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Weather Act Reauthorization Act of 2025 (H.R. 3816)

Hazardous weather and climate events kill hundreds of people and cause billions of dollars of property damage in the United States each year. In 2024, for instance, the United States experienced 27 weather and climate disasters each exceeding a billion dollars of total costs (known as *billion-dollar disasters*) and summing to an estimated cumulative cost of \$182.7 billion for the year. These disaster costs result from the intersection of weather and climate-related hazards with the vulnerability of populations and infrastructure, such as crops and buildings.

The National Oceanic and Atmospheric Administration (NOAA) is the primary civilian agency with responsibility for weather forecasting. The Weather Research and Forecasting Innovation Reauthorization Act of 2025 (Weather Act Reauthorization Act of 2025; H.R. 3816) in the 119th Congress aims to improve NOAA's weather research, support improvements in weather forecasting and prediction, and expand commercial opportunities for the provision of weather data. This product describes H.R. 3816 and selected related considerations for Congress.

Congress has long shown interest in improving NOAA's forecasts of weather and climate events. In 2017, Congress passed the Weather Research and Forecasting Innovation Act (Weather Act; P.L. 115-25). The Weather Act included five titles addressing (1) the transition of NOAA research and development (R&D) to operations, (2) improvements to sub-seasonal and seasonal forecasts, (3) the future of weather satellites and the agency's use of commercial data, (4) coordination and communication of weather data and observations, and (5) tsunami program activities. (For more information about the Weather Act, see CRS Report R44838, *The Weather Research and Forecasting Innovation Act of 2017: Congressional Direction to NOAA in P.L. 115-25*, and CRS Report R44834, *The U.S. Tsunami Program Reauthorization in P.L. 115-25: Section-by-Section Comparison to P.L. 109-479, Title VIII*.) Congress has amended the Weather Act several times, including via P.L. 115-423, P.L. 116-259, P.L. 117-229, and P.L. 117-316. Congress also has directed NOAA to advance weather forecasting via annual and supplemental appropriations (e.g., explanatory statement accompanying P.L. 118-42).

Weather Act Reauthorization Act of 2025

On June 6, 2025, some Members in the House introduced H.R. 3816, which would amend the Weather Act and would authorize or direct NOAA to take on new responsibilities. Some provisions would codify current NOAA activities; others would authorize NOAA to conduct new activities.

H.R. 3816 reflects titles and amended provisions of similar bills introduced in the 118th and 119th Congresses. On April 29, 2024, the House passed a Weather Act Reauthorization

Act of 2023 (H.R. 6093 in the 118th Congress). A version introduced in the Senate (S. 5601 in the 118th Congress) included six additional titles compared with H.R. 6093; the Senate did not act on the legislation. In addition, some of the provisions in H.R. 3816 are similar or identical to bills introduced in the 119th Congress, including H.R. 2250/S. 1626, H.R. 644/S. 93, H.R. 3704/S. 325, H.R. 2646, and H.R. 2296. Summaries of H.R. 3816's titles are below.

Title I: Reauthorization of the Weather Act would amend provisions in P.L. 115-25 related to authorization of appropriations, tornado and hurricane forecasting, observing and satellite planning and testing, computing resources, weather modeling, the Interagency Council for Advancing Meteorological Services, and required reports, among other provisions. It also would amend the Weather Act to require NOAA to maintain a program to improve precipitation forecasting from various weather systems, such as atmospheric rivers. In addition to weather-related provisions, H.R. 3816 would amend the Tsunami Warning, Education, and Research Act of 2017 (Title V of P.L. 115-25) and the Integrated Coastal and Ocean Observation System Act of 2009 (P.L. 111-11).

Title II: Enhancing Federal Weather Forecasting and Innovation would task NOAA with new responsibilities and authorities regarding weather radars; atmospheric river, coastal flooding, storm surge, and coastal marine fog forecast improvements; aviation-related observations and forecasting; the transition of research to demonstration and operations; the Advanced Weather Interactive Processing System (to process, display, and communicate data); reanalysis and reforecasting; the National Weather Service's (NWS's) workforce; the application of artificial intelligence (AI) for weather forecasting; and an assessment of the composition of Earth's atmosphere. While Section 211 of H.R. 3816 would direct NOAA to explore applications of AI to improve weather forecasts and information delivery, other provisions also would direct the application of AI and machine learning for other purposes or apply NOAA data for AI training purposes (e.g., §§108, 204, 209, 304, 402, 502 of H.R. 3816).

Title III: Commercial Weather and Environmental Observations would amend the Weather Act to codify NOAA's Commercial Data Program and Commercial Data Pilot Program and make changes to its activities. (For more about the program and proposed changes, see CRS In Focus IF12671, *NOAA's Commercial Data Program: Background and Considerations for Congress*.)

