



S2S Precipitation Forecasting – Updates

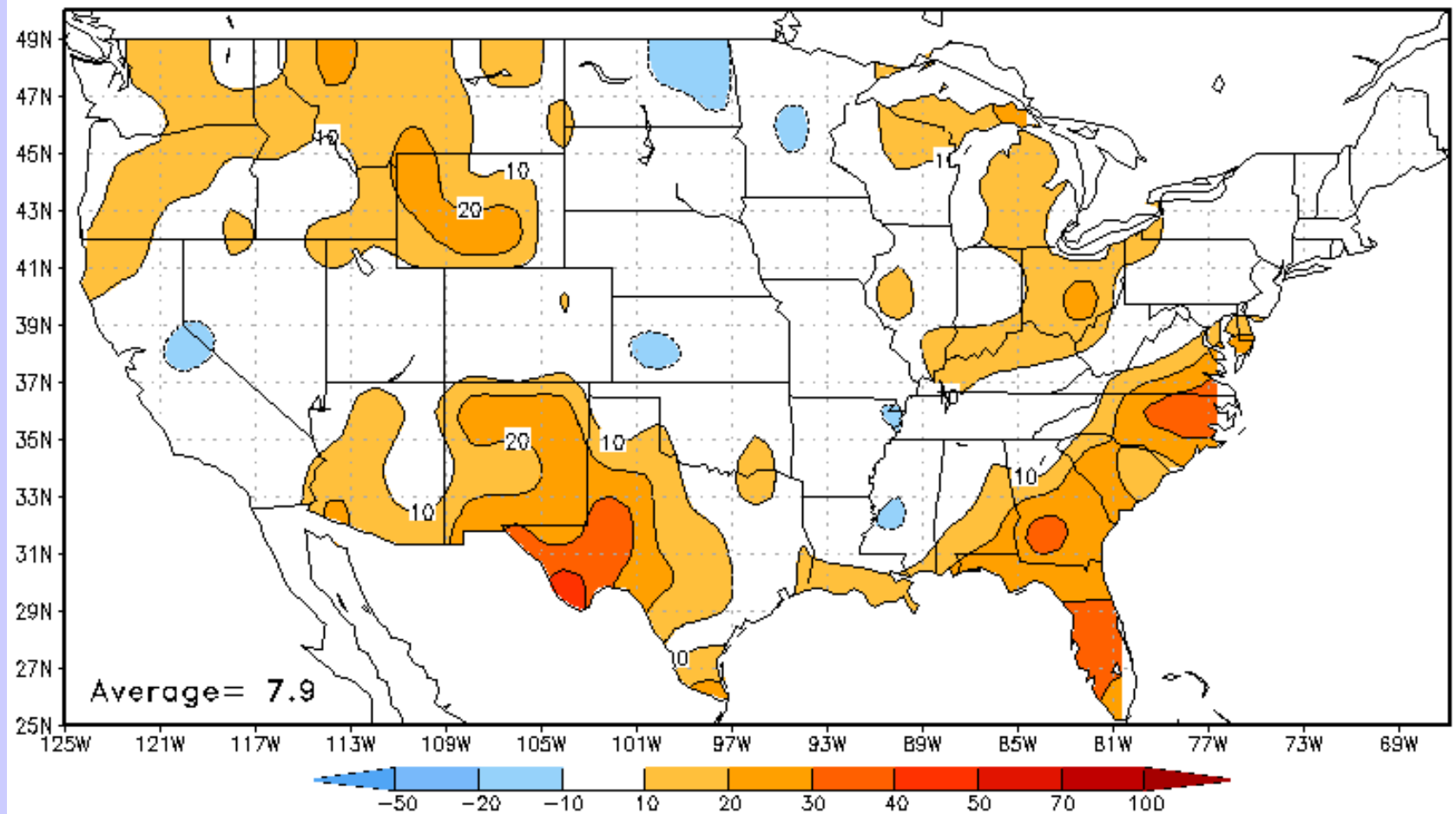
Sub-Seasonal to Seasonal (S2S) Precipitation Forecasting

