

118TH CONGRESS  
2D SESSION

# S. 4975

To require the Under Secretary of Commerce for Oceans and Atmosphere to carry out pilot projects relating to improved subseasonal to seasonal forecasting in agriculture and water management, and for other purposes.

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## IN THE SENATE OF THE UNITED STATES

AUGUST 1, 2024

Ms. ROSEN (for herself, Mr. PADILLA, and Mr. HEINRICH) introduced the following bill; which was read twice and referred to the Committee on Commerce, Science, and Transportation

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## A BILL

To require the Under Secretary of Commerce for Oceans and Atmosphere to carry out pilot projects relating to improved subseasonal to seasonal forecasting in agriculture and water management, 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 “Smarter Weather  
5 Forecasting for Water Management, Farming, and  
6 Ranching Act of 2024”.

1 **SEC. 2. WEATHER AND CLIMATE INFORMATION IN AGRICULTURE AND WATER MANAGEMENT.**  
2

3 Section 1762 of the Food Security Act of 1985 (15  
4 U.S.C. 8521) is amended—

5 (1) by amending subsection (h) to read as follows:  
6

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

9 “(1) ESTABLISHMENT.—The Under Secretary  
10 shall establish not fewer than two pilot projects, in  
11 accordance with paragraph (2), within the U.S.  
12 Weather Research Program of the Oceanic and Atmospheric  
13 Research office of the National Oceanic and Atmospheric  
14 Administration to support improved subseasonal to seasonal  
15 precipitation forecasts for the following:  
16

17 “(A) Water management in the western  
18 United States.

19 “(B) Agriculture in the United States.

20 “(2) OBJECTIVES.—In carrying out this subsection,  
21 the Under Secretary shall ensure the following:  
22

23 “(A) A pilot project under subparagraph  
24 (A) of paragraph (1) addresses key science  
25 challenges to improving forecasts and developing  
26 related products for water management

1 in the western United States, including the fol-  
2 lowing:

3 “(i) Improving operational model reso-  
4 lution, both horizontal and vertical, to re-  
5 solve issues associated with mountainous  
6 terrain, such as intensity of precipitation  
7 and relative fraction of rain versus snow  
8 precipitation.

9 “(ii) Improving fidelity in the oper-  
10 ational modeling of the atmospheric bound-  
11 ary layer in mountainous regions.

12 “(iii) Resolving challenges in pre-  
13 dicting winter atmospheric circulation and  
14 storm tracks, including periods of blocked  
15 versus unblocked flow over the eastern  
16 North Pacific Ocean and western United  
17 States.

18 “(iv) Improving the forecast of atmos-  
19 pheric rivers.

20 “(v) Improving—

21 “(I) the quality and temporal  
22 and spatial resolution of observations  
23 of air-sea interactions;

24 “(II) operational modeling of air-  
25 sea interactions; and

1                   “(III) operational modeling of  
2                   the influence of oceans on subseasonal  
3                   and seasonal forecasting.

4                   “(B) A pilot project under subparagraph  
5                   (B) of paragraph (1) addresses key science  
6                   challenges to improving forecasts and devel-  
7                   oping related products for agriculture in the  
8                   United States, including the following:

9                   “(i) Improving the quality and tem-  
10                  poral and spatial resolution of observations  
11                  and accurate operational modeling of the  
12                  land surface and hydrologic cycle, includ-  
13                  ing soil moisture and flash drought proc-  
14                  esses.

15                  “(ii) Improving fidelity in the oper-  
16                  ational modeling of warm season precipita-  
17                  tion processes.

18                  “(iii) Understanding and predicting  
19                  large-scale upper-level dynamical flow  
20                  anomalies that occur in spring and sum-  
21                  mer.

22                  “(3) ACTIVITIES.—A pilot project under this  
23                  subsection shall include activities that—

24                  “(A) best implement recommendations con-  
25                  tained in the 2020 report of the National

1 Weather Service, entitled ‘Subseasonal and Sea-  
2 sonal Forecasting Innovation: Plans for the  
3 Twenty-First Century’;

4 “(B) achieve measurable objectives for  
5 operational forecast improvement;

6 “(C) engage with, and leverage the re-  
7 sources of, institutions of higher education (as  
8 such term is defined in section 101 of the High-  
9 er Education Act of 1965 (20 U.S.C. 1001)), or  
10 a consortia thereof, and entities within the Na-  
11 tional Oceanic and Atmospheric Administration  
12 in existence as of the date of the enactment of  
13 this subsection, including Regional Climate  
14 Centers and the National Centers for Environ-  
15 mental Information; and

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

20 “(4) SUNSET.—The authority under this sub-  
21 section shall terminate on the date that is five years  
22 after the date of the enactment of this subsection.”;  
23 and

24 (2) by amending subsection (j) to read as fol-  
25 lows:

1       “(j) AUTHORIZATION OF APPROPRIATIONS.—There  
2 are authorized to be appropriated \$45,000,000 for each  
3 of fiscal years 2024 through 2028 to carry out the activi-  
4 ties under this section.”.

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