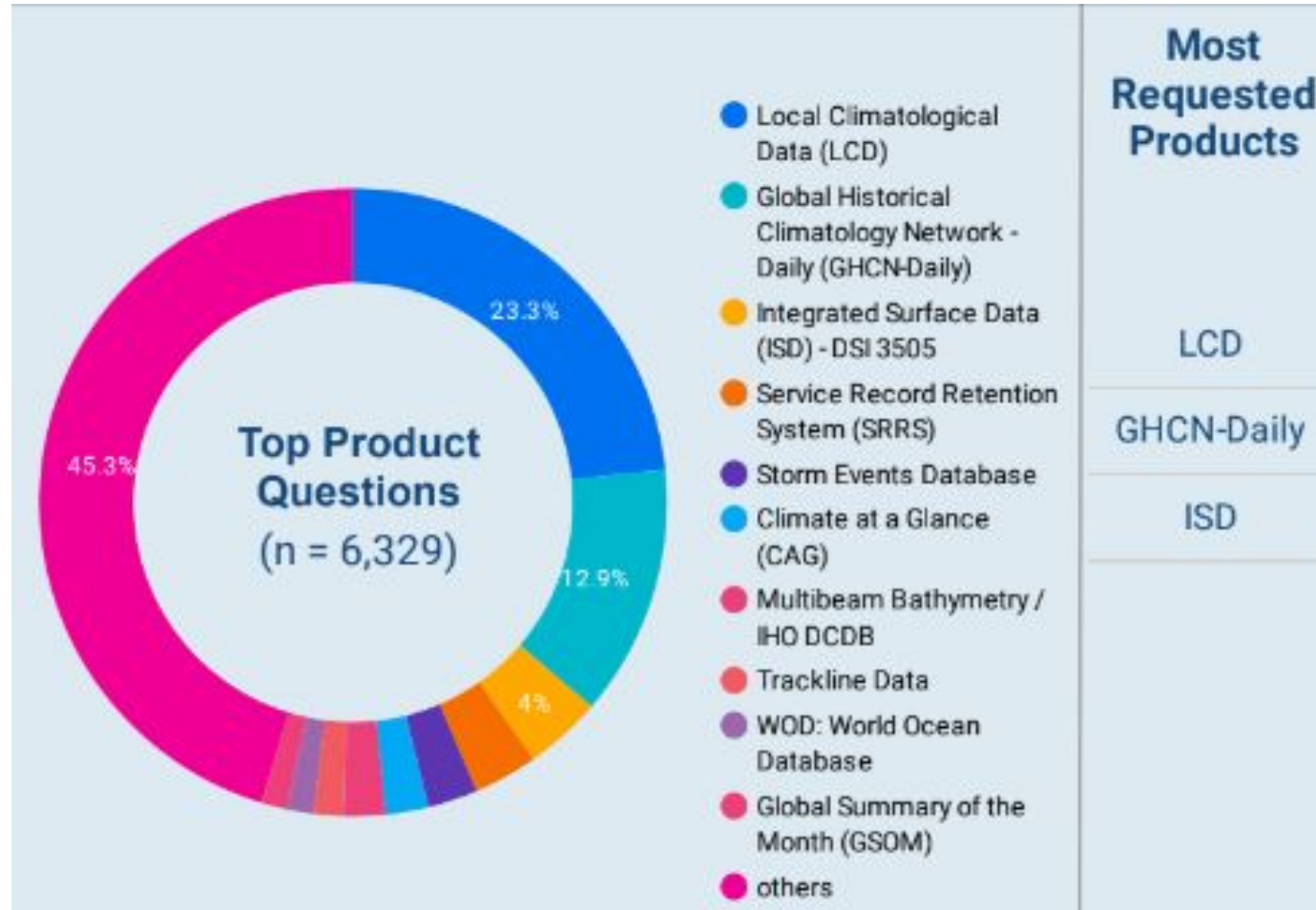


Fiscal Year 2023

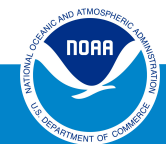




# Customer Insights - What



Fiscal Year 2023



# Case Study: U.S. Corn Growers

## From NCEI:

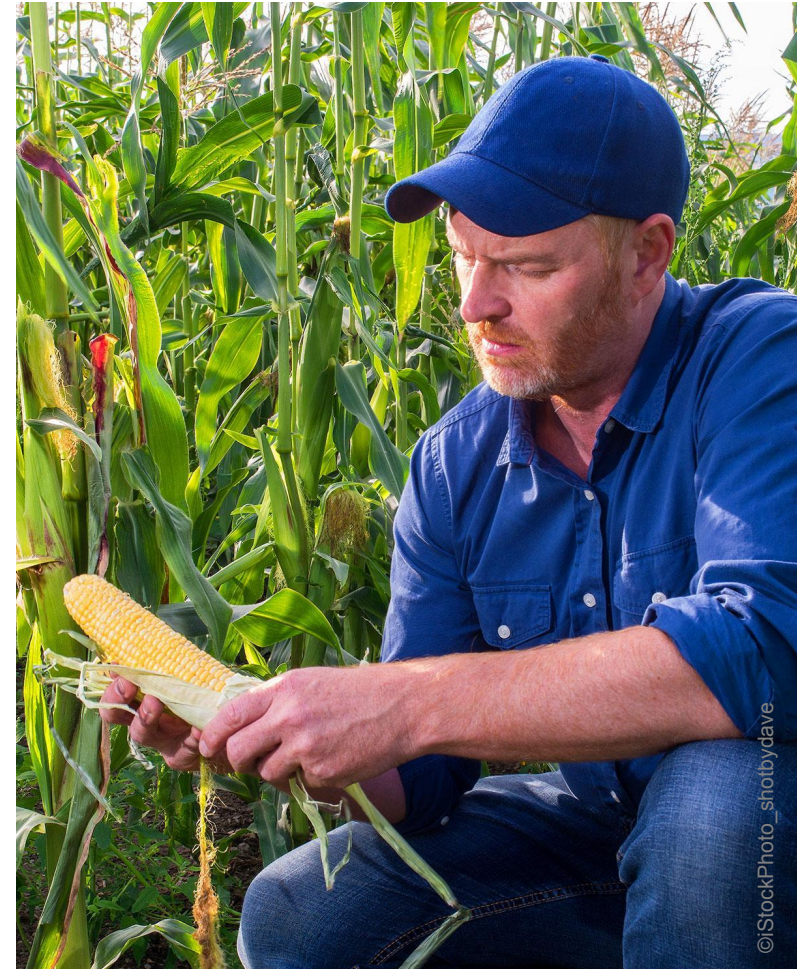
Global Historical Climatological Network—Daily

## Uses:

Farmers use climatological data to minimize waste when applying fertilizer

## Impact:

\$4B/year saved in application costs and runoff cleanup



# Case Study: Insurance Company

## From NCEI:

Next Generation Radar (NEXRAD)

## Uses:

A Texas insurer used NEXRAD in 2016 to review an unusually high number of roof claims after hail events

## Impact:

Hail claims reach \$15B annually nationwide





# Case Study: Utility Company

## From NCEI:

Climatological and historical datasets

## Uses:

San Diego Gas and Electric combined climatological and historical datasets to create criteria that minimize grid weaknesses and litigation

## Impact:

>\$2B in savings for similar events



# Case Study: Retail/Manufacturing

## From NCEI:

Regional Snowfall Index, State of the Climate reports

## Uses:

Businesses and investors use data to capitalize on as well as mitigate sales impacts from weather and climate events

## Impact:

\$2T contributed to GDP by manufacturing in 2016





# 2021 State Highlight: Alabama

- From 2001-21, NCEI information helped AL revitalize high-yield, high-margin crops (cotton, corn) that were in long-term decline due to apparent drought vulnerability.
- They are now viable with some gov't investments in irrigation incentives. This revolutionized state's cropping and irrigation strategy, doubled output.
- The state invested \$1.9M and has seen ~5 times that in return in state revenues alone.

