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§ 8501. Definitions

In this chapter:

(1) Seasonal

The term “seasonal” means the time range between 3 months and 2 years.

(2) State

The term “State” means a State, a territory, or possession of the United States, including a Commonwealth, or the District of Columbia.

(3) Subseasonal

The term “subseasonal” means the time range between 2 weeks and 3 months.

(4) Under Secretary

The term “Under Secretary” means the Under Secretary of Commerce for Oceans and Atmosphere.

(5) Weather industry and weather enterprise

The terms “weather industry” and “weather enterprise” are interchangeable in this chapter, and include individuals and organizations from public, private, and academic sectors that contribute to the research, development, and production of weather forecast products, and primary consumers of these weather forecast products.

(Pub. L. 115-25, §2, Apr. 18, 2017, 131 Stat. 92.)

Editorial Notes

REFERENCES IN TEXT

This chapter, referred to in text, is Pub. L. 115-25, April 18, 2017, 131 Stat. 91, known as the Weather Research and Forecasting Innovation Act of 2017, which is classified principally to this chapter. For complete classification of this Act to the Code, see Short Title note set out below and Tables.

Statutory Notes and Related Subsidiaries

SHORT TITLE OF 2022 AMENDMENT

Pub. L. 117-229, div. D, §1, Dec. 16, 2022, 136 Stat. 2313, provided that: “This Act [enacting subchapter IV of this chapter] may be cited as the ‘Providing Research and Estimates of Changes In Precipitation Act’ or the ‘PRECIP Act’.”

SHORT TITLE OF 2019 AMENDMENT

Pub. L. 115-423, §1, Jan. 7, 2019, 132 Stat. 5454, provided that: “This Act [enacting section 8550 of this title and section 4010 of Title 33, Navigation and Navigable Waters, amending sections 313d, 8512, 8518 to 8521, 8531, and 8532 of this title and sections 4001 to 4002 and 4009 of Title 33, enacting provisions set out as a note under section 4001 of Title 33, and amending provisions set out as a note under section 313d of this title] may be cited as the ‘National Integrated Drought Information System Reauthorization Act of 2018’.”

SHORT TITLE

Pub. L. 115-25, §1(a), Apr. 18, 2017, 131 Stat. 91, provided that: “This Act [enacting this chapter and sections 3206a and 3208 of Title 33, Navigation and Navigable Waters, amending sections 3201 to 3207 of Title 33, and enacting and repealing provisions set out as notes under section 3201 of Title 33] may be cited as the ‘Weather Research and Forecasting Innovation Act of 2017’.”

SUBCHAPTER I—UNITED STATES WEATHER RESEARCH AND FORECASTING IMPROVE- MENT

§ 8511. Public safety priority

In conducting research, the Under Secretary shall prioritize improving weather data, modeling, computing, forecasting, and warnings for the protection of life and property and for the enhancement of the national economy.

(Pub. L. 115-25, title I, §101, Apr. 18, 2017, 131 Stat. 92.)

§ 8512. Weather research and forecasting innovation

(a) Program

The Assistant Administrator for the Office of Oceanic and Atmospheric Research shall conduct a program to develop improved understanding of and forecast capabilities for atmospheric events and their impacts, placing priority on developing more accurate, timely, and effective warnings and forecasts of high impact weather events that endanger life and property.

(b) Program elements

The program described in subsection (a) shall focus on the following activities:

(1) Improving the fundamental understanding of weather consistent with section 8511 of this title, including the boundary layer and other processes affecting high impact weather events.

(2) Improving the understanding of how the public receives, interprets, and responds to warnings and forecasts of high impact weather events that endanger life and property.

