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Weather Act Reauthorization Act of 2025 (H.R. 3816 and H.R. 5089)

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 \$1 billion of total costs, for 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 and exposure of populations and infrastructure.

The National Oceanic and Atmospheric Administration (NOAA) is the primary civilian agency responsible for weather forecasting. In recent years, Congress passed the Weather Research and Forecasting Innovation Act (Weather Act; P.L. 115-25) and has provided additional direction to NOAA regarding weather forecasting through amendments and annual and supplemental appropriations (e.g., explanatory statement accompanying P.L. 118-42). The 119th Congress has considered several bills (H.R. 3816 and H.R. 5089; both titled the Weather Act Reauthorization Act of 2025) to advance NOAA’s “weather research, support improvements in weather forecasting and prediction, expand commercial opportunities for the provision of weather data, and for other purposes.” No similar bill has been introduced in the Senate. This product describes H.R. 3816 and H.R. 5089, as well as selected related considerations for Congress.

Weather Act Reauthorization Act of 2025

House Members introduced H.R. 3816 in June 2025 and H.R. 5089 in September 2025. The House Science, Space, and Technology Committee marked up H.R. 5089 in September 2025 and ordered it to be reported, as amended. As of December 16, 2025, the amended bill has not been released or reported. In his markup opening statement, Chair Brian Babin stated that “extensive discussions” of the Weather Act led to the development of H.R. 5089, which was built on the “strong foundation” of H.R. 6093 (Weather Act Reauthorization Act of 2023) passed by the House in the 118th Congress. H.R. 3816 and H.R. 5089, as introduced, would amend the Weather Act and authorize or direct NOAA to take on new responsibilities. Some provisions would codify current NOAA activities, and others would allow NOAA to conduct new activities. The bills, as introduced, share multiple identical or similar provisions. Differences between the bills, some of which are described below, include distinctions between some provisions’ language, different arrangements of some provisions, or the absence or presence of certain provisions from each bill. Some of the differences were addressed through amendments passed during the markup, described below.

H.R. 3816 and H.R. 5089, Title I: Reauthorization of the Weather Act, would amend the law’s provisions 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. Differences in Title I of each bill include changes to the provision’s text or organization, removal or addition of some subsections from each bill, or rearrangement of sections across bills (e.g., H.R. 3816, §115, is H.R. 5089, §507; H.R. 3816, Title VI, is H.R. 5089, §117; and H.R. 3816, Title VIII, is H.R. 5089, §§115 and 116).

H.R. 3816 and H.R. 5089, Title II: Enhancing Federal Weather Forecasting and Innovation, would task NOAA with new responsibilities and authorities regarding weather radars; atmospheric river, coastal flooding, and storm surge 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; and the National Weather Service’s (NWS’s) workforce. H.R. 3816 includes Sections 211, 212, and 213 regarding artificial intelligence (AI) for weather forecasting, atmospheric observations, and coastal marine fog, respectively. Similar provisions are not included in H.R. 5089, as introduced. Other differences between Title II in each bill include changes to the text or provision organization and the removal or addition of some subsections from each bill.

H.R. 3816 and H.R. 5089, Title III: Commercial Weather and Environmental Observations, would amend the Weather Act to codify NOAA’s Commercial Data Program and Commercial Data Pilot Program; provide related contracting authority; and require certain data assimilation, management, and sharing practices. For more about the program and proposed changes, see CRS In Focus IF12671, *NOAA’s Commercial Data Program: Background and Considerations for Congress*. Title III is mostly similar between the two bills.

H.R. 3816 and H.R. 5089, Title IV: Communicating Weather to the Public, would amend the Weather Act to improve risk communication of hazardous weather or water events (e.g., severe storms, flash floods) and support 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 with examining NWS's public notification system. Title IV is mostly similar between the two bills.

H.R. 3816 and H.R. 5089, 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 V in H.R. 3816 and H.R. 5089 are largely similar but have some language differences; H.R. 5089, Title V, also includes H.R. 3816, Section 115 (focused on precipitation forecast improvement).

H.R. 3816, 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 (HABs) and hypoxia by NOAA and the Environmental Protection Agency. H.R. 3816, Title VI, is H.R. 5089, Section 117, with some changes.

H.R. 3816, Title VII: Preventing Health Emergencies and Temperature-Related Illness and Deaths, would codify NOAA's ongoing activities related to extreme heat preparedness, including the interagency committee led by NOAA to coordinate a government-wide approach aimed at reducing health risks and impacts of heat, as well as direct NOAA to improve the delivery of heat-related data, information, forecasts, warnings, predictions, and projections. This title is not included in H.R. 5089.

H.R. 3816, Title VIII: National Landslide Preparedness Act Reauthorization, would amend the Flood Level Observation, Operations, and Decision Support Act (P.L. 117-316) to define certain precipitation-related terms, and amend and reauthorize programs established under the National Landslide Preparedness Act (P.L. 116-323), to assess the impact of atmospheric rivers and extreme precipitation events on landslide risk, among other things. H.R. 3816, Title VIII, is H.R. 5089, Sections 115 and 116; the provisions are largely similar.

H.R. 3816, Title IX: Other Authorities, would task NOAA with new responsibilities, including the establishment of meteorological observation stations in the Arctic; the reporting of unfunded priorities; and miscellaneous authorities, such as technical assistance to certain parties in the Pacific region; international collaboration; app- and web-based tools to access NOAA data, services, and products; and congressional briefings. This title is not included in H.R. 5089.

Considerations for Congress

During the H.R. 5089 markup, the committee passed amendments to the bill focused on tornado research, drone procurement, HABs and hypoxia, rip current forecasts, Central Weather Service Units, AI, ocean observation networks and programs, and coastal marine fog. In its further deliberations on H.R. 5089, Congress could consider additional weather-related legislative proposals in the 119th Congress. For example, some Members introduced bills related to rural weather (H.R. 4239); advanced weather model computing (H.R. 4141); and wildfire, fire weather, and/or smoke forecasting (e.g., H.R. 4075, S. 306). Congress also could consider incorporating directives from previous annual appropriations bills and explanatory statements. For example, in the explanatory statement accompanying NOAA's FY2024 annual appropriations, Congress directed NOAA to use funding to improve fire weather modeling, prediction, and detection and to evaluate commercial capabilities to collect certain data for use in weather forecasting.

Congress also could consider the potential impacts of the Trump Administration's staffing cuts and reorganization proposals on NOAA's ability to fulfill its weather-related mission. NWS reportedly has lost more than 550 staff since the start of the second Trump Administration and has since received permission to hire 450 meteorologists, hydrologists, and radar technicians. Both the House and the Senate Appropriations Committee reports (H.Rept. 119-272 and S.Rept. 119-44) accompanying FY2026 annual appropriations bills express concerns about staffing vacancies at NWS local weather forecast offices. S.Rept. 119-44, for example, states that "insufficient staffing levels risk compromising public safety and the NWS's mission to protect lives and property." Both chambers' reports would direct NOAA to provide a report detailing the agency's plan to address these staffing concerns. 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 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. The Administration's goal is to "streamline program management and focus on NOAA's weather mission." Both H.Rept. 119-272 and S.Rept. 119-44 would retain OAR and its programs as budget line items, with S.Rept. 119-44 acknowledging that OAR programs provide research and technology "needed to improve NOAA weather forecasts." Members may consider whether NOAA staffing cuts and reorganization proposals might affect congressional goals set out in H.R. 3816 or H.R. 5089, and whether to address those changes in the bills or through oversight or other legislation.

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