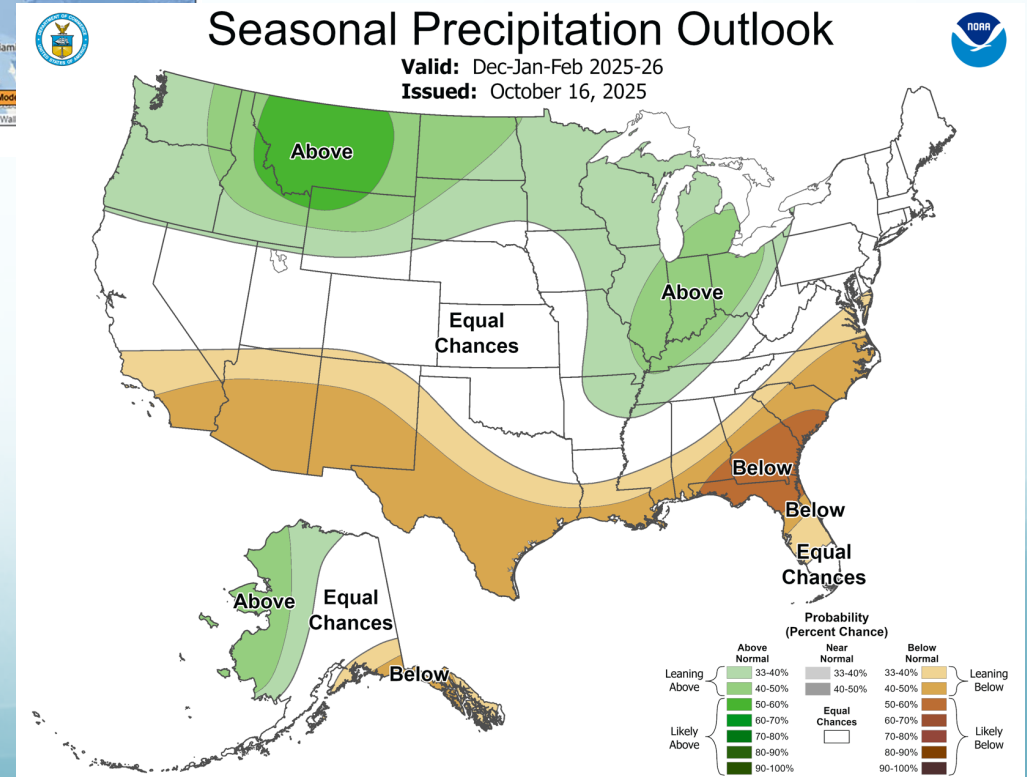
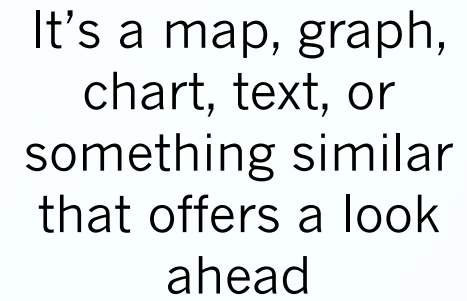


Winter Outlook for the Tug Hill

By: Samantha Borisoff, Climatologist
Northeast Regional Climate Center





But It Can Be So Much More...

Midwest Ag-Focus Climate Outlook

January 10, 2025

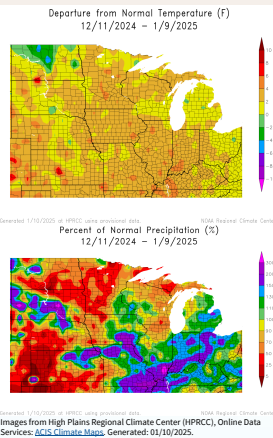
Main Points

- Cooler-than-normal conditions may persist throughout January.
- Seasonal outlooks indicate uncertainty in temperature trends, with eastern portions of the Midwest leaning towards greater-than-normal precipitation.
- The upper Midwest is lagging in snowfall (compared to normal to-date accumulation), while portions of the lower Midwest has experienced 200 to 300% of normal to-date snowfall.
- Frost depths are developing, with up to 2 feet in northern areas.

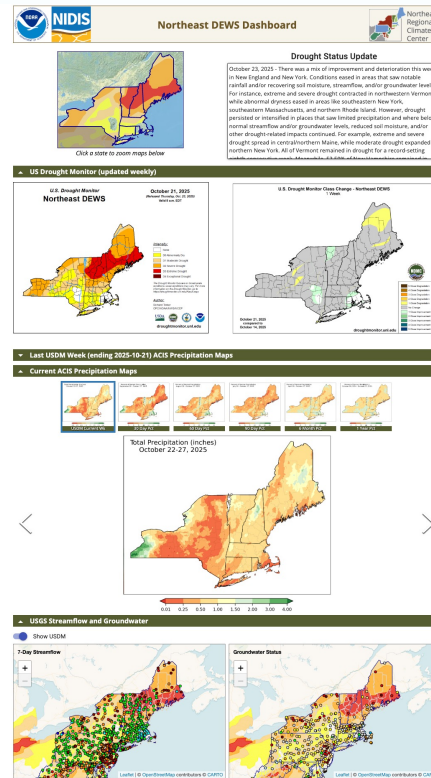
Current Conditions

Over the past 30-days, precipitation (as percent of normal) was widely variable across the region; however, the departure from normal precipitation was generally 1.5 inches across the region. Due to less precipitation falling during the winter season, small changes in precipitation quantity can account for large changes in proportion of normal precipitation received. Drier-than-normal conditions are most evident in the southwest Corn Belt, where less than 0.1 inch of precipitation has fallen in the last month. A band of wetter-than-normal conditions fell across portions of the southeast and eastern Corn Belt, with the highest precipitation occurring in the tri-state region of Missouri, Illinois, and Kentucky, with 7+ inches of liquid precipitation.

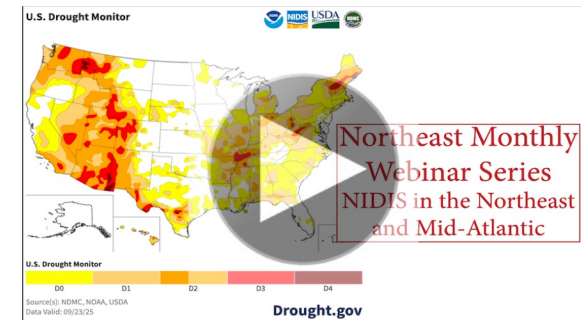
Temperatures over the past 30 days were 2 to 6 degrees (°F) above normal across the Corn Belt. Small pockets experienced temperatures 6 to 9 degrees (°F) above normal, and a pocket in the northern Plains experienced slightly cooler than normal temperatures.



www.climatehubs.usda.gov/hubs/midwest



NIDIS in the Northeast and Mid-Atlantic



Individual presentations (pdf):

[September Recap & DEWS Discussion \(Samantha Borisoff - NRCC\)](#)

[NOAA's NIDIS in the Northeast and Mid-Atlantic \(Crystal Stiles and Elizabeth Ossowski - NOAA/NIDIS\)](#)

About Monthly Webinars

The Northeast Regional Climate Center hosts a monthly webinar to address timely weather and climate topics. These webinars are available to watch live. To receive notifications about upcoming webinars, e-mail us at nrcc@cornell.edu. Recorded versions are available within a week after the live webinar.

It can provide context and interpretation of information to help folks make decisions and take action

It can be presented in different formats... report (two-pager), website, webinar, etc.



