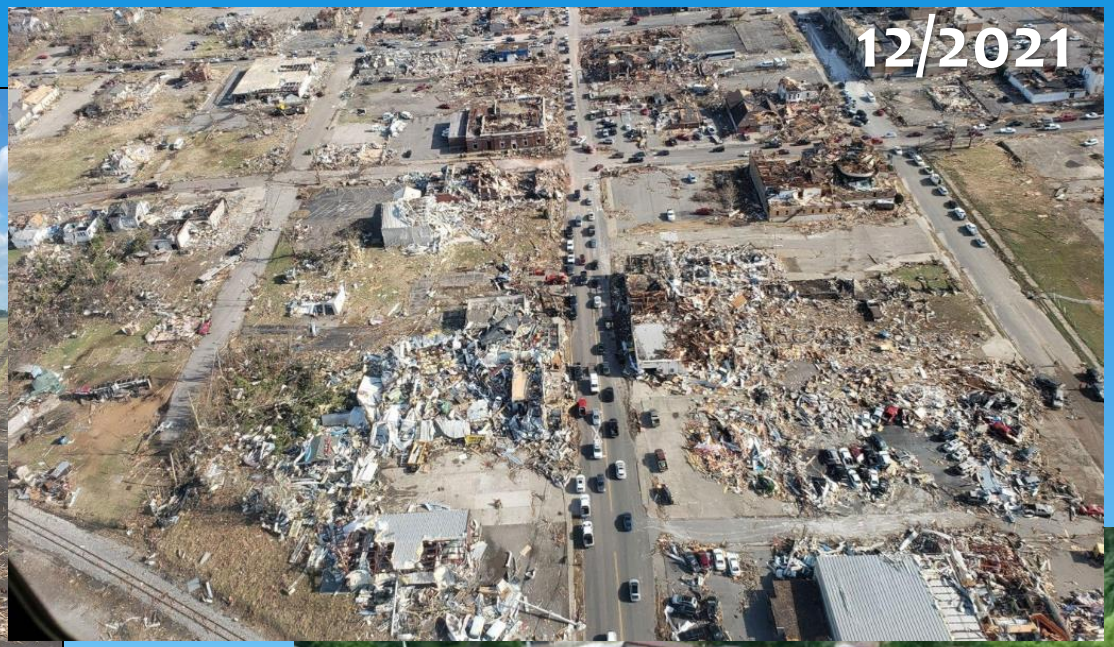
Regional Climate Services



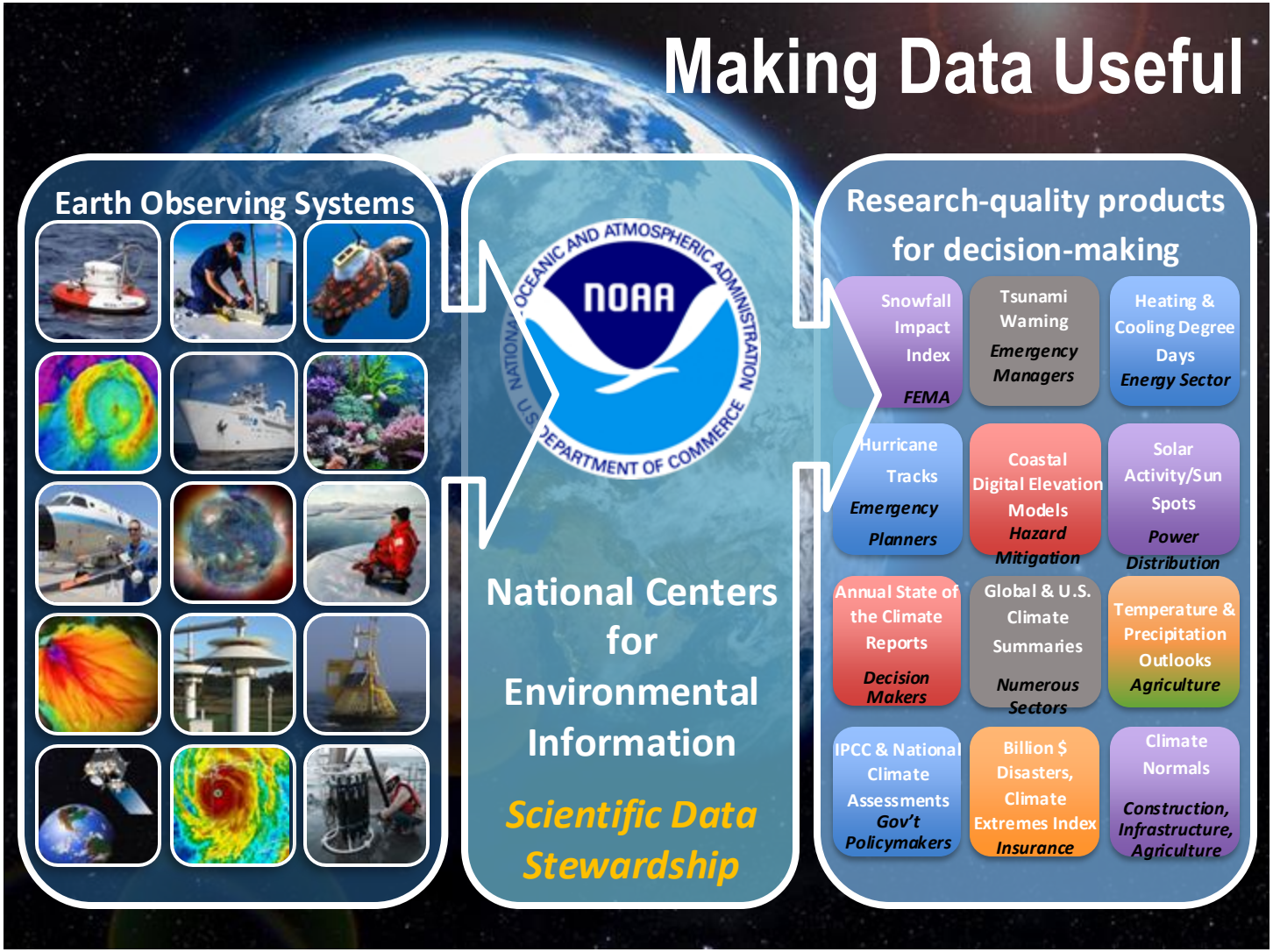
Doug Kluck (doug.kluck@noaa.gov)
Regional Climate Services Director
NOAA – National Centers for Environmental Information
August 20, 2024