(3) Research and development, and transfer of knowledge, technologies, and applications to the National Weather Service and other appropriate agencies and entities, including the United States weather industry and academic partners, related to—

(A) advanced radar, radar networking technologies, and other ground-based technologies, including those emphasizing rapid, fine-scale sensing of the boundary layer and lower troposphere, and the use of innovative, dual-polarization, phased-array technologies;

(B) aerial weather observing systems;

(C) high performance computing and information technology and wireless communication networks;

(D) advanced numerical weather prediction systems and forecasting tools and techniques that improve the forecasting of timing, track, intensity, and severity of high impact weather, including through—

(i) the development of more effective mesoscale models;

(ii) more effective use of existing, and the development of new, regional and national cloud-resolving models;

(iii) enhanced global weather models; and

(iv) integrated assessment models;

(E) quantitative assessment tools for measuring the impact and value of data and observing systems, including Observing System Simulation Experiments (as described in section 8517 of this title), Observing System Experiments, and Analyses of Alternatives;

(F) atmospheric chemistry and interactions essential to accurately characterizing atmospheric composition and predicting meteorological processes, including cloud microphysical, precipitation, and atmospheric electrification processes, to more effectively understand their role in severe weather; and

(G) additional sources of weather data and information, including commercial observing systems.

(4) A technology transfer initiative, carried out jointly and in coordination with the Director of the National Weather Service, and in cooperation with the United States weather industry and academic partners, to ensure continuous development and transition of the latest scientific and technological advances into operations of the National Weather Service and to establish a process to sunset outdated and expensive operational methods and tools to enable cost-effective transfer of new methods and tools into operations.

(5) Advancing weather modeling skill, reclaiming and maintaining international leadership in the area of numerical weather prediction, and improving the transition of research into operations by—

(A) leveraging the weather enterprise to provide expertise on removing barriers to improving numerical weather prediction;

(B) enabling scientists and engineers to effectively collaborate in areas important for improving operational global numerical weather prediction skill, including model development, data assimilation techniques, systems architecture integration, and computational efficiencies;

(C) strengthening the National Oceanic and Atmospheric Administration's ability to

undertake research projects in pursuit of substantial advancements in weather forecast skill;

(D) utilizing and leverage existing resources across the National Oceanic and Atmospheric Administration enterprise; and

(E) creating a community global weather research modeling system that—

(i) is accessible by the public;

(ii) meets basic end-user requirements for running on public computers and networks located outside of secure National Oceanic and Atmospheric Administration information and technology systems; and

(iii) utilizes, whenever appropriate and cost-effective, innovative strategies and methods, including cloud-based computing capabilities, for hosting and management of part or all of the system described in this subsection.

(c) Extramural research

(1) In general

In carrying out the program under this section, the Assistant Administrator for Oceanic and Atmospheric Research shall collaborate with and support the non-Federal weather research community, which includes institutions of higher education, private entities, and nongovernmental organizations, by making funds available through competitive grants, contracts, and cooperative agreements.

(2) Sense of Congress

It is the sense of Congress that not less than 30 percent of the funds for weather research and development at the Office of Oceanic and Atmospheric Research should be made available for the purpose described in paragraph (1).

(d) Annual report

Each year, concurrent with the annual budget request submitted by the President to Congress under section 1105 of title 31 for the National Oceanic and Atmospheric Administration, the Under Secretary shall submit to Congress a description of current and planned activities under this section.

(Pub. L. 115-25, title I, § 102, Apr. 18, 2017, 131 Stat. 92; Pub. L. 115-423, § 4(a), Jan. 7, 2019, 132 Stat. 5456; Pub. L. 117-263, div. J, title CVI, § 10601(c)(8), Dec. 23, 2022, 136 Stat. 3997.)

Editorial Notes

AMENDMENTS

2022—Subsec. (b)(4), (5). Pub. L. 117-263 redesignated par. (4) relating to advancing weather modeling skill as (5).

2019—Subsec. (b)(4). Pub. L. 115-423 added par. (4) relating to advancing weather modeling skill.

§ 8512a. Learning excellence and good examples from new developers

(a) Definitions

In this section:

(1) Administration

The term “Administration” means the National Oceanic and Atmospheric Administration.