Pieces of an “Outlook”

First Drought then Flood; Weather Whiplash Eases Some Drought Concerns but Groundwater Should Still Be Monitored

Key Points

1

- According to the latest U.S. Drought Monitor (valid on Tuesday, December 10, 2024), almost all of the Northeast Drought Early Warning System (DEWS) is experiencing dryness and drought.
- Widespread rainfall across the region on Wednesday and lake effect snow events earlier this month improved conditions. Rain and lake effect snow greatly reduced fire risk, and benefited surface soils and streamflows (where not frozen).
- Extreme Drought (D3) continued to impact Massachusetts. Severe Drought (D2) conditions also continued for most of southern New England, southeast New York, and Long Island. Rain this week will take the edge off these conditions, and precipitation deficit improvement is anticipated.
- At some locations, groundwater recharge will lag behind moisture replenishment in soils and in streams. As the top layers of soil begin to freeze and become snow covered, additional snow melt and rain may not filter through to fully recharge all wells.
- The National Weather Service Climate Prediction Center's (CPC's) 8-14 day outlooks don't offer significant chances for the above-normal precipitation that we need or the above-normal temperatures that would allow for groundwater recharge in this time frame.
- States just to our south also continued to struggle with Moderate to Extreme Drought (D1-D3), with late growing season impacts to Christmas trees and harvest difficulties for New Jersey cranberries.

Learn more about precipitation deficits from the [Northeast Regional Climate Center](#).

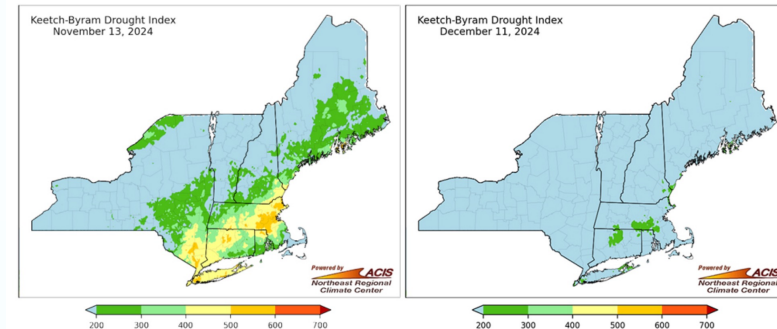
2

Current Conditions in the Northeast

- New York, Connecticut, and Massachusetts are maintaining their drought advisories, watches, warnings.
- Recent rains and lake effect snow helped reduce fire risk and improve streamflow. Monitoring groundwater recharge will be key for drinking water management.

Figure 1. Keetch-Byram Drought Index (KBDI) for the Northeast

Key takeaway: Fire risk improved greatly across the region. Late November and early December rain and snowfall reduced the fire risk.



The Keetch-Byram Drought Index (KBDI) attempts to measure the amount of precipitation necessary to return the soil to full field capacity. The index ranges from zero, the point of no moisture deficiency, to 800, the maximum drought that is possible. The value indicates the amount of net rainfall—from 0 inches (0) to 8 inches (800)—that is required to reduce the index to zero, or saturation. The map on the left is valid November 13, 2024. The map on the right is valid December 11, 2024. These maps show an elimination of values over 300 and a reduction of geographic coverage, illustrating the reduced fire danger in the region. Source: [Northeast Regional Climate Center](#).

State and Regional Drought Impacts

3

New York

- Regional reservoirs storing water for [New York City](#) continue to show lower capacities.
- Work on the [Delaware Aqueduct project](#) is on hold for now. Work will resume when conditions are more favorable.
- The [New York Department of Environmental Conservation \(DEC\)](#) has kept most of the state in a drought watch, except for several counties in southeastern New York (including New York City), which are under a drought warning.
- New York City's drought warning, declared on November 18, 2024, was the first drought warning issued there in more than 20 years. City agencies and residents are asked to take water conservation measures.

Connecticut

- Connecticut's Interagency Drought Workgroup met on December 5, 2024 to review conditions and made the recommendation for the entire state to [remain in a Stage 2 drought advisory](#) level.
- Just before the Thanksgiving, Connecticut's governor [lifted the statewide burn ban on some public lands after an unprecedented fall fire season](#).

Massachusetts

- Massachusetts [Critical Drought \(Level 3\)](#) persists across most of the state.



4

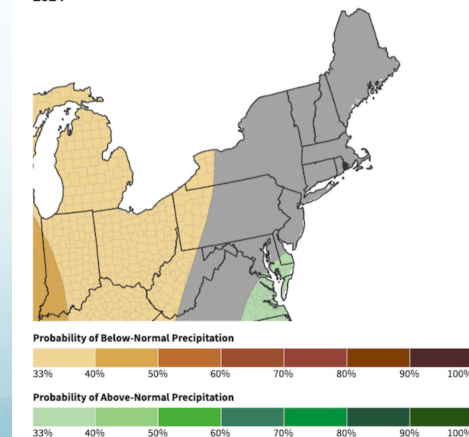
Outlooks and Potential Impacts for the Northeast

- The National Weather Service Climate Prediction Center's (CPC's) 8-14 day outlooks suggest near-normal precipitation and temperatures for most of the region. Any additional precipitation before ground freeze would be helpful.
- With ground freeze and snow cover pending, groundwater recharge should still be monitored.
- Agricultural, hydrological, ecological and fire conditions for the spring will be influenced by the extent of the drought recovery this winter.

Figure 6. 8-14 Day Precipitation and Temperature Outlooks for December 19-25

Key Takeaway: Over the next 8-14 days, near-normal precipitation is favored for most of the region. Only western New York is expected to see slightly below normal precipitation. Temperature wise, near-normal conditions are favored for most of the region. Slightly above normal temperatures are expected for the northernmost portions of New York, Vermont, New Hampshire and Maine. Any rain or snow melt under slightly above-normal temperatures should allow for additional improvement to groundwater levels before winter freeze.

8-14 Day Precipitation Outlook for December 19-25, 2024



With that in mind...

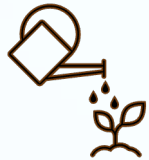
Key Points



October temperatures were **slightly warmer** than normal



October precipitation was **below to near** normal



Drought conditions **intensified**



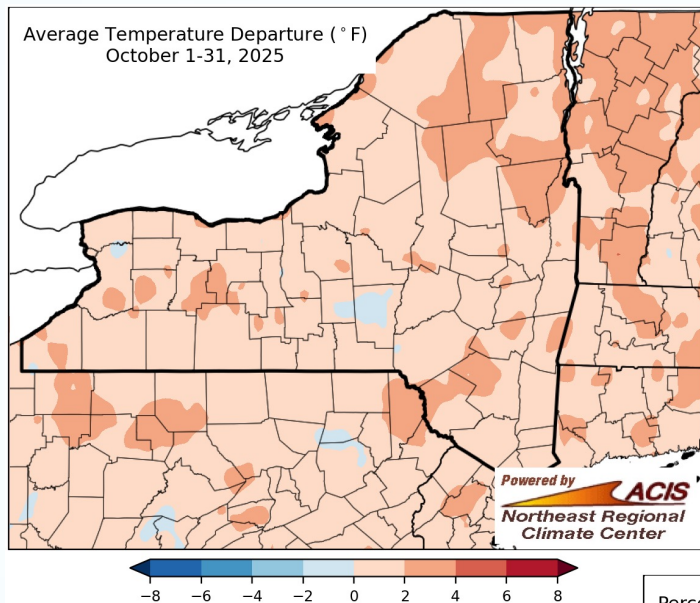
Impacts from the dry weather included **lower-than-normal** streamflow and groundwater levels