- Operational weather models – typically 2 weeks out (higher skill in first week)
- Sub-seasonal – 2 weeks to about 60 days
- Seasonal – up to 12 months



NOAA NWS Climate Prediction Center Skill Scores

Seasonal (Lead 0.5 Months) Precipitation Heidke Skill Score
DJF Manual Forecasts From 1995 to 2018



Lead Time Very Important for Water Management

- Public health & safety decisions
- Balancing risk/cost trade-offs
- Increasing water management efficiency
- Operating within legal & regulatory frameworks
- Reducing impacts of extreme events
- Responding to increased competition for resources
- Operating reservoirs and other infrastructure

Recent Activities

- WSWC/CDWR S2S Workshop May 2018
- Comment opportunity, outline of NOAA report to Congress required pursuant to Weather Research Act of 2017
- NWS S2S user needs survey



S2S Report

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NOAA Subseasonal and Seasonal Forecasting Innovation: Plans for the Twenty-First Century A Report to be submitted to Congress, October 2018

NOAA is soliciting comments on the annotated outline of NOAA's draft S2S report.

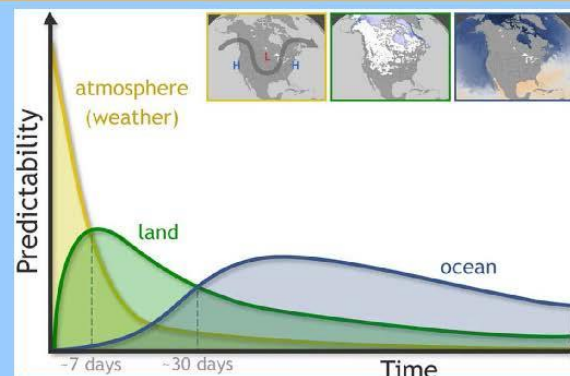
The report will serve as a guidepost for NOAA planning and execution, as well as to inform the public and NOAA's stakeholders on its efforts on subseasonal and seasonal (S2S) forecasting. It will trace the continuum of effort for S2S, from products and services to the innovations needed to enable and improve them. The report is being organized around two main goals: (i) improving the skill of the S2S forecasts, and (ii) enhancing the value of S2S products for stakeholders.

In providing the annotated outline of this report, the NWS requests and will consider all substantive comments and information provided during the public comment period as we finalize this report. Feedback is sought on the scope of the outline and potential utility of this report, from relevant Federal, regional, State, Tribal, and local government agencies, research institutions, and the private sector.



The annotated outline available for comment can be found [here](#).

Please email any comments or feedback on the annotated outline by **August 10, 2018** directly to NOAA at S2SReport.Reply@noaa.gov.



An illustration of potential sources of predictive skill (vertical axis), from the atmospheric state (yellow), the land-surface state (green), and the ocean state (blue) over various forecast lead times (horizontal axis). This is figure 3.2 in the report "NOAA Subseasonal and Seasonal Forecasting Innovation: Plans for the Twenty-First Century". Credit: NOAA Climate.gov graphic, adapted from original by Paul Dirmeyer.



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Research & Development Activities

Seminar Series

Please let us know your subseasonal and seasonal (S2S) needs through the form below.

NWS is collecting needs for subseasonal to seasonal services in compliance with the Weather Research and Forecasting Innovation Act of 2017, also known as Public Law 115 - 25, and in particular, Title II, Sec. 201, which states that NWS shall "...collect and utilize information in order to make usable, reliable, and timely foundational forecasts of subseasonal and seasonal temperature and precipitation..."

PL 115-24 defines subseasonal as two weeks to three months; seasonal as three months to two years.

(<https://www.congress.gov/bill/115th-congress/house-bill/353>)

PURPOSE:

NWS will be looking for common themes that are in line with the approved strategic areas (at right) for the climate program.

Once a theme has been identified, we will move the need through the NWS approval process --> requirement.

Requirements are entered into the queue within NWS for identification of potential avenues to translate them into services.