**NCEI data, through expert use by engaged state partners, help drive a statewide economic and resilience success story**

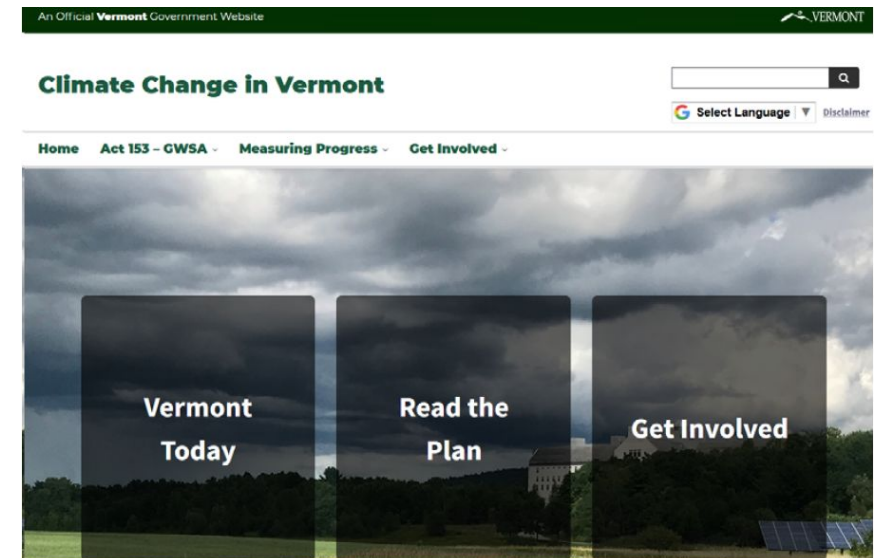
***Alabama cotton is now competitive with California.***



# 2023 State Highlight: Vermont

- In 2020, the Vermont Legislature enacted Act 153, known as the Global Warming Solutions Act with a goal of reducing greenhouse gas (GHG) emissions and creating a framework for addressing the adaptation and resilience of Vermonters to climate change.
- Resources from NCEI, NRCC, NWS-Burlington and the National Climate Assessment were integral to the creation & implementation of the first Vermont Climate Action Plan (2021).

**Strong partnerships with NOAA and across federal agencies are integral to the climate services provided by the VSCO. Access to vetted data, datasets and metadata that are of the highest quality allow the Office to provide research, outreach and education to the State.**



# Private Sector Listening Sessions

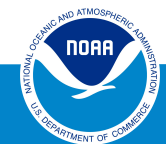
- From 2021 to Present, NOAA has held listening sessions with:
  - Retail
  - Insurance & Reinsurance
  - Architecture & Engineering
  - New Blue Economy
  - Travel, Tourism, and Outdoor Recreation
  - Third Party Providers
- Overarching goals for this series, for each sector engaged:
  - Capture input from leading stakeholders to inform continued improvement of NOAA climate services.
  - Increase sector awareness and appreciation of NOAA's roles in addressing climate-related challenges and opportunities.
  - Increase NOAA's understanding of the sector's high priority needs, gaps, and opportunities for innovation, even if not actionable by NOAA.