November is expected to be **warmer and wetter** than normal



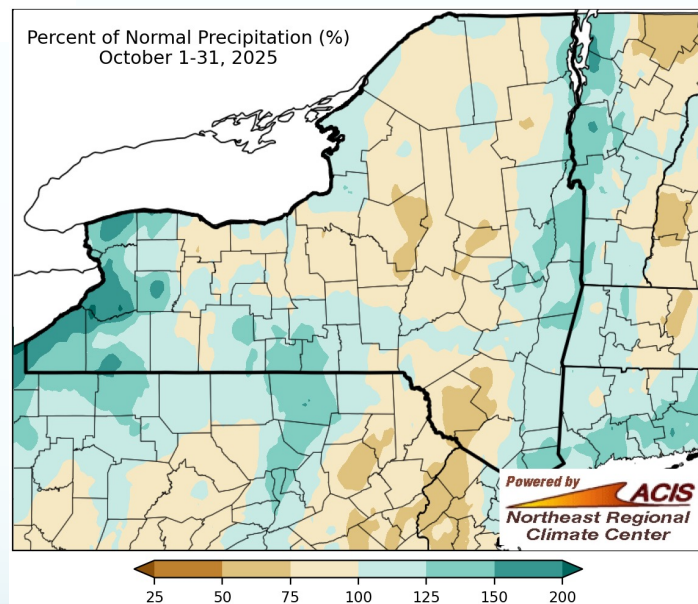
La Niña conditions favor **more snow** this winter



Current Conditions

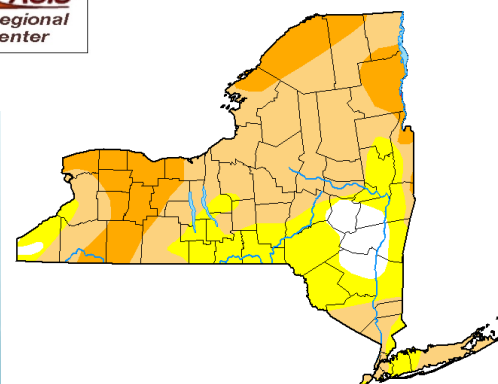
Other options might include...

- Snowfall or snow depth
- Number of days with an inch of precipitation or snow on the ground
- Heating, cooling, or growing degree days



U.S. Drought Monitor
New York

October 28, 2025
(Released Thursday, Oct. 30, 2025)
Valid 8 a.m. EDT



Intensity:

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

Author:
Richard Tinker
CPC/NOAA/NWS/NCEP



droughtmonitor.unl.edu



Current Conditions/Impacts

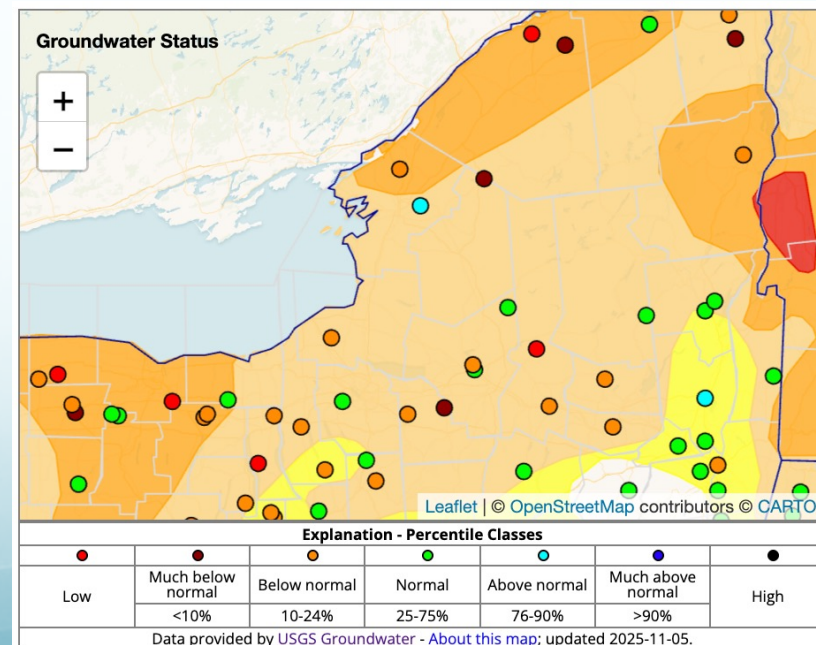
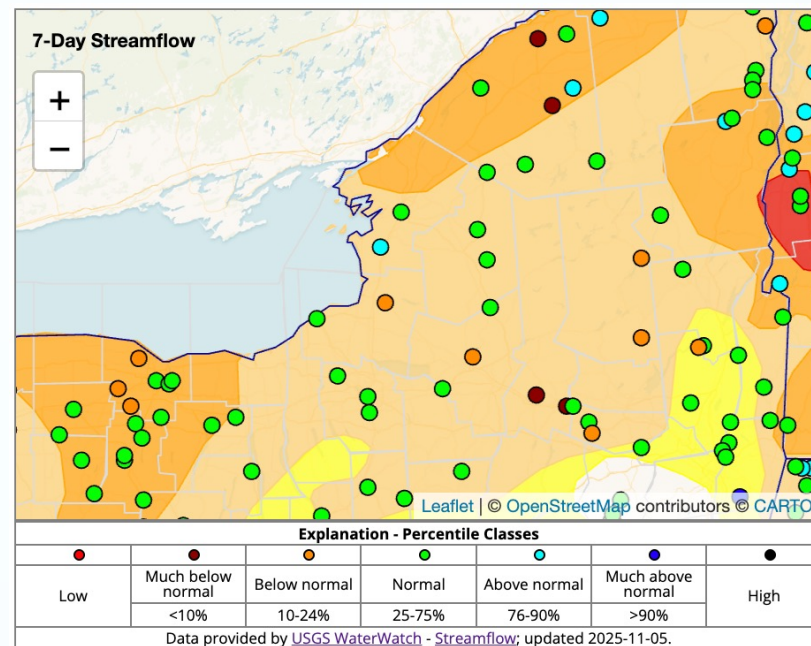


Credit: CMOR/ACKimball

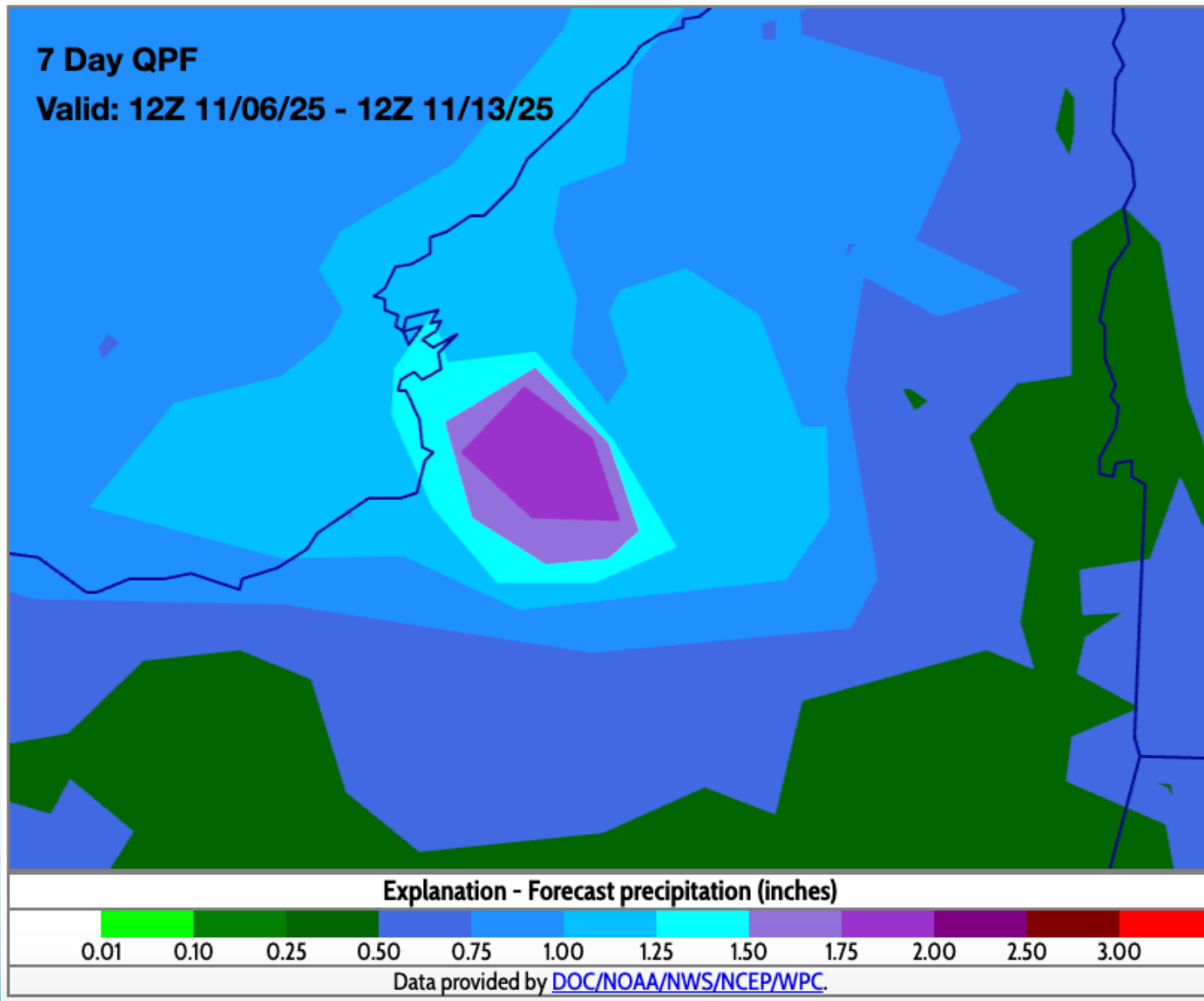
Salmon River Reservoir at Redfield in late September