Documenting User Needs Form:

Your Name *

Affiliation *

Email *

Request (Need) *

Where does the need fit within the NWS Approved Strategic Area? (Select all that apply.) *

☐ Improve basic NWS forecasting capabilities from week 2 to seasonal

☐ Provide extended lead-time information and Decision Support Services for weather and climate extremes for planning and preparedness, including hurricanes, tornadoes, droughts, floods, extreme heat, winter storms

☐ Improve NWS capabilities for decision support in Arctic including Arctic Sea Ice prediction/outlooks

☐ Improve NWS capabilities to provide climate information in support of decision making in coastal regions

☐ Establish a learning path for making climate-informed decisions in NOAA field operations and users applications of NOAA climate products, forecasts, and services

☐ Improve NWS capabilities for climate timescale decision support services for water resources

☐ Other need directly supporting HR 353 (PL 115-25) TITLE II—SUBSEASONAL AND SEASONAL FORECASTING INNOVATION (<https://www.congress.gov/115/plaws/publ25/PLAW-115publ25.pdf>)

"Assessing the past, predicting the future and delivering a local perspective on global climate today."

OUR VISION
AN ENGAGED, RESPONSIVE NWS THAT DELIVERS STATE-OF-THE-ART, TIMELY, AND RELIABLE CLIMATE INFORMATION AND DECISION SUPPORT SERVICES TO HELP THE NATION ADDRESS ENVIRONMENTAL IMPACTS.

OUR MISSION
TO ENSURE NWS HAS THE CAPACITY TO DEVELOP AND DELIVER RELIABLE CLIMATE SERVICES INTEGRATED WITH WEATHER AND WATER INFORMATION THROUGH USER ENGAGEMENT, POLICY DEVELOPMENT, DATA STEWARDSHIP, INCORPORATION OF RESEARCH INTO OPERATIONS, TRAINING, EDUCATION, AND OUTREACH IN COLLABORATION WITH PARTNERS.



NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

Strategic Areas



1. Improve basic NWS forecasting capabilities from week 2 to seasonal
2. Provide extended lead-time information and Decision Support Services for weather and climate extremes for planning and preparedness, including hurricanes, tornadoes, droughts, floods, extreme heat, winter storms
3. Improve NWS capabilities for decision support in Arctic including Arctic Sea Ice prediction/outlooks
4. Improve NWS capabilities to provide climate information in support of decision making in coastal regions
5. Establish a learning path for making climate-informed decisions in NOAA field operations and users applications of NOAA climate products, forecasts, and services
6. Improve NWS capabilities for climate timescale decision support services for water resources
7. Other need directly supporting HR 353 (PL 115-25) TITLE II—SUBSEASONAL AND SEASONAL FORECASTING INNOVATION (<https://www.congress.gov/115/plaws/publ25/PLAW-115publ25.pdf>)



Subseasonal-to-Seasonal (S2S) Precipitation Coalition

The Subseasonal-to-Seasonal (S2S) Precipitation Coalition is a broad-based, multi-state coalition of entities committed to advancing federal support for enhanced precipitation prediction in the Western United States.

After enduring several years of drought, Western states have experienced historic precipitation in recent months. In both extremes, improved forecasting will allow communities throughout the West to better prepare for wet and dry seasons alike.

Effective water management in the West is enhanced by sound, scientifically-based decisions made weeks to months ahead of time. While some of these key decisions hinge on expectations or predictions of precipitation, snow pack and general watershed conditions, precipitation forecasting beyond 5-7 days is highly uncertain.

The science community has identified a strategy for pursuing improvements to national precipitation forecasts from two weeks to several months in advance. The S2S Precipitation Coalition is informing policymakers of the importance of these water decisions and the need for forecast research and related science.

Subseasonal-to-Seasonal "S2S" timescales span from lead times of two weeks to several months for precipitation forecasting.

FOUNDING MEMBERS

Association of Metropolitan Water Agencies
Association of California Water Agencies
California Department of Water Resources
Colorado River District
Orange County Water District
Salt River Project
Sonoma County Water Agency
Scripps Institution of Oceanography, UC San Diego
Western States Water Council

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