NOAA

National Weather Service

NOAA Response to the Science Advisory Board's REPORT CONCERNING THE NOAA REPORT TO CONGRESS: SUBSEASONAL AND SEASONAL (S2S) FORECASTING INNOVATION: PLANS FOR THE TWENTY-FIRST CENTURY

November 15-16, 2023

Overview

- *SAB's Environmental Information Services Working Group (EISWG) presented the "Report Concerning the NOAA Report to Congress: Subseasonal and Seasonal Forecasting Innovation: Plans for the Twenty-first Century" to the SAB on August 11, 2022.*
- *The EISWG report was approved by the SAB at its August 30-31, 2022 meeting.*
- *The review report concluded that "the official report, in tandem with its supplement, is responsive to the Congressional tasking and sufficiently addresses the specific information requested."*
- *The EISWG report outlined 8 Summary Recommendations and 13 Specific Review Results Recommendations*
- *NOAA has provided a report in response to the EISWG recommendations summarized in this briefing*
    - *NOAA partially or fully concurs with all recommendations*

Response to summary recommendations

NOAA concurs with recommendations to publish the S2S supplement report in the public domain, and standardize definitions and terms related to S2S prediction.

- **NOAA will engage to annotate the reports and provide the context for and relationship between the two reports; Language in the supplemental document will be modified for public audiences.**
- **NOAA will publish online a list of standardized definitions of terms, consistent with Congressional language, also consistent with the definition of the term "climate" from WMO, professional organizations and stakeholders.**
- **NWS Climate Service Program will ensure usage of consistent and clear terminology throughout guidance and training documents, collaborations with NOAA line offices and external partners producing climate services.**

Response to summary recommendations

NOAA concurs with recommendations to highlight S2S as a true Earth System approach with increased cross-LO coordination and increasing US and international engagement through the ICAMS

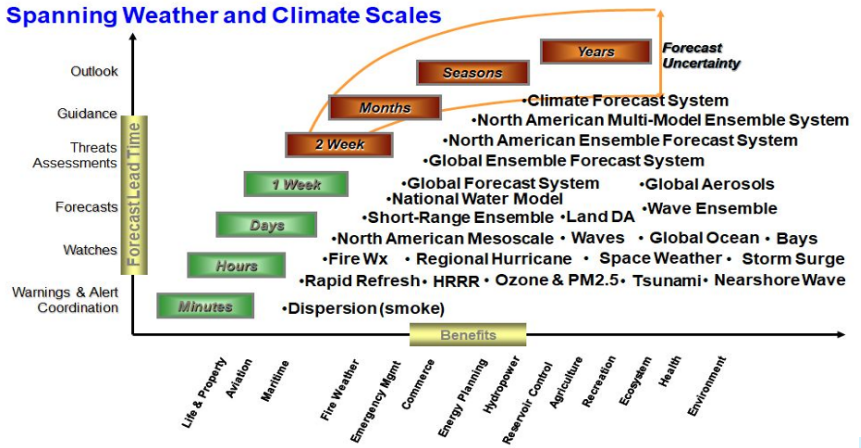
- **NOAA is improving alignment and planning of S2S activities as an Earth System effort across Line Offices (LOs) through NOAA's Earth Systems Integration Board (ESIB), and broadening Earth System modeling to include ecosystems (CEFI) and coastal components.**

- **NOAA will enhance coordination and prioritization of S2S activities through ICAMS and other interagency coordination bodies such as GEWEX and USGCRP (note expanded role of USGCRP and reduced scope of ICAMS for S2S coordination).**

Response to summary recommendations

NOAA partially concurs with recommendations to emphasize S2S in projects funded by EPIC, and concurs with the ***idea*** to adapt the NAS vision equating the broad use of S2S and weather predictions.

- **The current scope of EPIC is not extended to funding science research for environmental modeling. However, it is essential for programs across NOAA LOs to align S2S priorities for research and operations, and coordinate with and leverage EPIC to ensure researcher and developer access to the relevant tools, processes and support.**
- **Skill at predicting hazards, risk communication approach, and stakeholder demographic largely orthogonal across timescales. However, several goals to increase S2S services are outlined in the [FY23-FY27 Weather, Water and Climate Strategy].**



Response to current S2S products and services recommendations

NOAA largely concurs with recommendations to increase accessibility of S2S information, including listing with description, available products, tools and methods for verification, verification statistics, and impacts and value to stakeholders.

- **Transitioning CPC products' web presence to an expanded Internet clearinghouse will require additional planning and resources. NOAA sees added value toward streamlining products that enhance decision-making while identifying and reducing duplication of effort.**

- **NCEP (and UFS) is transitioning to verification tools based on the community Model Evaluation Tool (METplus) for all forecasts ranging from regional, short-range weather, to global S2S time scales.**

- **Developing comparative skill metrics comes with many challenges including requiring consistent attributes, knowledge of forecast methodologies, compatible/standard data formats.**

Response to current plans for improving S2S products and services recommendations

NOAA concurs with recommendations to develop more specific plans, priorities and roadmaps including goals that are SMART, and broadening stakeholder engagement as well as interagency coordination to include SBES to create more impactful/actionable products and services.

- **NOAA has initiated the Seasonal Forecast System Development Plan with the goal of identifying requirements and mapping back to research and development priorities through the UFS framework. This includes increasing cross LO engagement to understand broader stakeholder needs.**

- **Both OAR/WPO and NWS/OSTI have established SBES programs to engage stakeholders and better assess and inform S2S product and service needs. NOS has also been actively engaged with stakeholders related to outlooks for coastal flooding and inundation.**

- **Better coordination including SBES with interagency stakeholders is needed through ICAMS for delivery of impactful S2S information.**

Response to requirements for improving S2S products and services recommendations

NOAA largely concurs with recommendations to periodically review S2S long-term priorities, supporting research, improving collaborations, and prioritizing S2S pilot projects.

- **Ties into development of SMART goals, and could follow the HFIP model. Opportunities exist to leverage SFS development in S2S pilot projects including those supported by CEFI, perhaps coordinated through NOAA testbeds (CTB).**
- **Focus on applied research at early readiness levels, using NOAA models (UFS, GFDL Suite), and leverage basic research supported through other programs such as NOPP.**
- **Better alignment between NWS/OAR and IOOS/GOOS will help to address critical gaps in the ocean observing system that will benefit S2S prediction through coupled reanalyses and improved initial states.**

Summary and Addition Questions

NOAA thanks the EISWG and SAB for their time and effort responding to the NOAA Report to Congress, and welcomes the recommendations raised in the EISWG review.

NOAA partially or fully concurred with all recommendations. In some instances, additional resources are needed to adequately address the recommendations.

NOAA looks forward to continued engagement with the SAB regarding future S2S planning and reporting.