Other options might include...

- Soil moisture or temperature
- Lake temperature or ice cover
- Snow water equivalent data



Looking Ahead...Near-Term



Looking Ahead...Near-Term

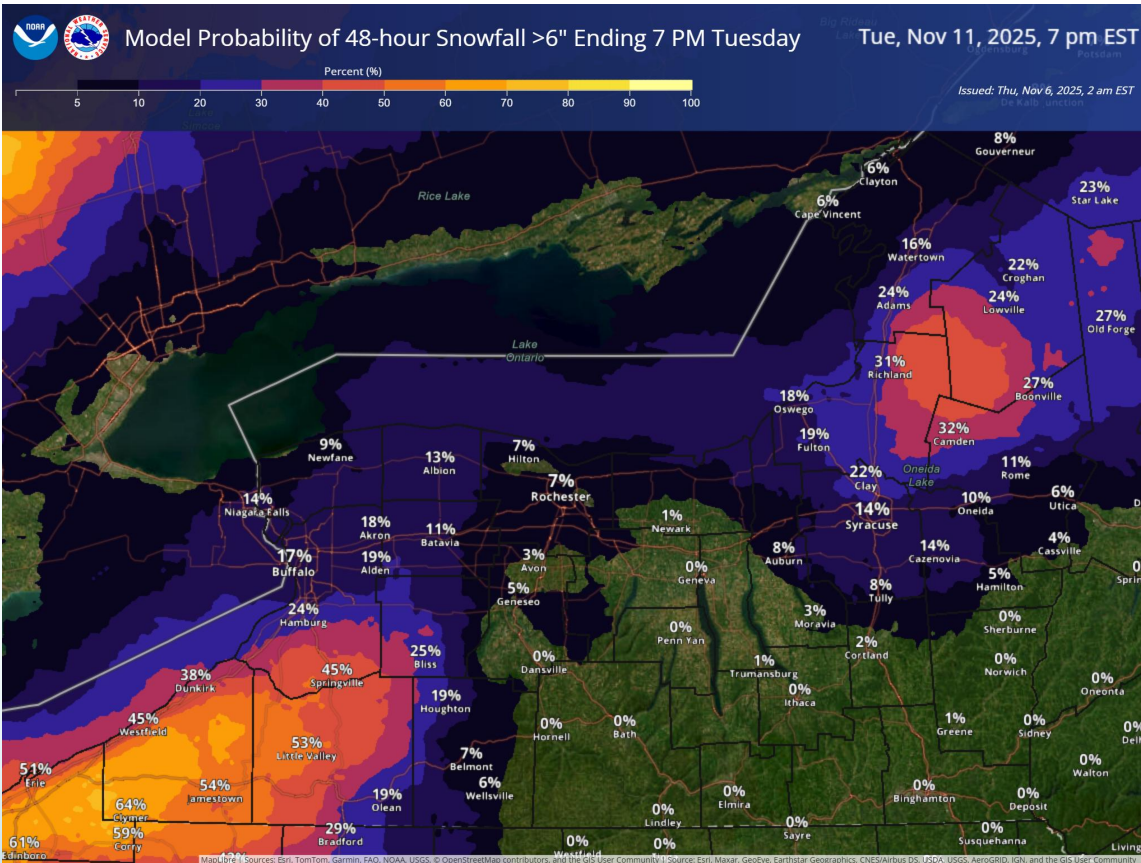


Accumulating Lake Effect Snow Possible

Early next week

November 6, 2025

3:21 AM



OVERVIEW

- Much colder air will surge across the eastern Great Lakes early next week. This will set the stage for potential accumulating lake effect snow off Lakes Erie and Ontario
- Following a day of widespread rain showers Sunday, precipitation may begin switching over to lake enhanced snow as early as Sunday evening

HAZARDS & IMPACTS

- Accumulating lake effect snow and reduced visibilities may impact travel next week
- Gusty winds may result in blowing snow

FORECAST CHALLENGES

- There is large uncertainty in the timing and placement of where potential lake effect snow bands develop and how persistent/heavy they could become
- Significant lake effect snow accumulations are possible, though confidence remains rather low at this time



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

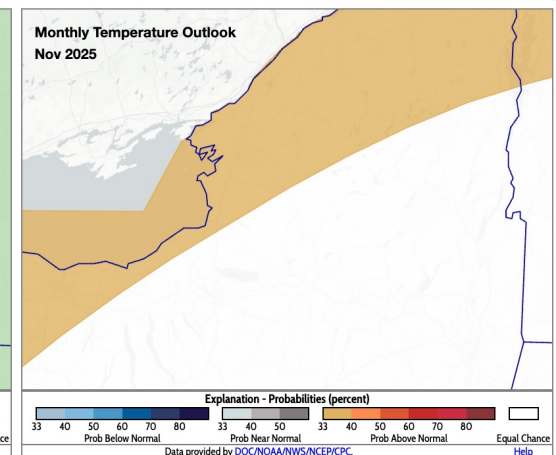
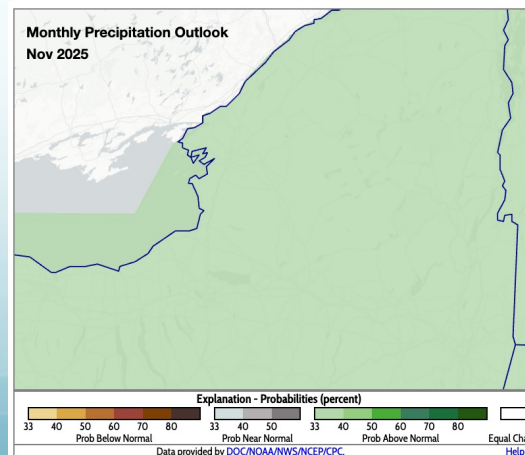
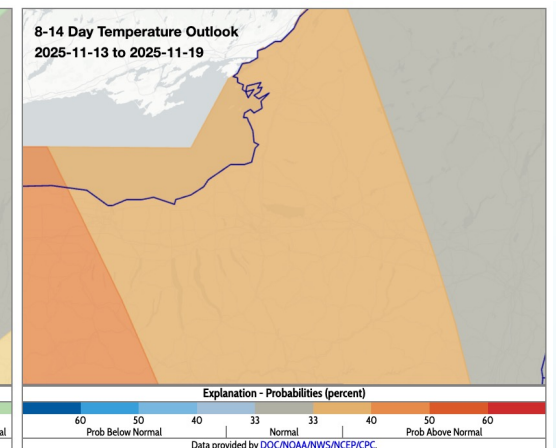
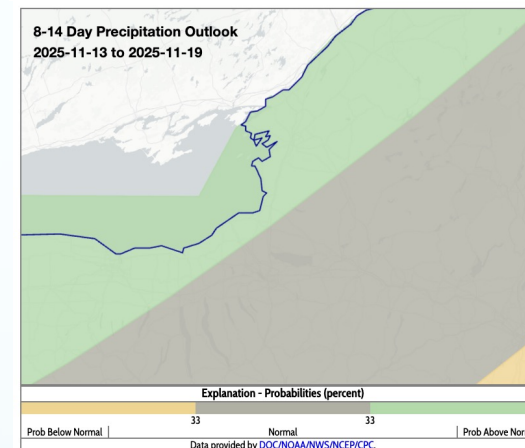
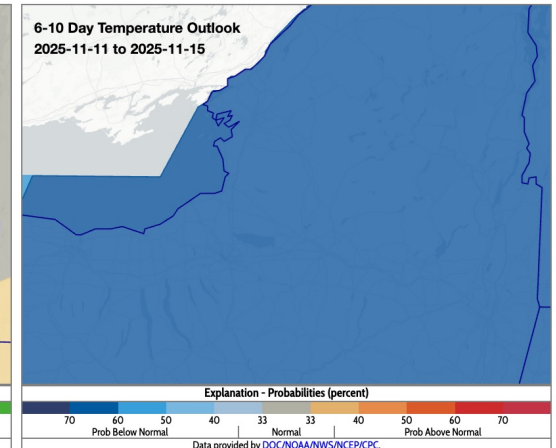
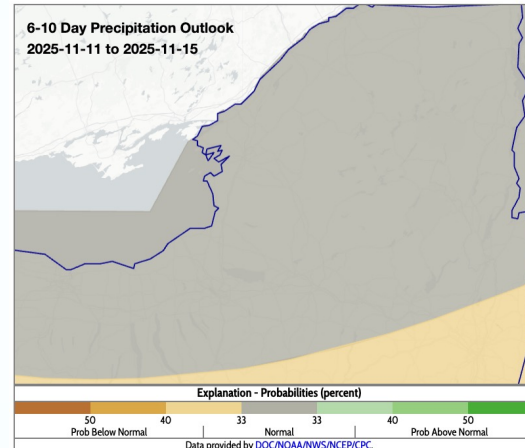
**National Weather Service
Buffalo, NY**



