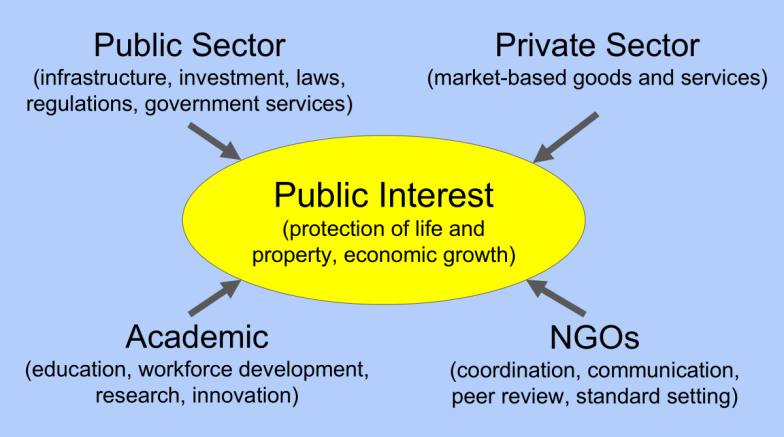
AMERICAN METEOROLOGICAL SOCIETY
45 Beacon Street, Boston, Massachusetts 02108-3693 USA
TEL: 617-227-2425
FAX: 617-742-8718
E-mail: amsinfo@ametsoc.org
Web: www.ametsoc.org

Without a Strong Weather Enterprise America's Economic Leadership Is at Risk

A Statement of the American Meteorological Society

Summary and Recommendations of a Special Report of the American Meteorological Society (AMS) Weather Enterprise Study[1]

For decades, the United States has led the world in supplying weather information that provides for the protection of life and property and supports all segments of the nation's economy.[2] This success springs from the carefully constructed balance among the government, private, nongovernmental organization (NGO), and academic sectors working in weather — known collectively as the weather enterprise. Each sector depends critically on the work of the others so that together they efficiently and effectively serve the nation. With the value of weather and climate information to the U.S. economy exceeding $100 billion annually[3] (10 times the investment made by taxpayers), it is clear that a strong weather enterprise is essential to America's economic leadership.



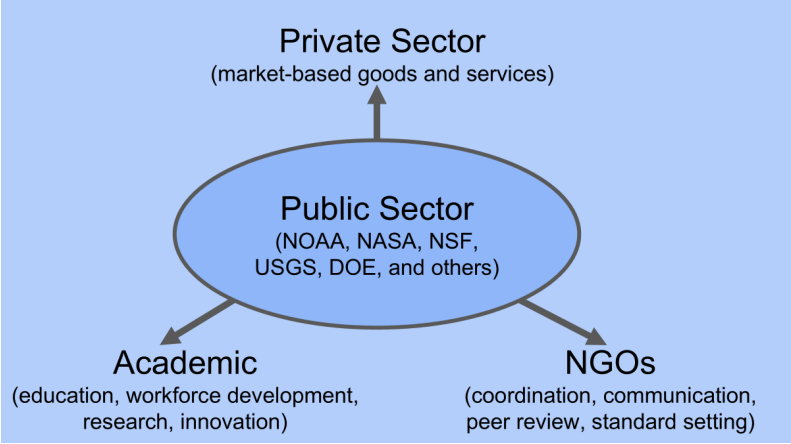
All components of the weather enterprise contribute to the public good in a balanced way that has been honed over decades in an intentional and collaborative manner to take advantage of the strengths of each sector.

Critically, every facet of the success of the U.S. weather enterprise depends on the high-quality research, data, and services provided by the National Oceanic and Atmospheric Administration (NOAA) and other federal agencies. Recent reductions in staffing and funding across federal agencies threaten the carefully established balance of the enterprise, placing the entire chain of observations, quality control, model forecasts, and decision support for the protection of life and property at risk. A failure of these systems would be

[1] https://www.ametsoc.org/ams/policy/studies-analysis/weather-enterprise-economic-leadership/
[2] Lazo, et al., 2011: U.S. Economic Sensitivity to Weather Variability. *Bull. Amer. Meteor. Soc.*, **92**, 709–720, https://doi.org/10.1175/2011BAMS2928.1.
[3] Lazo, J. 2024: Communicating Forecast Uncertainty (CoFU) 2: Replication and Extension of a Survey of the US Public's Sources, Perceptions, Uses, and Values for Weather Information. An AMS Policy Program Study. The American Meteorological Society, Washington, D.C. https://doi.org/10.1175/cofu2-2024

catastrophic, causing, for example, shorter tornado warning lead-time, more uncertainty in hurricane landfall intensity and location, and worse forecast of snowfall amounts — all of which will put the pocketbooks and lives of hard-working Americans at greater risk. Data delivery failures and worse forecasts also will create costly and dangerous delays for sensitive private sector systems and clients like power companies, transportation, real time risk management, and data farms. Further, the members of our U.S. Armed Forces regularly depend on timely, accurate weather forecast information underpinned by NOAA, meaning that any degradation of services could have disastrous consequences on their lives and to our national security.

Fewer upper-air observations that are critical to severe storm forecasting and canceled training for meteorologists who support forecast fire operations are just two examples of impacts that are already being felt. Other impacts will include deferred or canceled maintenance, upgrades, and preparations for the future, a loss of scientific progress and technological innovation, and an inability to build and retain a strong workforce — all of which threaten U.S. scientific and economic leadership.



The Federal agencies in the public sector, most notably NOAA but also NASA, NSF, USGS, DOE, and others, provide a foundational role in supporting the rest of the weather enterprise.

As hazardous weather events will always be a part of life in the United States and approximately one-third of the U.S. economy is sensitive to weather and climate,[4] the continued efforts of the weather enterprise are crucial to enable American families, businesses, troops, and communities to prepare for and protect themselves from weather risks. Three immediate actions are recommended to restore capabilities to protect life and property from weather risks and to allow the carefully balanced public–private partnership within the weather enterprise to continue to support economic growth:

Recommendation 1: Maintain a strong NOAA with adequate resources to maintain scientifically curated, high-quality, foundational observations, to secure critical national data and computing infrastructure, and to restore sufficient staffing in the National Weather Service (NWS) and the Office of Oceanic and Atmospheric Research (OAR), which will ensure protection of life and property and a more robust economy.

Recommendation 2: Restore critically important funding for Earth science research in NOAA, NSF, DOE, and NASA to support the development of new observing technologies

[4] See: https://www.noaa.gov/weather

and models (including AI modeling) within the agencies and through cooperative institutes and cooperative research and development agreements with private sector companies.

<u>Recommendation 3:</u> Ensure continued funding to university and other collaborative research efforts in atmospheric science to support the training of the next generation of leaders, the development of new technologies (e.g., those leveraging AI to improve models, products, and services), and the inclusion of social science research into severe weather events and community responses in support of commercial enterprise (e.g., the insurance and reinsurance industries).