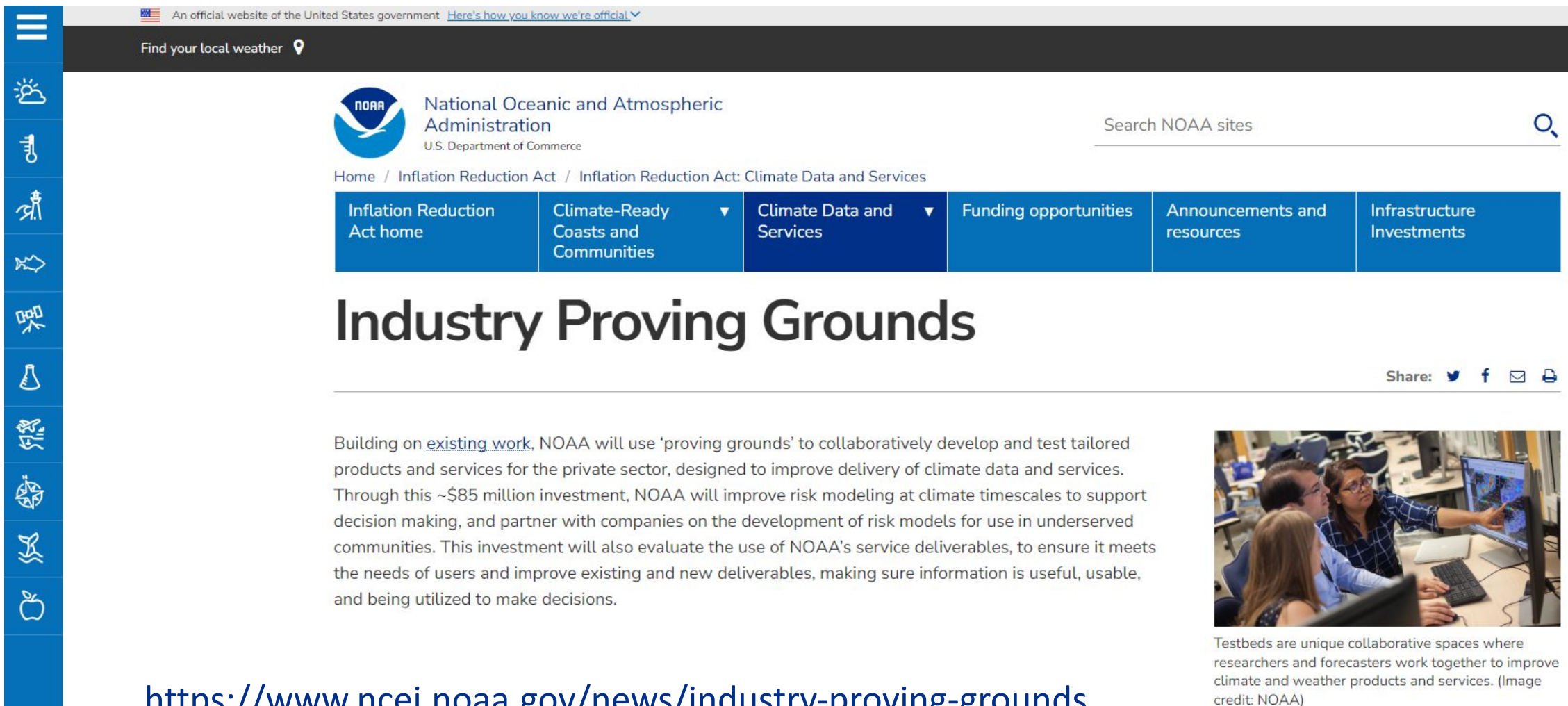


# Listening Session Takeaways

- **Assemble the most relevant data for the sector.**
  - *"don't make me go on a scavenger hunt"*
  - *"don't make me be a climate [data] scientist to use your information"*
  - *"I don't want the kitchen sink."*
- **Event catalogs / case studies:**
  - Make available data related to specific *events* so companies can examine their own historical data/practices.
- **Make forward-looking model output have similar ease of use as retrospective data**
  - *"don't make me be a climate scientist"*
- **For heavy data use / sophisticated users, leverage cloud / analysis-ready concepts**
  - *"I know what I'm doing, just put the data somewhere!"*



# Inflation Reduction Act: Climate Data and Services



The screenshot shows the NOAA website interface. At the top, there is a navigation bar with a hamburger menu on the left and a search bar on the right. Below the navigation bar is a header section with the NOAA logo and the text "National Oceanic and Atmospheric Administration, U.S. Department of Commerce". A breadcrumb trail reads "Home / Inflation Reduction Act / Inflation Reduction Act: Climate Data and Services". A horizontal menu contains several items: "Inflation Reduction Act home", "Climate-Ready Coasts and Communities", "Climate Data and Services" (which is highlighted), "Funding opportunities", "Announcements and resources", and "Infrastructure Investments". The main content area features the article title "Industry Proving Grounds" in large, bold text. Below the title is a paragraph of text: "Building on existing work, NOAA will use 'proving grounds' to collaboratively develop and test tailored products and services for the private sector, designed to improve delivery of climate data and services. Through this ~\$85 million investment, NOAA will improve risk modeling at climate timescales to support decision making, and partner with companies on the development of risk models for use in underserved communities. This investment will also evaluate the use of NOAA's service deliverables, to ensure it meets the needs of users and improve existing and new deliverables, making sure information is useful, usable, and being utilized to make decisions." To the right of the text is a photograph of three people (two men and one woman) sitting at a desk with multiple computer monitors, looking at a map on one of the screens. Below the photo is a caption: "Testbeds are unique collaborative spaces where researchers and forecasters work together to improve climate and weather products and services. (Image credit: NOAA)". At the bottom of the article content, there is a URL: <https://www.ncei.noaa.gov/news/industry-proving-grounds>. On the far left of the page, there is a vertical sidebar with various icons representing different NOAA services and data types.