United States Department of Agriculture
Midwest Climate Hub

National Drought Mitigation Center

AASC
AMERICAN ASSOCIATION OF STATE CLIMATOLOGISTS

What we do


Making Data Useful
Earth Observing Systems
National Centers for Environmental Information
Scientific Data Stewardship
Research-quality products for decision-making
Snowfall Impact Index
FEMA
Tsunami Warning
Emergency Managers
Heating & Cooling Degree Days
Energy Sector
Hurricane Tracks
Emergency Planners
Coastal Digital Elevation Models
Hazard Mitigation
Solar Activity/Sun Spots
Power Distribution
Annual State of the Climate Reports
Decision Makers
Global & U.S. Climate Summaries
Numerous Sectors
Temperature & Precipitation Outlooks
Agriculture
IPCC & National Climate Assessments
Gov't Policymakers
Billion $ Disasters, Climate Extremes Index
Insurance
Climate Normals
Construction, Infrastructure, Agriculture

Regional and Local Climate Services

The *development and delivery* of climate *information and services* that are on *time and spatial scales* needed most by *decision-makers*

***Development and Delivery**:* requires and end-to-end system that links research, modeling and assessment activities to product and services development, along with delivery systems and capacity building to help users incorporate new knowledge into their decision making.

***Products and Services**:* climate information and decision support tools that expand one's understanding of risk and impacts and promote identification of adaptation and mitigation options

Time and spatial scales: climate impacts are felt closest to home. Users need timely, place-based information on climate risks and impacts in order to make informed decisions.

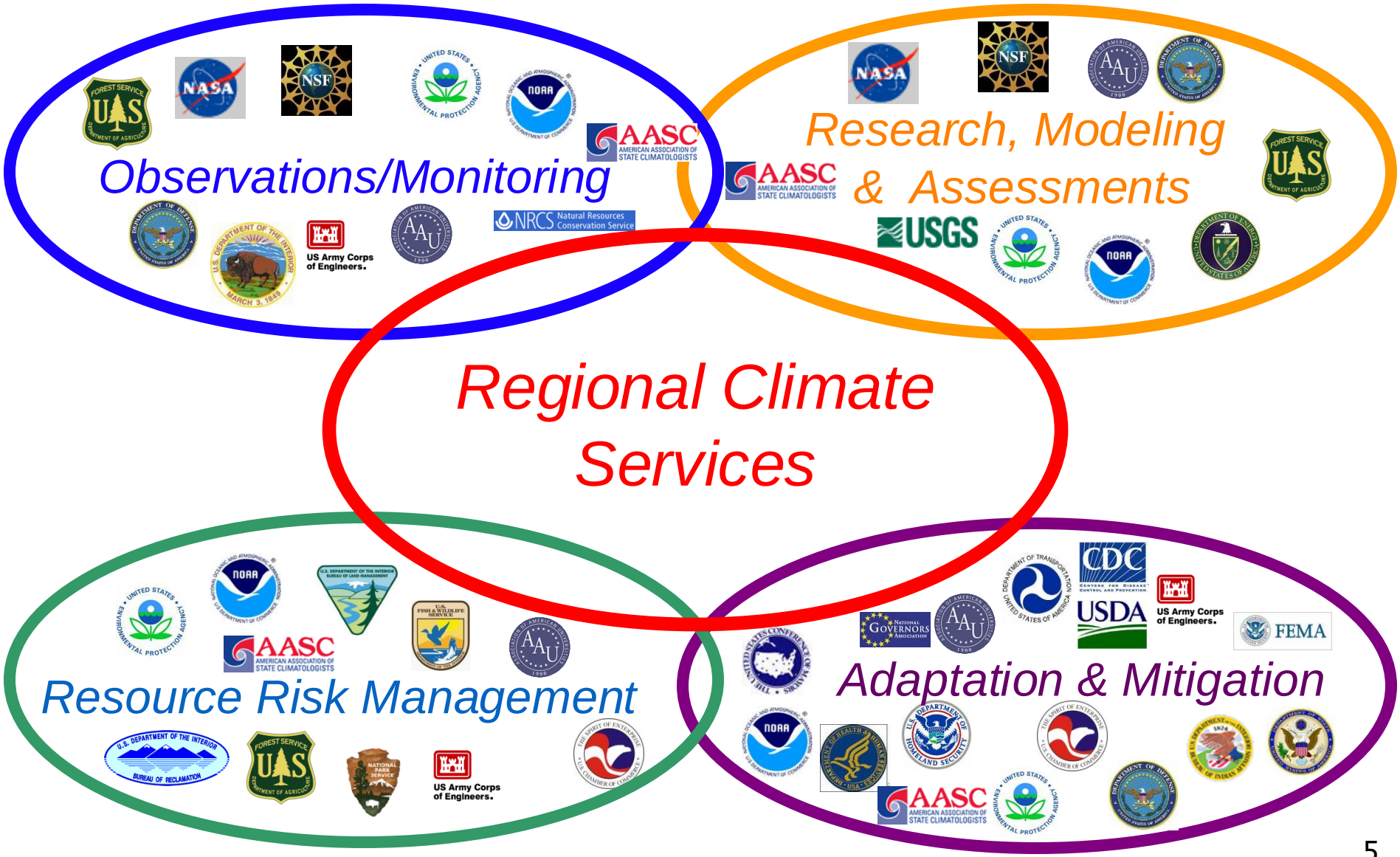
***Decision-makers**:* users of climate information representing all public and private sectors of activity. These are our climate stakeholders.

Key Regional and Local Climate Services

- **Monitoring** – value add, trends, anomalies
- **Data** – instrumentation, collection, database
- **Prediction** – interpretation, place/sector based
- **Outreach** – informing decisions, accessibility
- **Education** – capacity building for understanding our stuff
- **Research** – applied, useable (user specified)
- **Networking** – awareness, linkages, sharing
- **Partnering** – trust relationships, leveraging knowledge
- **Extremes** – addressing concerns, informing resilience decisions
- **Development** – products and tools
- **Planning –** Informing for resilience/adaptation

