



# North Carolina Institute for Climate Studies

**NC STATE**  
UNIVERSITY

December 8, 2025

## MEMORANDUM

**TO:** Jess Beck-Stimpert  
Chief of Staff, NCEI

**FROM:** Otis Brown  
Director, NCICS

**SUBJECT:** Weekly Report (11/24/25–12/5/25)

### NCICS Highlights

- N/A.

### Administrative

- Steven Marcus continued the transition to Jamf tools with maintenance, policy clean up, addressing setup manager challenges, and client/server scripts.
- NCICS staff observed the November 27 Thanksgiving Day holiday.

### Science and Project Updates

#### *Assessments*

- *State Climate Summaries* work continued, including
  - James Anheuser updating Alaska summary plots, captions, and data, and an Extreme Precipitation plot,
  - Mark Essig reviewing and editing alt text,
  - Andrea McCarrick reviewing alt text and quality-controlling web content,
  - Laura Stevens working on Alaska summary updates, and, with McCarrick, finalizing Western Region states for web publication,
  - Stevens, Kate Johnson, and NEMAC's Dave Michelson and Jeff Bliss discussing the Data Explorer tool,
  - Intern Alexis Visovatti working on alt text and references, and
  - Visovatti, Liz Cox, and Tami Houston (NCEI) working on engagement plans.
- *United By Nature* activities continued, with
  - Essig editing second drafts of chapters and consulting on timeline plans.
- *Intergovernmental Panel on Climate Change (IPCC) v.2* work continued, with
  - McCarrick reviewing and editing the Author Handbook.
- *Assessment Collaboration Environment (ACE) V2* finalization continued, with
  - Johnson, Stevens, Ryan Cox, Aaron Goodman, Angel Li, and NCEI's Jessica Blunden and James Reagan discussing the use of ACE v2 for the upcoming 2025 BAMS State of the Climate Report,

- Cox working on traceability, monitoring, and the billing infrastructure,
- Goodman updating and improving Figures components, and
- Johnson working on bug fixes, adding search functionality to chapter drafts, and beginning metadata survey components development.
- Stevens and Xia Sun attended the monthly Downscaling Workstream Telecon led by Paul Ullrich (*Lawrence Livermore National Laboratory*).
- Visovatti worked on figure data verification for the Sea Level Rise report.

#### ***Access Development and Information Technology Services***

- James Anheuser developed a management plan for the AI Downscaling project.
- Ankur Banerji prepared a Model Context Protocol (MCP) server for the GOES-16 aerosol dataset as a part of the AI co-scientist project.
- Dhruv Patel continued pre-processing the Infrared Sounder Atmospheric Temperature and Humidity Profiles dataset for the Air Temperature variable, and explored gridding approaches to optimize its integration into the Gridded Data Project workflow.

#### ***Science and Services***

- Optimum Interpolation Sea Surface Temperature (OISST) v3 work continued, with
  - Ankur Banerji working with Garrett Graham on pipeline debugging, and
  - Alethia Kielbasa working with Graham and Shuhai Li to convert Northern and Southern Hemisphere sea ice concentration to sea surface temperature.
- Kielbasa calculated streamflow 2-year return periods using station gauge data across the U.S. and analyzed return period changes over time.
- Pooja Hari Ambrish worked on the obs4MIPs pipeline and Climate Data Record (CDR) dashboard functionality updates.
- Emma Scott updated extreme precipitation event plots observed by the U.S. Climate Reference Network (USCRN), and created a map of station locations and regions of interest for the forthcoming monthly-Accumulated Climate Extremes paper.
- Ronnie Leeper updated estimates of fractional available water (FAW) and U.S. Drought Monitor-based drought events at USCRN stations through 2024, developed a pipeline to generate FAW estimates across the Contiguous U.S. using NASA's Soil Moisture Active Passive satellite data, and defined drought events for every HUC6 region in the U.S.
- Laura Stevens sent invitations to potential lead authors and reviewers for the North America section of the 2025 BAMS State of the Climate Report.
- Haiyan Teng discussed the community paper outline with MAPP project University of Miami team members, participated in the bi-weekly MAPP project meeting, and drafted documents outlining work tasks and deliverables and detailing the storyline approach.
- John Uehling drafted the monthly State of the Climate synoptic and tropical cyclone reports.

#### ***Communications, Outreach, and Engagement***

- Liz Cox worked on presentation materials for the upcoming 30th Annual Applied Climatology Conference and the AGU25 meetings, and attended a North Carolina Wildfire Alert and Weather Systems seminar.
- Laura Stevens worked with Lauren Lampley (*NC Arboretum*) on plans for the spring 2026 iteration of the NCICS "Climate Science and Impacts" adult education course.

- Mark Essig reviewed and edited a poster by David Coates, John Uehling, and Olivier Prat for the upcoming AGU25 meeting.

## Travel

- 12/2-12/3: Douglas Rao participated in the National Academies of Sciences, Engineering, and Medicine (NASEM) “Future Directions for Earth Observations and Data Stewardship” workshop in Washington, DC.

## Partnerships and Collaborations

- 14<sup>th</sup> Weather Squadron work continued, with
  - Alethia Kielbasa, Shuhai Li, and John Uehling working on GFDL-SPEAR bias correction pipeline optimization for improved processing time,
  - Li testing the STAR algorithm for compound variables downscaling and post-processing, and
  - Kyle Wodzicki implementing the FITS index in STAR-ESDM downscaling and working on a CI/CD pipeline for code testing and deployment.
- Kenneth Kunkel discussed NOAA Atlas 15 content, status, and schedule with Delaware Climate Office staff, including Kevin Brinson, and Daniel Leathers, and met with Atlas 15 Volume 1 team members to coordinate activities and share information.
- Emma Scott created choropleth charts to show the various methodologies used for different regions of NOAA Atlas 14 for sub-hourly duration events.
- Laura Stevens provided a figure on Minnesota temperature change to Alison Banks Cariveau (Minnesota Department of Natural Resources) for the “Minnesota’s Wildlife Action Plan 2025-2035: Conserving Habitats and Biodiversity (SWAP)” report.
- James Anheuser and NC State University staff discussed potential National Science Foundation (NSF) proposal collaboration.
- Haiyan Teng and World Climate Research Programme (WCRP) Explaining and Predicting Earth System Change leadership continued discussions on potential webinar development.

## Publications

- Wuebbles, D.J. and **K.E. Kunkel**, 2025: Our changing climate is presenting major challenges to the Great Lakes Region. *Journal of the American Water Resources Association*, accepted.
- Wyatt, B. M., N. Gaur, P. Knox, M. R. Levi, M. Cosh, E. Osenga, M. Skumanich, S. M. Quiring, B. G. Illston, E. Ayers, Z. Libohva, V. Sehgal, R. C. Sullivan, K. R. Brinson, O. Crompton, **R. D. Leeper**, P. B. Duncan, X. Zhang, R. F. Brown, C. Quintero, L. Rivera, C. Baffaut, and T. Caldwell, 2025: Data Quality and Metadata Guidelines for the Soil Moisture Monitoring Community. *Vadose Zone*, submitted.