<https://www.ncei.noaa.gov/news/industry-proving-grounds>



Testbeds are unique collaborative spaces where researchers and forecasters work together to improve climate and weather products and services. (Image credit: NOAA)

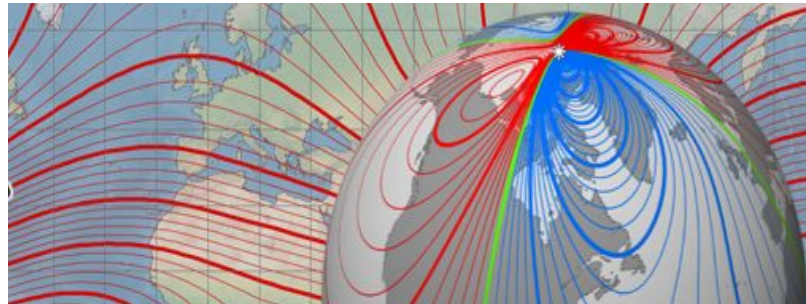
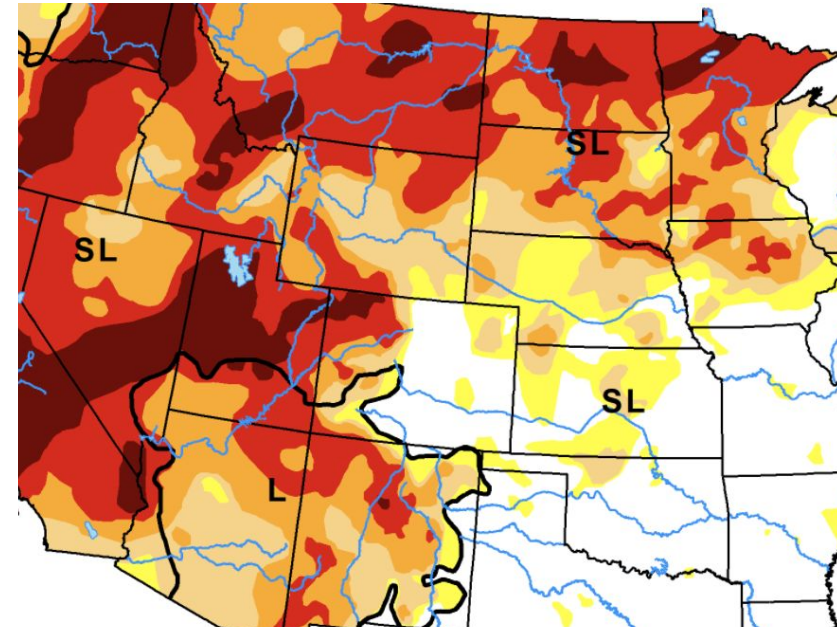
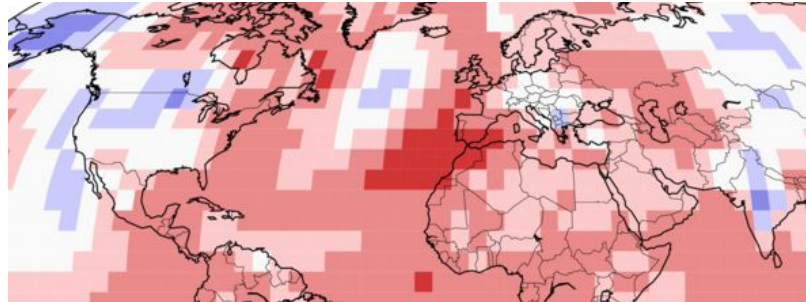
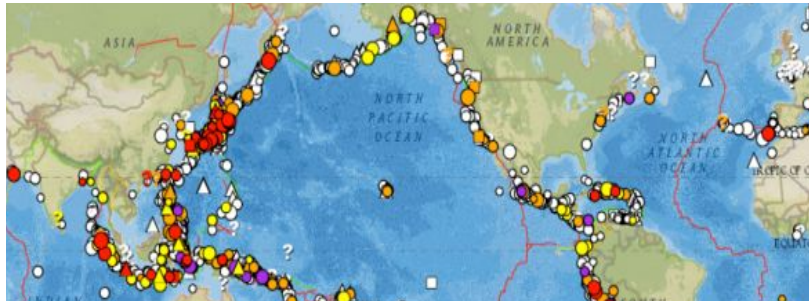
# NCEI's Value to the Nation

## 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





# Questions?

Tami Houston

[Tamara.Houston@noaa.gov](mailto:Tamara.Houston@noaa.gov)

<https://www.ncei.noaa.gov/about/our-impact>