The National Climate Service Partnership

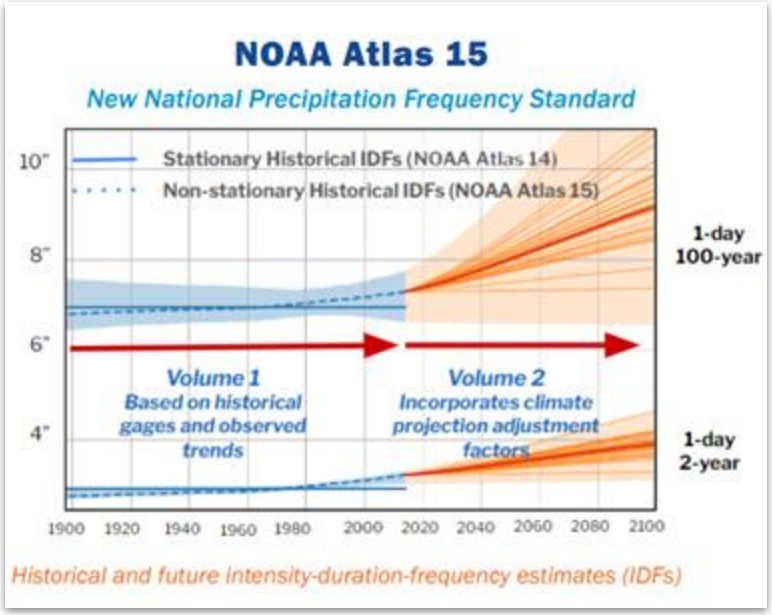
- no single agency can address the climate challenge on its own



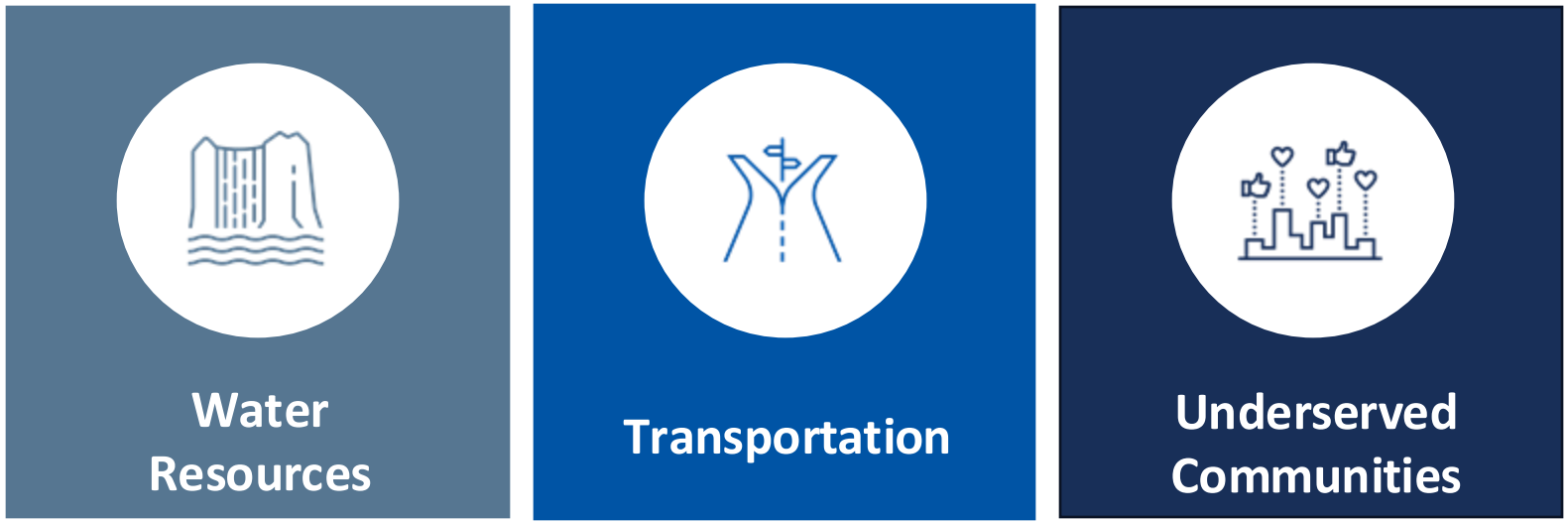
Borrowed from Pulwarty, 2010

Supporting Climate Resilience, Innovation, and Planning (SCRPI), 2024-2026

- SCRPI is an initiative to improve NOAA's capacity to deliver **extreme precipitation products** (such as Atlas 15 and Probable Maximum Precipitation estimates) to decision-makers at the regional, sectoral, and community scales.
- This project will help ensure decision-makers have the precipitation information they need to **make our transportation infrastructure, water resources, and communities safe and resilient against climate change.**



