



(Original Signature of Member)

118TH CONGRESS
1ST SESSION

H. R. _____

To accelerate subseasonal to seasonal prediction skills related to precipitation forecasts for water management in the western United States, improve atmospheric river forecasts across the country, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

M. _____ introduced the following bill; which was referred to the
Committee on _____

A BILL

To accelerate subseasonal to seasonal prediction skills related to precipitation forecasts for water management in the western United States, improve atmospheric river forecasts across the country, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE.**

4 This Act may be cited as the “Improving Atmos-
5 pheric River Forecasts Act”.

1 **SEC. 2. SUBSEASONAL TO SEASONAL FORECASTING PILOT**
2 **PROJECTS.**

3 (a) IMPROVING SUBSEASONAL AND SEASONAL FORE-
4 CASTS.—Subsection (h) of section 1762 of the Food Secu-
5 rity Act of 1985 (15 U.S.C. 8521) is amended to read
6 as follows:

7 “(h) SUBSEASONAL TO SEASONAL FORECASTING
8 PILOT PROJECTS.—

9 “(1) ESTABLISHMENT.—The Under Secretary
10 shall establish at least one pilot project within the
11 U.S. Weather Research Program of the Oceanic and
12 Atmospheric Research office of the National Oceanic
13 and Atmospheric Administration to support im-
14 proved subseasonal to seasonal precipitation fore-
15 casts for water management in the western United
16 States.

17 “(2) OBJECTIVES.—In carrying out this sub-
18 section, the Under Secretary shall ensure that a
19 pilot project under paragraph (1) addresses key
20 science challenges to improving forecasts and devel-
21 oping related products described in subsection (c)
22 for water management in the western United States,
23 including the following:

24 “(A) Improving model resolution, both hor-
25 izontal and vertical, to resolve issues associated
26 with mountainous terrain, such as intensity of

1 precipitation and relative fraction of rain versus
2 snow precipitation.

3 “(B) Improving fidelity in modeling of—

4 “(i) the atmospheric boundary layer in
5 mountainous regions; and

6 “(ii) atmospheric rivers.

7 “(C) Resolving challenges in predicting
8 winter atmospheric circulation and storm
9 tracks, including periods of blocked versus
10 unblocked flow over the eastern North Pacific
11 Ocean and western United States.

12 “(D) Advancing scientific understanding of
13 the roles of atmospheric rivers in subseasonal to
14 seasonal precipitation, and developing tools to
15 predict periods of active or inactive atmospheric
16 river landfalls and inland penetration over the
17 western United States.

18 “(3) ACTIVITIES.—A pilot project under this
19 subsection shall include activities that carry out the
20 following:

21 “(A) Best implement recommendations of
22 the National Weather Service’s 2019 Report,
23 entitled ‘Subseasonal and Seasonal Forecasting
24 Innovation: Plans for the Twenty-First Cen-
25 tury’.

1 “(B) Achieve measurable objectives for
2 operational forecast improvement.

3 “(C) Engage with, and leverage the re-
4 sources of, institutions of higher education (as
5 such term is defined in section 101 of the High-
6 er Education Act of 1965 (20 U.S.C. 1001))
7 with experience in western precipitation science,
8 as well as entities within the National Oceanic
9 and Atmospheric Administration in existence as
10 of the date of the enactment of this subsection,
11 including the Western Regional Climate Center
12 and the National Centers for Environmental In-
13 formation.

14 “(D) Are carried out in coordination with
15 the Assistant Administrator for the Office of
16 Oceanic and Atmospheric Research and the Di-
17 rector of the National Weather Service.

18 “(4) AUTHORIZATION OF APPROPRIATIONS.—
19 From amounts made available to Operations, Re-
20 search, and Facilities at the National Oceanic and
21 Atmospheric Administration, there is authorized to
22 be appropriated \$15,000,000 for each of fiscal years
23 2024 through 2028 to carry out this subsection.

1 “(5) SUNSET.—The authority under this sub-
2 section shall terminate on the date that is five years
3 after the date of the enactment of this subsection.”;

4 **SEC. 3. ATMOSPHERIC RIVERS FORECAST IMPROVEMENT**
5 **PROGRAM.**

6 (a) IN GENERAL.—The Under Secretary, in collabo-
7 ration with the United States weather industry and aca-
8 demic partners, shall establish an atmospheric river fore-
9 cast improvement program (in this section referred to as
10 the “program”).

11 (b) GOAL.—The goal of the program shall be to re-
12 duce through the development and extension of accurate,
13 effective, and actionable forecasts and warnings the loss
14 of life and economic losses from atmospheric rivers, in-
15 cluding by—

16 (1) establishing quantitative atmospheric river
17 forecast skill metrics; and

18 (2) developing methods to categorize the inten-
19 sity of atmospheric rivers.

20 (c) INNOVATIVE OBSERVATIONS AND MODELING.—
21 The Under Secretary shall ensure the program periodically
22 examines, tests, and evaluates the value of incorporating
23 innovative observations, such as observations from crewed
24 or uncrewed aircraft, novel airborne and satellite-based
25 snowpack measurements, ocean buoys data, soil moisture

1 monitoring systems, reservoir storage data, observations
2 from mesonets, or other emerging technologies, with re-
3 spect to the improvement of atmospheric river forecasts,
4 predictions, and warnings.

5 (d) PROGRAM PLAN.—Not later than 180 days after
6 the date of the enactment of this Act, the Assistant Ad-
7 ministrator for Oceanic and Atmospheric Research, in co-
8 ordination with the Director of the National Weather
9 Service, shall develop a plan that details the specific re-
10 search, development, data acquisition, and technology
11 transfer activities, as well as corresponding resources and
12 timelines, necessary to achieve the goals of the program
13 under subsection (b).

14 (e) ANNUAL BUDGET FOR PLAN SUBMITTAL.—After
15 the development of the plan pursuant to subsection (d),
16 the Under Secretary, acting through the Assistant Admin-
17 istrator for Oceanic and Atmospheric Research, and in co-
18 ordination with the Director of the National Weather
19 Service, shall, not less frequently than annually, submit
20 to Congress a proposed budget corresponding with the ac-
21 tivities identified in such plan.

22 (f) DEFINITIONS.—In this section, the terms “Under
23 Secretary” and “weather industry” have the meanings
24 given such terms in section 2 of the Weather Research

1 and Forecasting Innovation Act of 2017 (15 U.S.C.
2 8501).