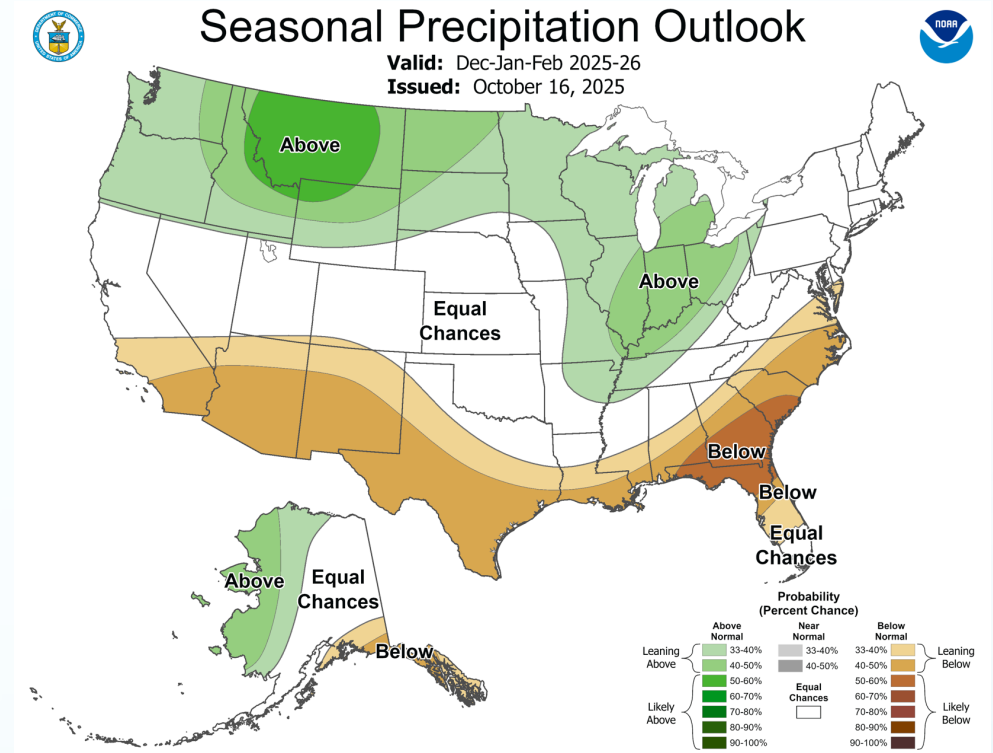
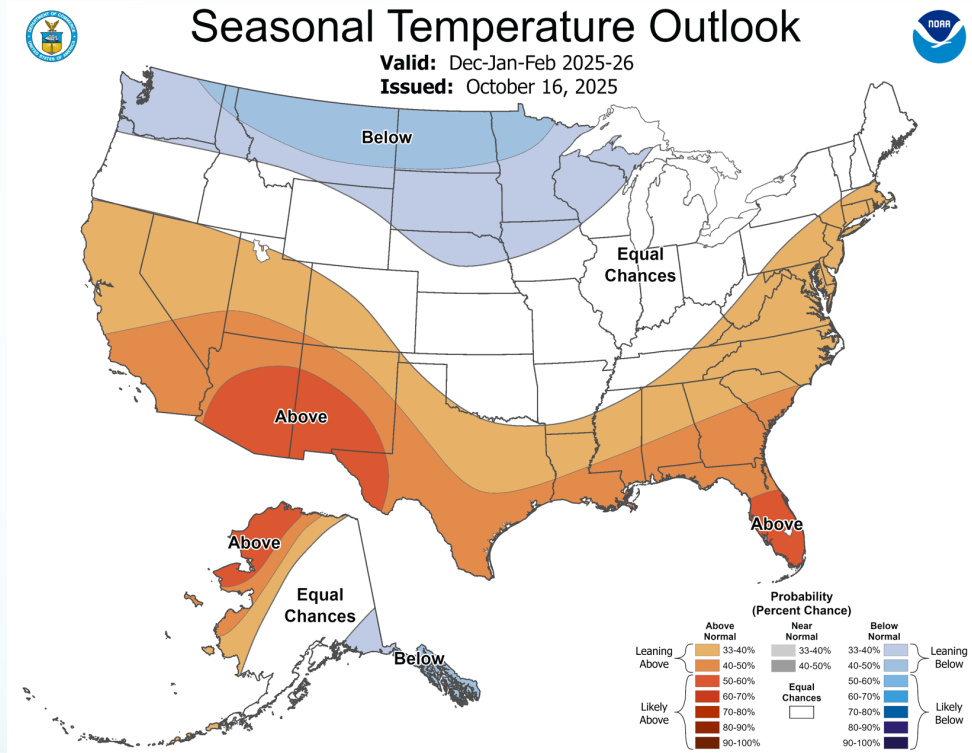
Looking Ahead...Near-Term

Other options might include...