Project Focus Areas

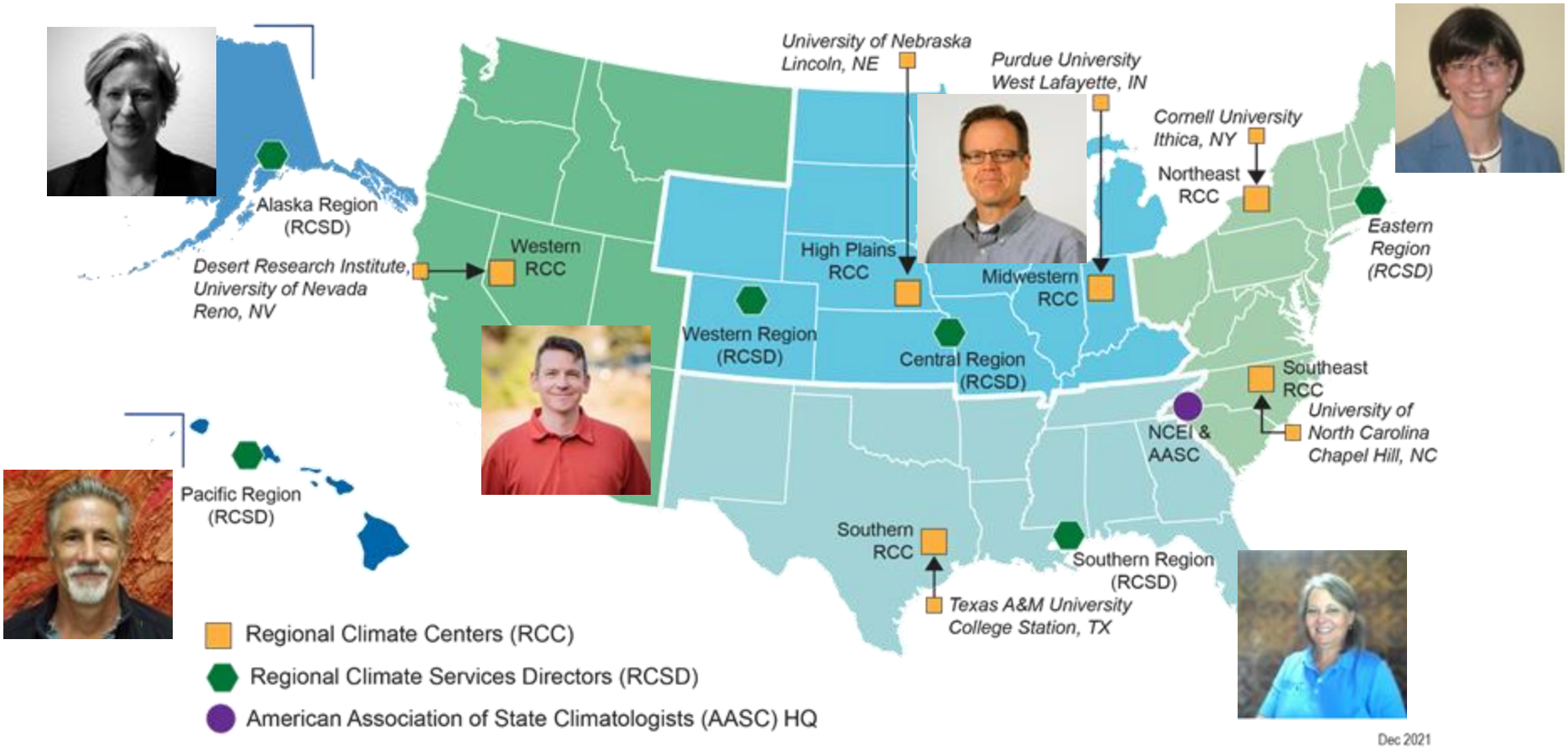


Get Involved

- Continuous engagement throughout this project is crucial for NOAA's precipitation products to reflect communities' wants and needs.
- You have an opportunity to **help us understand how you use extreme precipitation information** to make decisions, and shape the development of products NOAA provides.

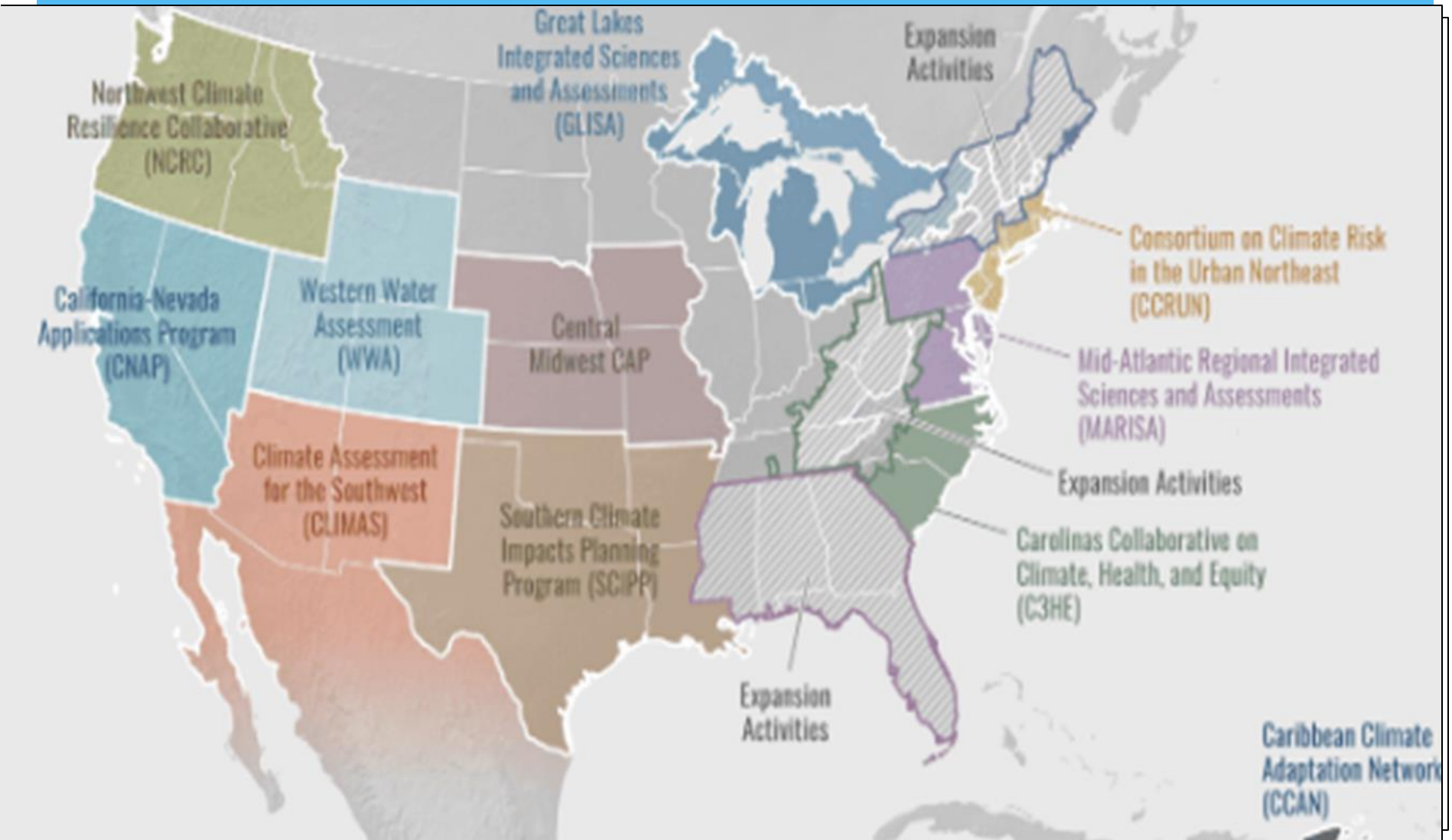
For more information, contact Doug Kluck at doug.kluck@noaa.govoug.kluck@noaa.gov.