Title IV: Communicating Weather to the Public would amend the Weather Act regarding hazardous weather or water events (e.g., severe storms, flash floods) risk

communication, hazard communication research, and public engagement. It also would direct NOAA to improve NWS communication services, continue to perform post-storm surveys and assessments, and collect certain types of data on public response to hazardous weather or water communications and events. The title also would task the Government Accountability Office (GAO) with examining NWS's public notification system.

Title V: Improving Weather Information for Agriculture and Water Management would amend several laws including the Food Security Act of 1985 (P.L. 99-198) to add forecasting pilot projects for water management and agriculture; the National Integrated Drought Information System Act of 2006 (P.L. 109-430) to adjust the system's functions, partnerships, and modeling activities; and the Coordinated Ocean Observations and Research Act of 2020 (P.L. 116-271) to make changes to the National Water Center. The title would codify both the National Mesonet Program (a central repository for nonfederal weather data) and the National Coordinated Soil Moisture Monitoring Network initiative. It also would require a report regarding existing federal authorities and policies related to transferring NOAA weather satellites to another federal agency.

Title VI: Harmful Algal Bloom and Hypoxia Research Control would reauthorize and amend the Harmful Algal Bloom and Hypoxia Research and Control Act of 1998 (P.L. 105-383) to improve monitoring, forecasting, prevention, and mitigation of harmful algal blooms and hypoxia by NOAA and the Environmental Protection Agency.

Title VII: Preventing Health Emergencies and Temperature-Related Illness and Deaths would task NOAA with new responsibilities related to extreme heat preparedness, including establishing an interagency committee within NOAA to coordinate a government-wide approach to reducing health risks and impacts of heat and improving the delivery of heat-related data, information, forecasts, warnings, predictions, and projections.

Title VII: National Landslide Preparedness Act Reauthorization would amend and reauthorize programs established under the National Landslide Preparedness Act (P.L. 116-323). Among other things, H.R. 3816 would require the U.S. Geological Survey, in consultation with NOAA, to assess the impact of atmospheric rivers and extreme precipitation events on landslide risk as part of the National Landslide Hazards Reduction Program.

Title IX: Other Authorities would task NOAA with new responsibilities, including the establishment of meteorological observation stations in the Arctic; reporting unfunded priorities; and miscellaneous authorities, such as technical assistance to U.S. states and certain countries in the Pacific region; international collaboration; app- and web-based tools to access NOAA data, services, and products; and congressional briefings.

Considerations for Congress

In its deliberations on H.R. 3816, Congress could consider a variety of topics, including other weather-related legislative proposals in the 119th Congress not included in H.R. 3816 and potential impacts of NOAA's staffing cuts and reorganization proposal on the agency's ability to fulfill its mission. For example, some Members introduced bills related to rural weather (H.R. 4239); advanced weather model computing (H.R. 4141); wildfire, fire weather, and/or smoke forecasting (e.g., H.R. 4075, S. 306); and the establishment of National Disaster Safety Board (e.g., H.R. 6450, S. 3338). Congress also could consider incorporating directives from previous annual appropriation bills and explanatory statements. For example, in the explanatory statement accompanying FY2024 annual appropriations, Congress directed NOAA to use funding to improve fire weather modeling, prediction, and detection and to evaluate commercial capabilities of hyperspectral microwave sounder data.

NWS reportedly has lost more than 550 staff since the start of the second Trump Administration. On June 2, 2025, a NOAA representative emailed "congressional colleagues" about the agency's "plans to mitigate [NWS] staffing vacancy operational impacts," which would include advertising for 126 permanent positions under an exception to the NOAA-wide hiring freeze. In early August 2025, NWS reportedly received permission to hire 450 meteorologists, hydrologist, and radar technicians. As of August 8, 2025, nine positions have been posted on USAjobs.gov. Both House and Senate (S.Rept. 119-44) reports accompanying FY2026 annual appropriations bills expressed concerns about staffing vacancies at NWS Weather Forecast Offices. S.Rept. 119-44 further identified that "insufficient staffing levels risk compromising public safety and the NWS's mission to protect lives and property." Both the House and Senate reports would direct NOAA to provide a report detailing the agency's plan to address these staffing concerns. In response to NWS staffing cuts, some Members in the 119th Congress also have introduced bills that would grant NWS temporary direct hiring authority (H.R. 3809) or would exempt critical NWS positions from executive orders or memoranda imposing a hiring freezes (S. 1958).

In addition, the Trump Administration has proposed to eliminate NOAA's Office of Oceanic and Atmospheric Research (OAR) and transfer several OAR weather research-related activities to NWS. Members may consider whether NOAA staffing cuts and reorganization proposals might affect congressional goals set out in H.R. 3816, and may choose to consider options proposed in H.R. 3809 and S. 1958 to address such cuts. Members also may consider whether staffing changes might affect weather-related research previously conducted under OAR were the research activities transferred to NWS. S.Rept. 119-44 acknowledged OAR programs provide research and technology "needed to improve NOAA weather forecasts" and in the absence of detailed organization plans would "maintain ... funding for OAR programs under their existing structure."

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