- Weather hazards like heavy snow or high winds
- Severe weather risk
- Wildfire risk



Looking Ahead...Winter



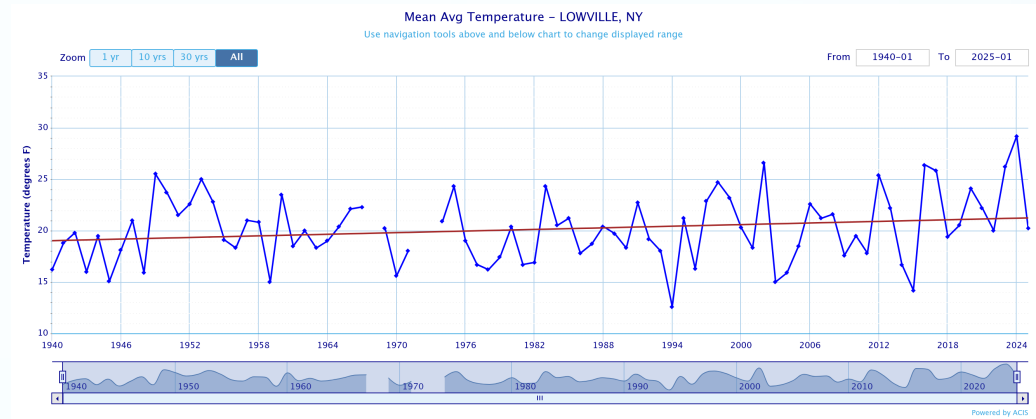
Equal chances = no strong signals to sway forecasts one way or the other

But...

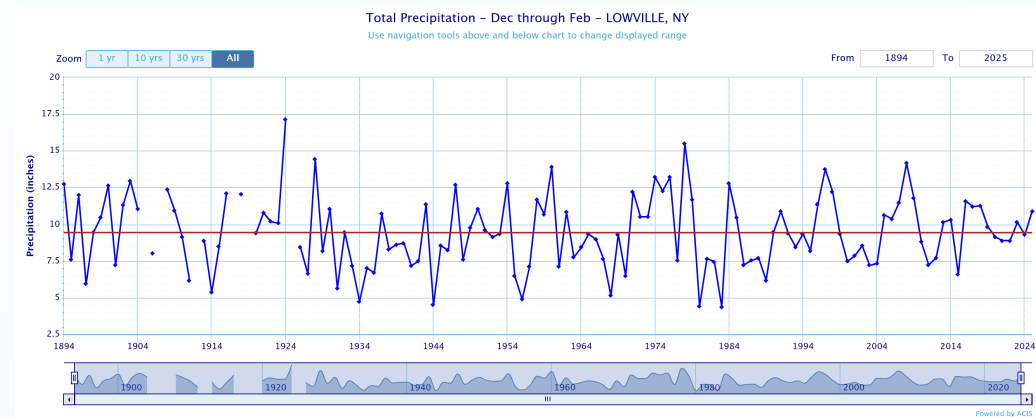


Looking Ahead...Past Trends

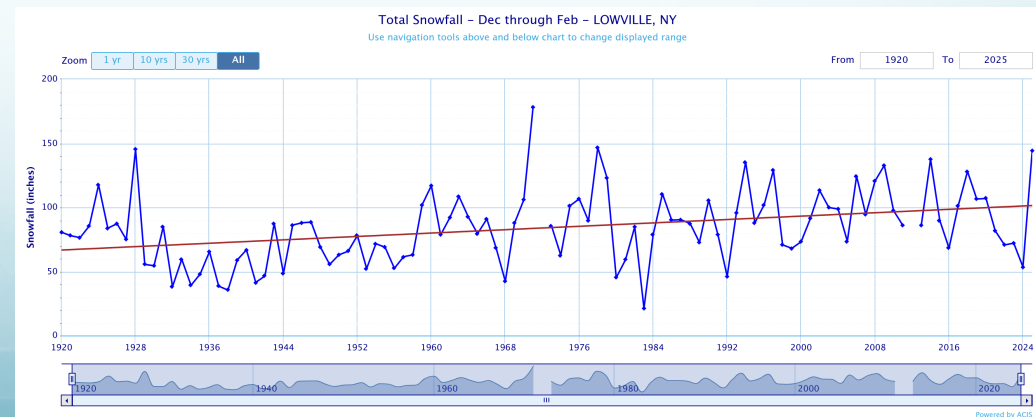
Winter temperatures...
warming



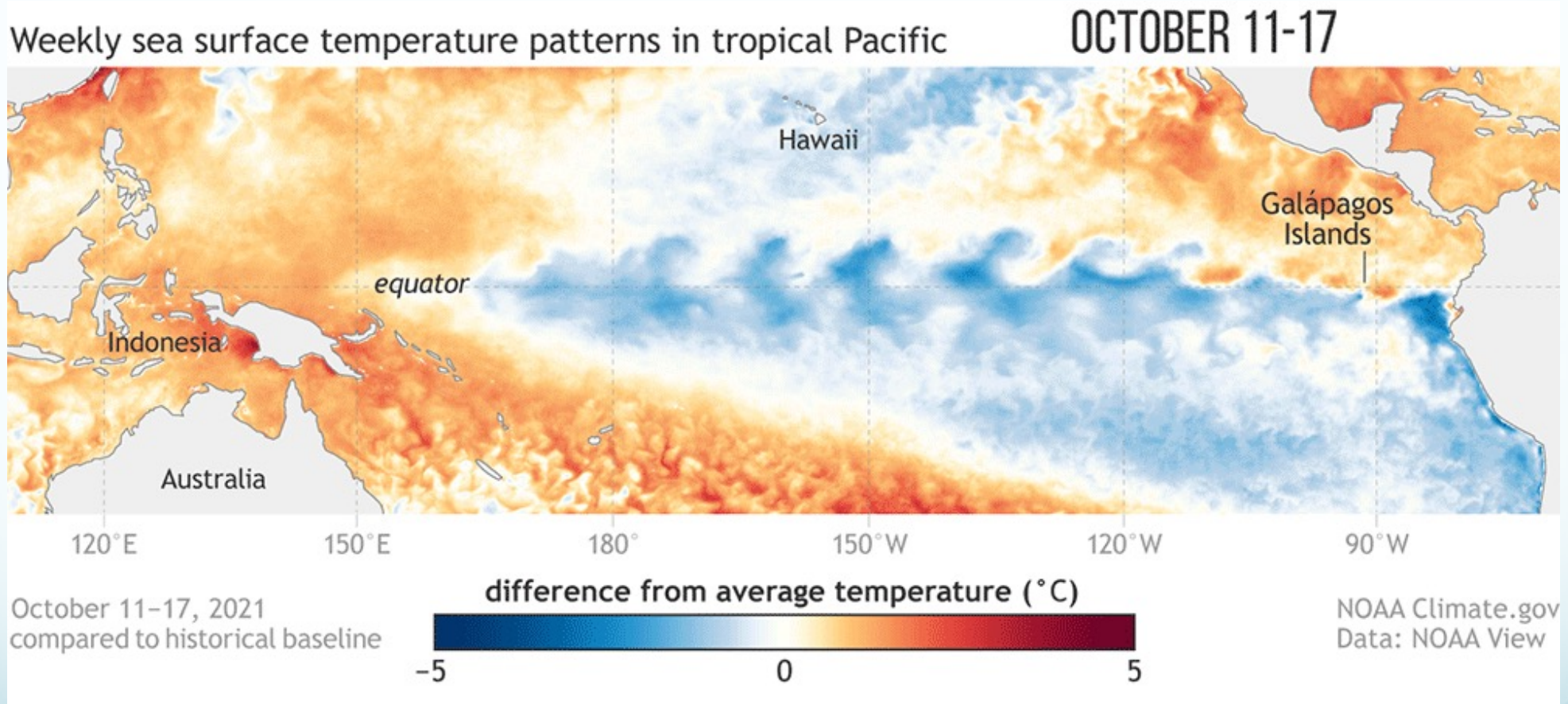
Winter precipitation...
steady or increasing