Regional Climate Services (RCS) Regions

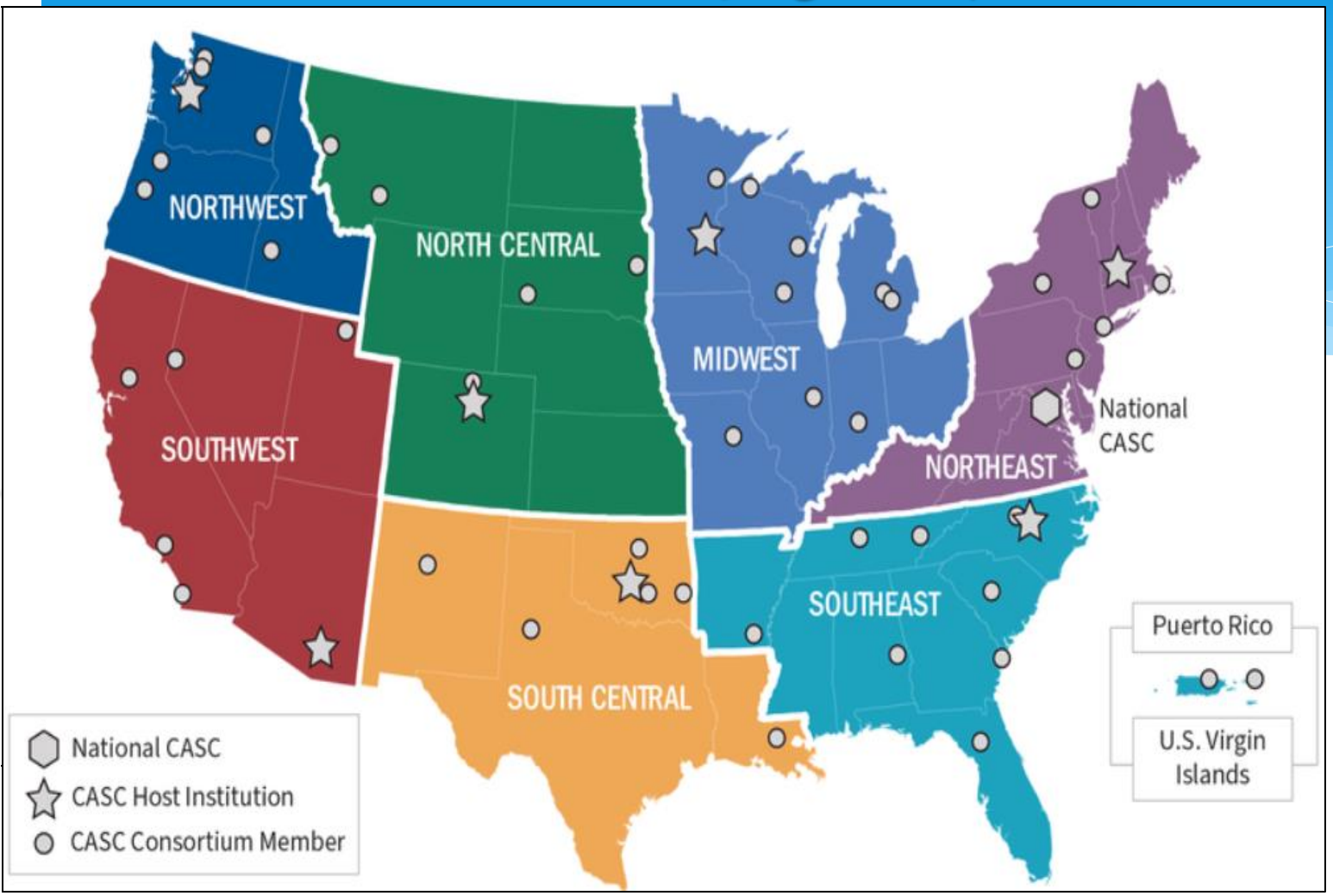


Who Are We?
NOAA Related Groups

Regional Climate Services Directors (RCSDs)
National Integrated Drought Information System (NIDIS)
American Association of State Climatologists
Regional Climate Centers (RCCs)
National Weather Service (NWS)
Climate Adaptation Partnerships (CAP, formerly known as RISAs)



Climate Services Playing Field (CASC, USDA, NCA)

