**One Pager: Forecasting Optimization for Robust Earth Climate Analysis and Subseasonal-to-Seasonal Tracking (FORECAST) Act of 2025**

*Endorsed by Woodwell Climate and Research Center and the University Corporation for Atmospheric Research.*

In 2024, National Centers for Environmental Information reported twenty seven weather related disaster events that had each caused over $1 billion in damage throughout the United States.[1] More reliable, longer-term weather forecasts are becoming critical to public safety, emergency planning, and informed infrastructure investments.

In pursuit of a 21st-century weather enterprise that brings predictability to disaster planning, the National Oceanic and Atmospheric Administration (NOAA) has highlighted the importance of robust subseasonal-to-seasonal (S2S) forecasting capabilities. S2S forecasting refers to timescales of two weeks to three months and three months to two years, respectively. Since the passage of the 2017 Weather and Forecasting Innovation Act, NOAA has taken steps to leverage its existing technology and services towards research and development of competitive S2S forecast models, particularly through the Earth Prediction Innovation Center (EPIC). However, NOAA has identified the need for improvements in research to operations capacity, high performance computing capabilities, advanced data assimilation methods, emerging technologies, and workforce talent.[2]

The *Forecasting Optimization for Robust Earth Climate Analysis and Subseasonal-to-Seasonal Tracking (FORECAST) Act of 2024* aims to fill these gaps through federal resources and the creation of a new workforce development program within NOAA. The legislation provides funding to support best-in-class modeling, forecasting, and weather workforce development.

Specifically, the *FORECAST Act*:

- Directs NOAA to
    - Support research and demonstration of data, models, and forecast systems that improve subseasonal-to-seasonal forecast predictability.
    - Improve data management strategies and leverage existing research and models from weather and Earth system enterprises to improve subseasonal-to-seasonal forecast predictability.
    - Pursue collaboration with universities and other agencies to accelerate the operationalization of emerging technologies in the research community.
    - Provide information on how subseasonal-to-seasonal temperature and precipitation forecasts may relate to natural disasters, snowpack, sea ice, and permafrost.
- Appropriates $28.5 million for Fiscal Years 2026 and 2027 in pursuit of these activities and such sums as necessary to aid with the responsibilities of computing, innovation,

[1] https://www.ncei.noaa.gov/access/billions/

[2] NOAA Report to Congress SUBSEASONAL AND SEASONAL FORECASTING INNOVATION: PLANS FOR THE TWENTY-FIRST CENTURY Developed pursuant to: Section 201 of the Weather Research and Forecasting Innovation Act of 2017, (Public Law 115-25)

management, and engagement activities within the Earth Prediction Innovation Center and at institutions of higher education.

- Establishes the Weather and Earth System Modeling and Data Assimilation Workforce Innovation Program, which will:
    - Identify gaps in the data assimilation workforce and the weather and Earth system modeling workforce.
    - Nurture the next generation of researchers, software engineers, and other relevant professionals to skillfully develop and operate weather and Earth system technologies that use cutting edge computing architectures, AI, machine learning, unmanned systems and emerging data assimilation and observing systems.
    - Enable NOAA to establish agreements and awards with higher education institutions and nonprofit entities to better train and develop weather and Earth system modeling and data assimilation workforce participants.
    - Provides direct hiring authority to NOAA to allow provide permanent employment offers to specific NOAA fellowship participants.

This legislation will provide NOAA with the direction and resources required to fully realize a subseasonal-to-seasonal forecasting architecture that is cutting-edge, reliable, and maintainable, ensures the short- and long-term safety of communities in the face of extreme weather threats.