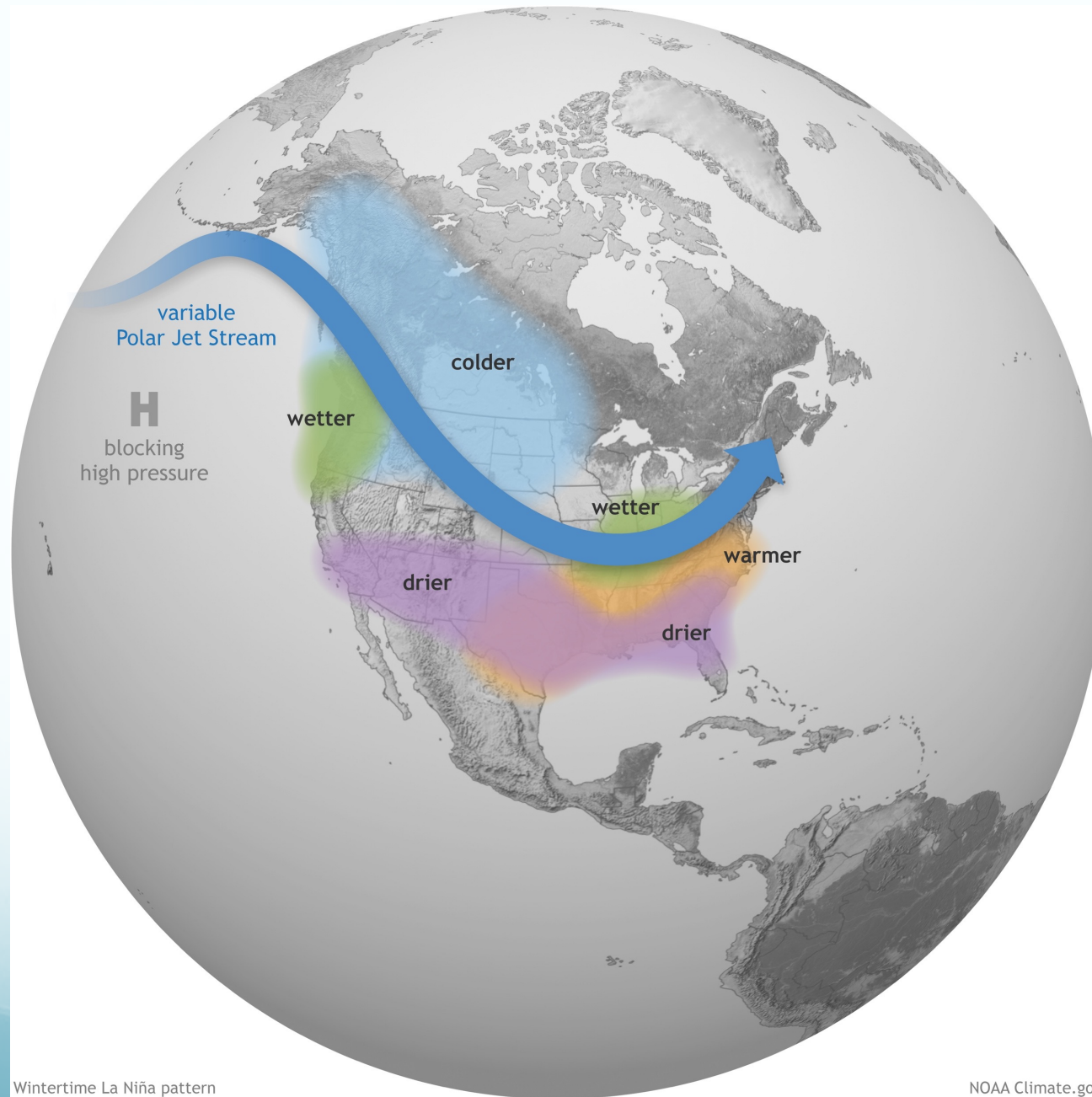
Winter snowfall...
increasing



Looking Ahead...La Niña



Looking Ahead...La Niña

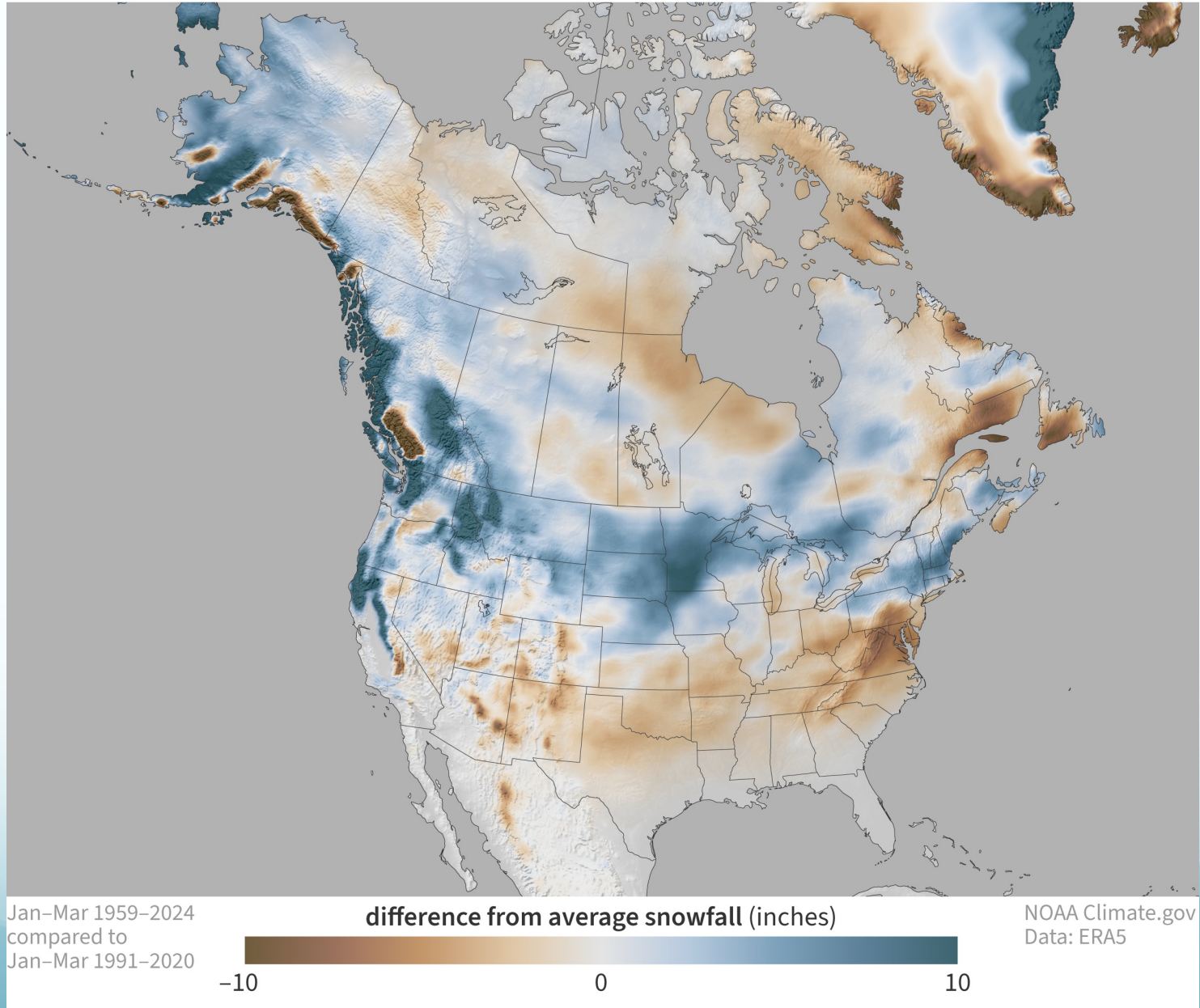


Wintertime La Niña pattern

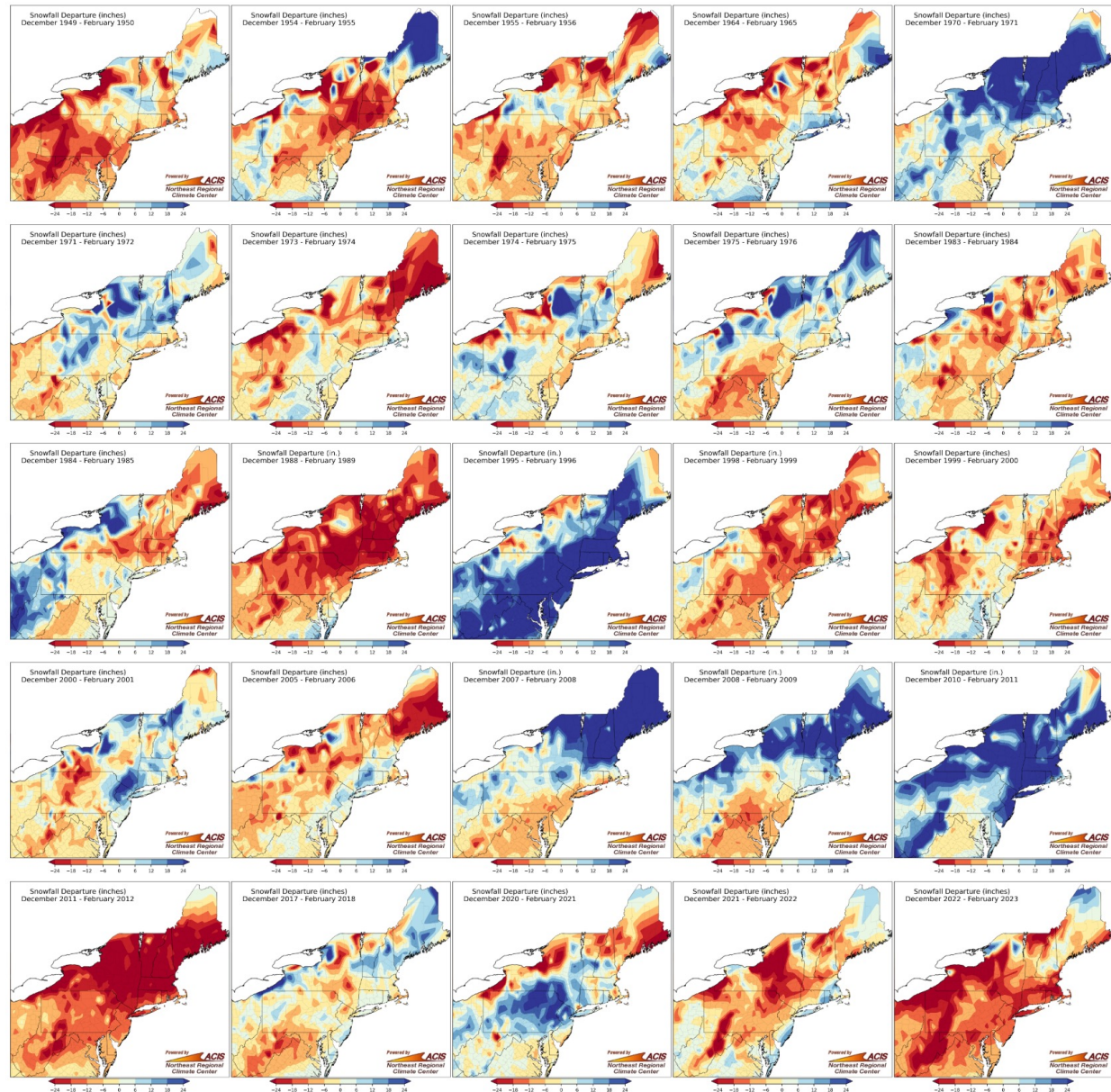
NOAA Climate.gov

Looking Ahead...La Niña

Snowfall during weak La Niña winters (Jan-Mar)



Looking Ahead...La Niña

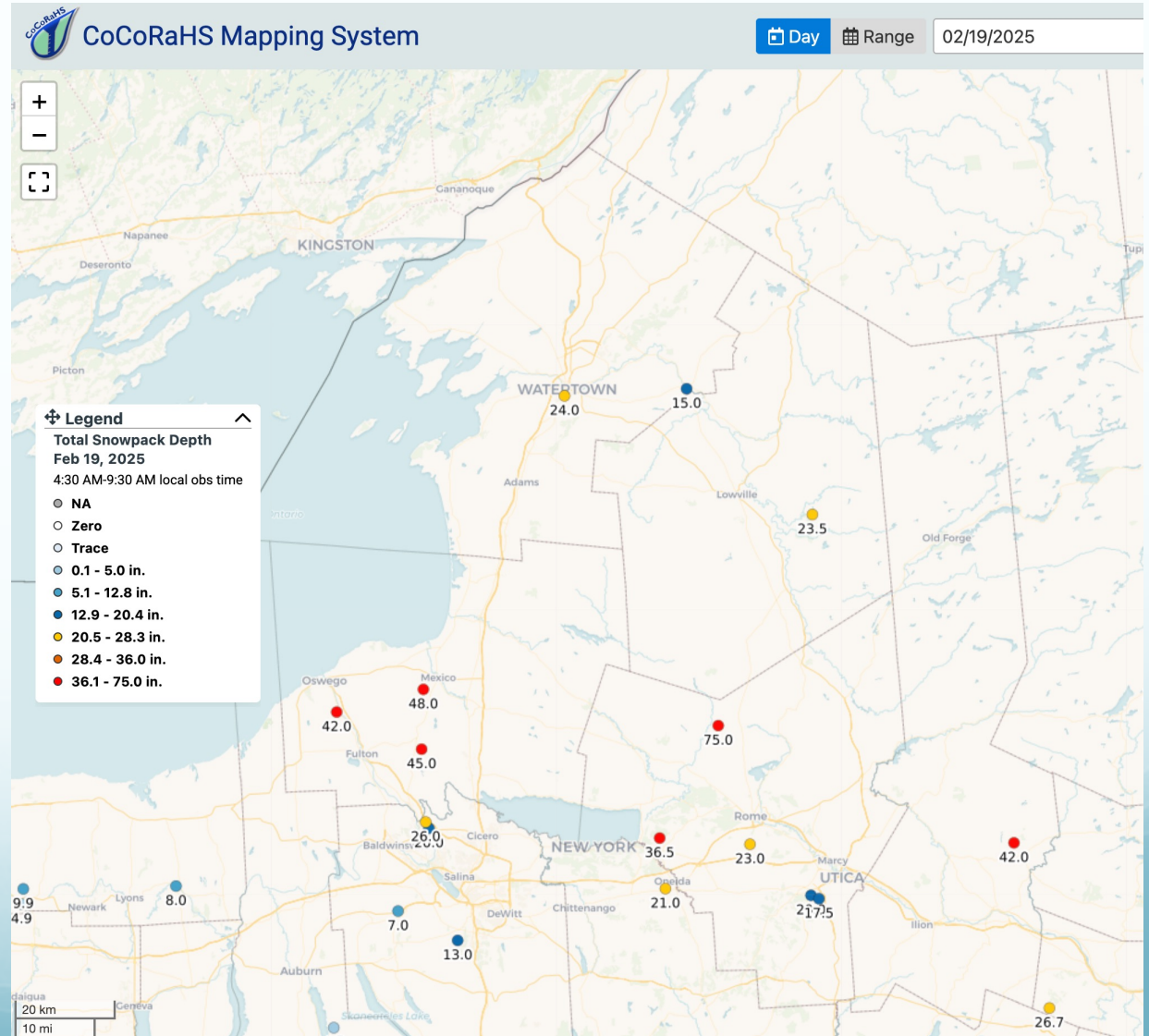


More information here...
<https://lanina.nrcc.cornell.edu/>

CoCoRaHS

Want to be a citizen scientist and help improve weather observations in the Tug Hill?

<https://www.cocorahs.org/>



Up Next

Questions to think about during lunch:

- What weather or climate resources do you currently use?
- Could these resources be enhanced in some way to make them more useful?
- What data or information do you need that you can't find?
- What format would be useful?

More information:

- Email - nrcc@cornell.edu
- Website - www.nrcc.cornell.edu
- Webinar on La Niña/Winter Outlooks –
 - Thursday, November 20 at 9:30am EST -
https://cornell.zoom.us/webinar/register/WN_MnxVOYIpRIGIWnk99ypxew#/registration