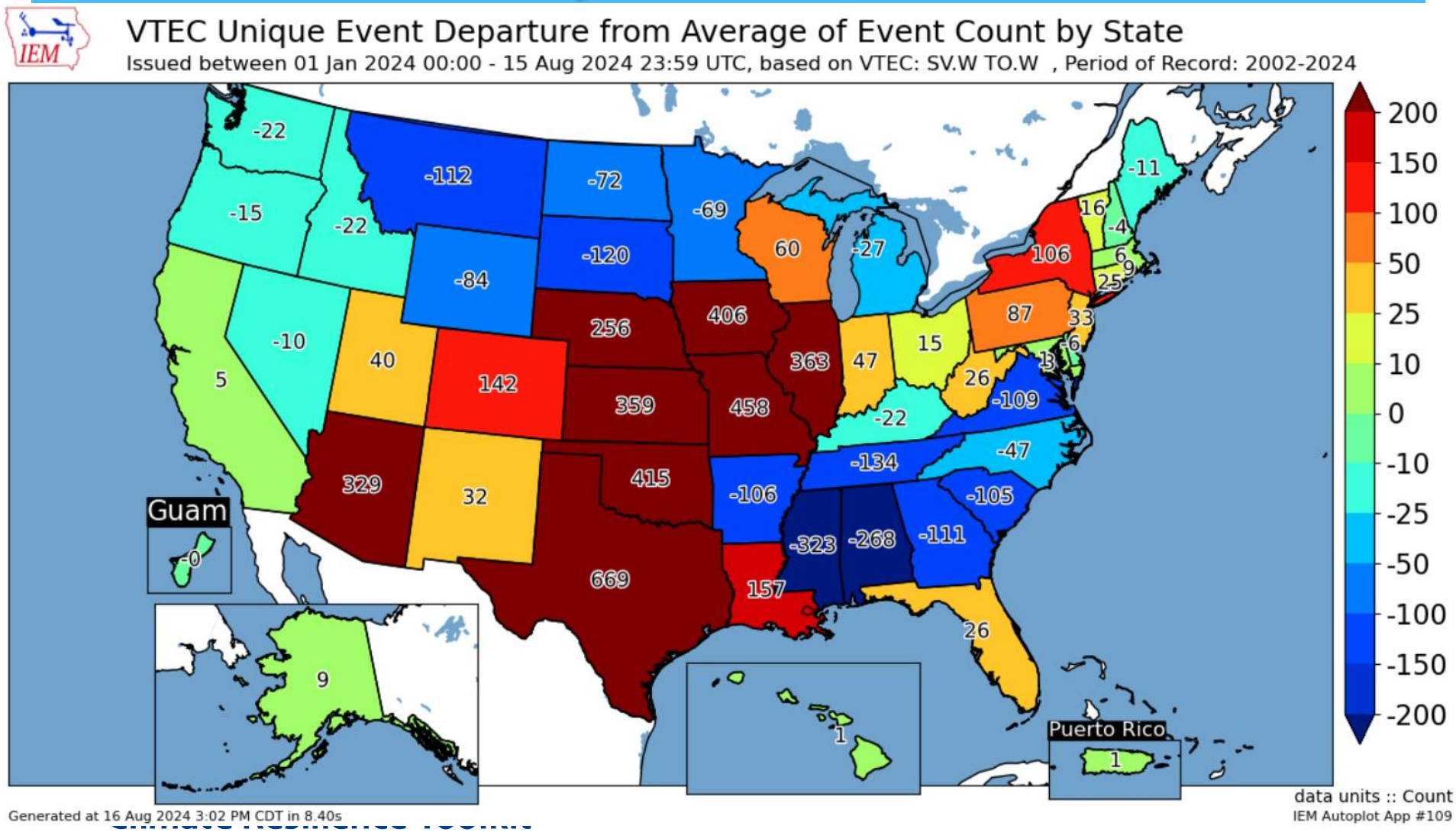


Climate Adaptation Science Centers (DOI)
National Climate Assessment (IV)
USDA Climate Ag. Hubs

Climate Players (FEMA, EPA, USGS, DHS, DOE, BIA, DOD/USACE, Tribal Nations, etc…)

* EPA, FEMA, USGS, USACE, BLM, BIA, BOR, GSA, DHS, DOD, HUD, USFWS, NPS, NRCS, Tribal Governments, etc…

Regional Climate Information Delivery in "Real-Time"



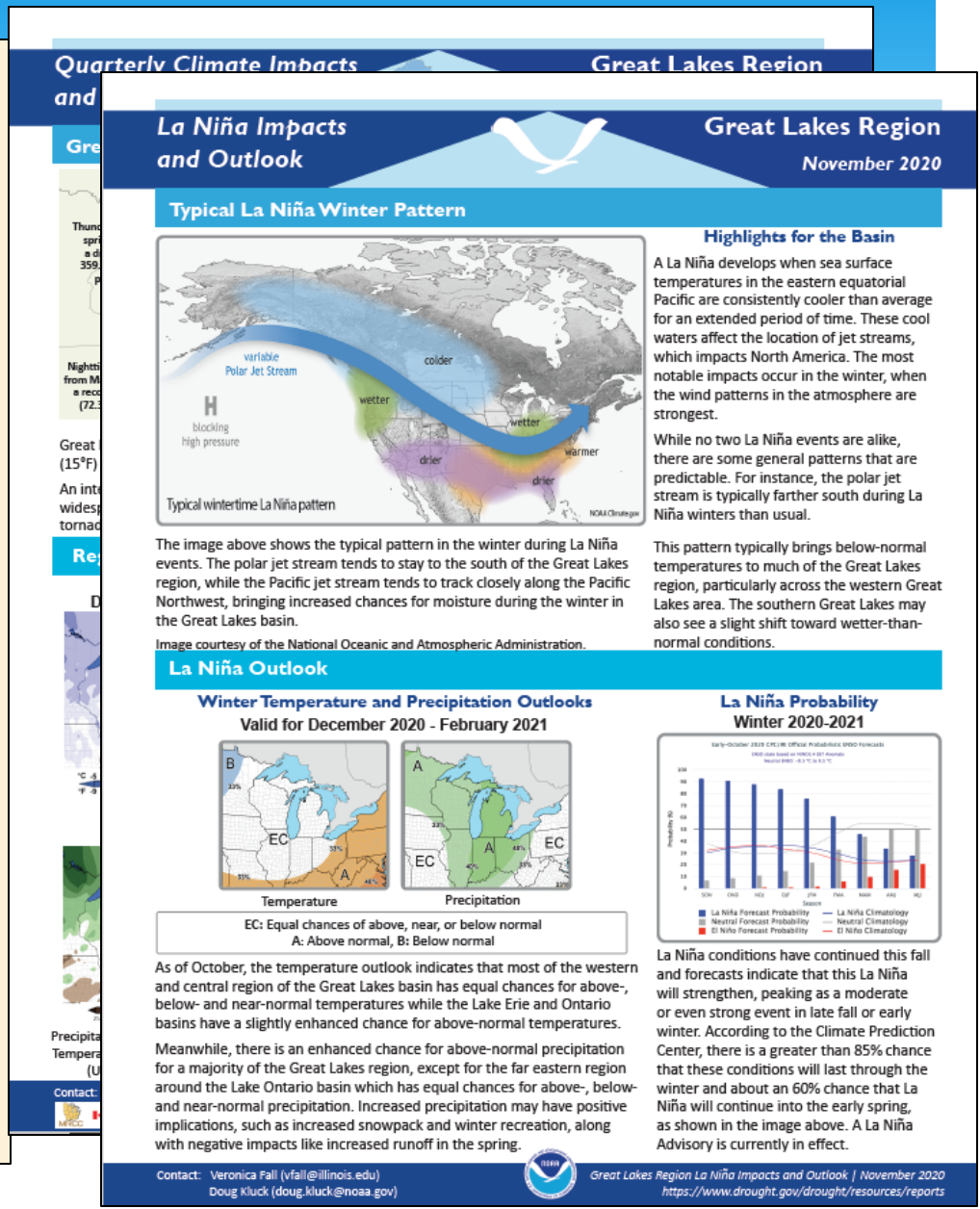
Monthly North Central Regional Climate Webinars

Real-Time Regional Climate Support

- Highlights recent past events, trends and anomalies
- Outlooks with potential impacts, risk and hazards
  - (week 2 – 6months)
- Q&A with "experts"
- 2100+ registered, 20,000+ participants
- Presenters: State Climate Offices (e.g. Jerry), NDMC, USDA
- 16 states from Great Lakes to the Rockies

Regional Climate Support: Routine Briefs

* **Quarterly Regional briefs**
  * *Single page (front & back)*
  * *Recent Past, Present, Future*
  * *Non-technical*
* **Event Based Briefs**
  * *ENSO or Extreme*
  * *Also non-technical*
  * *As needed*
  * *Potential regional impacts*
* **Multi-Partner Efforts**



Quarterly Climate Impacts and ... Great Lakes Region

La Niña Impacts and Outlook

Great Lakes Region

November 2020

Typical La Niña Winter Pattern

The image above shows the typical pattern in the winter during La Niña events. The polar jet stream tends to stay to the south of the Great Lakes region, while the Pacific jet stream tends to track closely along the Pacific Northwest, bringing increased chances for moisture during the winter in the Great Lakes basin.

Image courtesy of the National Oceanic and Atmospheric Administration.

Highlights for the Basin

A La Niña develops when sea surface temperatures in the eastern equatorial Pacific are consistently cooler than average for an extended period of time. These cool waters affect the location of jet streams, which impacts North America. The most notable impacts occur in the winter, when the wind patterns in the atmosphere are strongest.

While no two La Niña events are alike, there are some general patterns that are predictable. For instance, the polar jet stream is typically farther south during La Niña winters than usual.

This pattern typically brings below-normal temperatures to much of the Great Lakes region, particularly across the western Great Lakes area. The southern Great Lakes may also see a slight shift toward wetter-than-normal conditions.

La Niña Outlook

Winter Temperature and Precipitation Outlooks

Valid for December 2020 - February 2021

Temperature Precipitation

EC: Equal chances of above, near, or below normal
A: Above normal, B: Below normal

As of October, the temperature outlook indicates that most of the western and central region of the Great Lakes basin has equal chances for above-, below- and near-normal temperatures while the Lake Erie and Ontario basins have a slightly enhanced chance for above-normal temperatures.

Meanwhile, there is an enhanced chance for above-normal precipitation for a majority of the Great Lakes region, except for the far eastern region around the Lake Ontario basin which has equal chances for above-, below- and near-normal precipitation. Increased precipitation may have positive implications, such as increased snowpack and winter recreation, along with negative impacts like increased runoff in the spring.

La Niña Probability

Winter 2020-2021

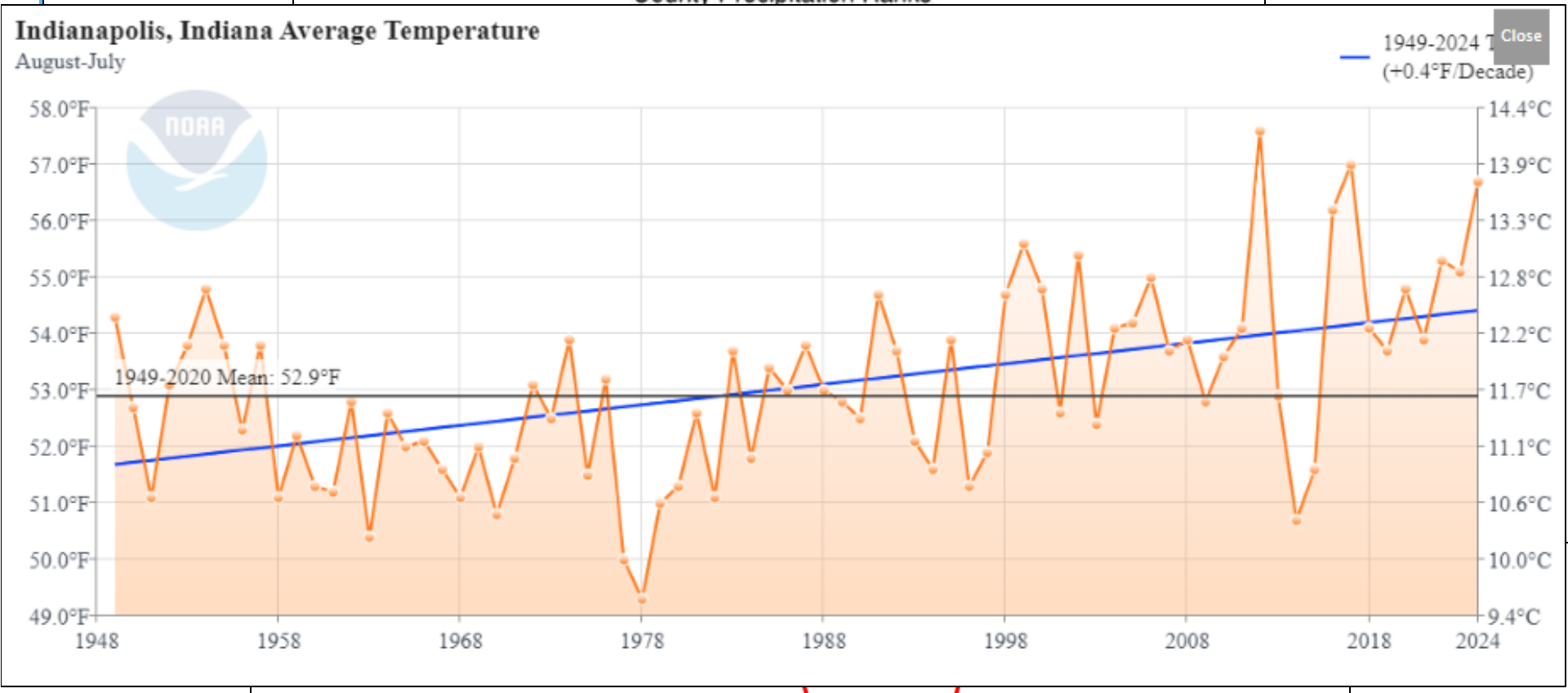
La Niña conditions have continued this fall and forecasts indicate that this La Niña will strengthen, peaking as a moderate or even strong event in late fall or early winter. According to the Climate Prediction Center, there is a greater than 85% chance that these conditions will last through the winter and about an 60% chance that La Niña will continue into the early spring, as shown in the image above. A La Niña Advisory is currently in effect.

Contact: Veronica Fall (vfall@illinois.edu)
Doug Kluck (doug.kluck@noaa.gov)

Monitoring the Climate

State of the Climate/Climate at a Glance

County Precipitation Ranks



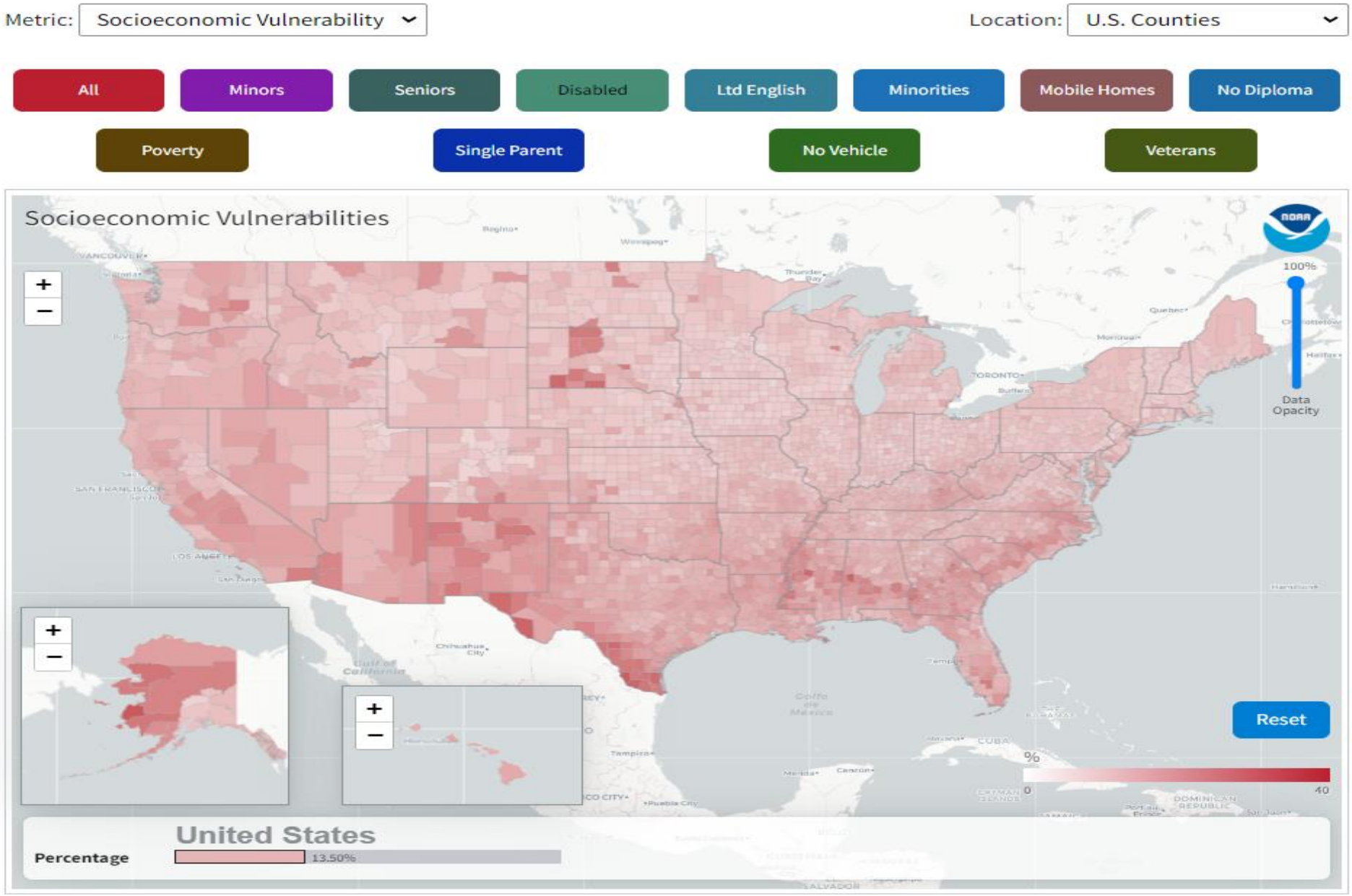
8 (tied)	2021	0.86	1.55
10	2014	0.77	1.39

https://www.ncei.noaa.gov/access/monitoring/monthly-report/global/202313

https://www.ncdc.noaa.gov/sotc/

https://www.ncdc.noaa.gov/cag/

2023 Billion $ Disasters



Thanks

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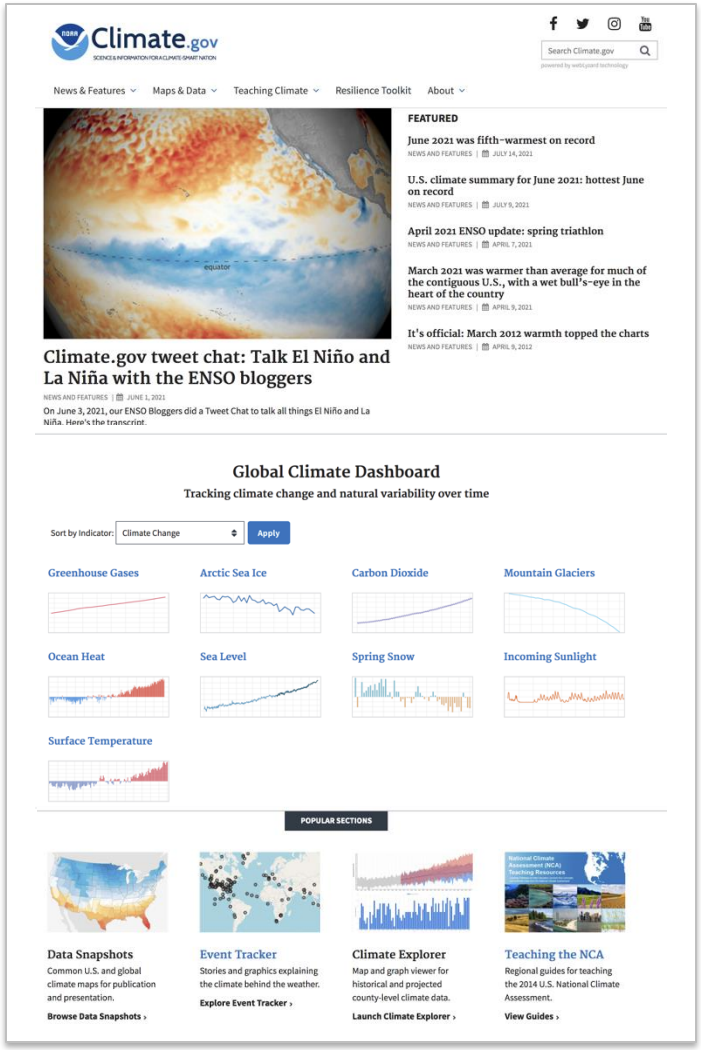
* Regional Webinar link:
  * Sign up here: https://attendee.gotowebinar.com/register/9815053244228027 8
* **Regional/NOAA climate information email list:** Doug.kluck@noaa.gov
* Climate Resilience Toolkit: https://toolkit.climate.gov/
  * Midwest: https://toolkit.climate.gov/regions/midwest
* 5th National Climate Assessment: https://nca2023.globalchange.gov/
* NOAA's Climate At A Glance: https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/
* NOAA's State of the Climate: https://www.ncei.noaa.gov/access/monitoring/monthly-report/
* Billion-Dollar Weather and Climate Disasters: https://www.ncei.noaa.gov/access/billions/

Climate.gov, Drought.gov, Weather.gov, Heat.gov



www.climate.gov

toolkit.climate.gov

Climate Resilience Toolkit: https://toolkit.climate.gov/