

114TH CONGRESS
1ST SESSION

S. _____

To help enhance commerce through improved seasonal forecasts, and for other purposes.

IN THE SENATE OF THE UNITED STATES

Mr. THUNE (for himself and Mr. SCHATZ) introduced the following bill; which was read twice and referred to the Committee on _____

A BILL

To help enhance commerce through improved seasonal forecasts, 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 “Seasonal Forecasting
5 Improvement Act”.

6 **SEC. 2. IMPROVING SEASONAL FORECASTS FOR AGRI-**
7 **CULTURE AND COMMERCE.**

8 Section 1762 of title XVII of Public Law 99—198
9 (15 U.S.C. 313 note) is amended—

1 (1) in subsection (a), by striking “(a)” and in-
2 serting “(a) FINDINGS.—”;

3 (2) in subsection (b), by striking “(b)” and in-
4 serting “(b) POLICY.—”; and

5 (3) by adding at the end the following:

6 “(c) FUNCTIONS.—The Under Secretary, through the
7 National Weather Service and other appropriate programs
8 in the National Oceanic and Atmospheric Administration,
9 shall—

10 “(1) collect and utilize information in order to
11 make usable, reliable, and timely forecasts of sea-
12 sonal temperature and precipitation;

13 “(2) leverage existing research and models from
14 the academic sector to improve the forecasts under
15 paragraph (1);

16 “(3) determine and provide information on how
17 the forecasted conditions under paragraph (1) may
18 impact—

19 “(A) the number and severity of droughts,
20 tornadoes, hurricanes, floods, heatwaves, or
21 other relevant natural disasters;

22 “(B) snowpack; and

23 “(C) sea ice conditions;

1 “(4) provide the forecasts under paragraph (1)
2 and the information under paragraphs (1) and (3)
3 on both national and regional levels; and

4 “(5) develop an Internet clearinghouse with the
5 forecasts of seasonal temperature and precipitation
6 and other relevant seasonal forecasts and products
7 produced by the National Oceanic and Atmospheric
8 Administration, other Federal and State depart-
9 ments and agencies, and the academic sector.

10 “(d) COMMUNICATION.—The Under Secretary shall
11 provide the forecasts and the information on their impacts
12 under subsection (c) to the public, including public and
13 private entities engaged in planning and preparedness, in-
14 cluding—

15 “(1) decisionmakers at the Federal, regional,
16 State, tribal, and local levels of government;

17 “(2) the private sector; and

18 “(3) the public.

19 “(e) COOPERATION.—The Under Secretary shall
20 build upon existing forecasting and assessment programs
21 and partnerships, including—

22 “(1) by designating research and monitoring ac-
23 tivities related to seasonal forecasts as a priority in
24 1 or more Cooperative Institute solicitations;

1 “(2) by contributing to the interagency Earth
2 System Prediction Capability; and

3 “(3) by consulting with the Secretary of De-
4 fense and the Secretary of Homeland Security to de-
5 termine the highest priority seasonal forecast needs
6 to enhance national security.

7 “(f) FORECAST COMMUNICATION COORDINATORS.—

8 “(1) IN GENERAL.—The Under Secretary shall
9 provide grants to States, including territories, for
10 each State to have a forecast communication coordi-
11 nator to receive and disseminate the forecasts and
12 information under subsection (e). Applications for
13 grants under this subsection shall be submitted in
14 such form and manner, and contain such informa-
15 tion, as the Under Secretary prescribes.

16 “(2) REQUIREMENTS.—For each State that re-
17 quests assistance under this subsection, the Under
18 Secretary shall—

19 “(A) provide funds to support an indi-
20 vidual in that State to—

21 “(i) serve as a liaison among the Na-
22 tional Oceanic and Atmospheric Adminis-
23 tration, other Federal departments and
24 agencies, the academic sector, the State,

1 and relevant interests within that State;

2 and

3 “(ii) receive the forecasts and infor-
4 mation under subsection (e) and dissemi-
5 nate the forecasts and information
6 throughout the State, including county and
7 tribal governments;

8 “(B) provide 1 grant for the purpose de-
9 scribed in paragraph (1); and

10 “(C) require matching funds from the
11 State, a university, a non-governmental organi-
12 zation, trade association, or the private sector.

13 “(3) LIMITATION.—Each grant under this sub-
14 section shall not exceed \$100,000.

15 “(g) COOPERATION FROM OTHER FEDERAL AGEN-
16 CIES.—Each Federal department and agency shall cooper-
17 ate as appropriate with the Under Secretary in carrying
18 out this section.

19 “(h) REPORTS.—

20 “(1) IN GENERAL.—Not later than 18 months
21 after the date of enactment of the Seasonal Fore-
22 casting Improvement Act, the Under Secretary shall
23 transmit to the Committee on Commerce, Science,
24 and Transportation of the Senate and the Com-

1 mittee on Science, Space, and Technology of the
2 House of Representatives a report, including—

3 “(A) an analysis of the how information
4 from the National Oceanic and Atmospheric
5 Administration on seasonal forecasts, as pro-
6 vided under subsection (e), is utilized in public
7 planning and preparedness;

8 “(B) specific plans and goals for the con-
9 tinued development of the seasonal forecasts
10 and related products described in subsection
11 (e); and

12 “(C) an identification of research, moni-
13 toring, observing, and forecasting requirements
14 to meet the goals described in subparagraph
15 (B).

16 “(2) CONSULTATION.—In developing the report
17 under paragraph (1), the Under Secretary shall con-
18 sult with relevant Federal, regional, State, tribal,
19 and local government agencies, research institutions,
20 and the private sector.

21 “(i) AUTHORIZATION OF APPROPRIATIONS.—There is
22 authorized to be appropriated to carry out this section
23 \$26,500,000 for each of fiscal years 2015 through 2020.

24 “(j) DEFINITIONS.—In this section:

1 “(1) SEASONAL.—The term ‘seasonal’ means
2 the time range between 2 weeks and 2 years.

3 “(2) UNDER SECRETARY.—The term ‘Under
4 Secretary’ means the Under Secretary of Commerce
5 for Oceans and Atmosphere.”.

6 **SEC. 3. UNITED STATES WEATHER RESEARCH PROGRAM.**

7 (a) IN GENERAL.—Section 108 of the Oceanic and
8 Atmospheric Administration Authorization Act of 1992
9 (15 U.S.C. 313 note) is amended—

10 (1) in subsection (a)—

11 (A) in paragraph (3), by striking “; and”
12 and inserting a semicolon;

13 (B) in paragraph (4), by striking the pe-
14 riod at the end and inserting a semicolon; and

15 (C) by inserting after paragraph (4) the
16 following:

17 “(5) provide to the Committee on Commerce,
18 Science, and Transportation of the Senate and the
19 Committee on Science, Space, and Technology of the
20 House of Representatives an annual report, includ-
21 ing—

22 “(A) a list of on-going research projects,
23 including project goals and a point of contact
24 for each project; and

1 “(B) the 5 projects related to observations,
2 weather, or seasonal-scale forecasts within the
3 Office of Oceanic and Atmospheric Research
4 that are closest to operationalization, including
5 for each project—

6 “(i) the potential benefit;

7 “(ii) any barrier to operationalization;

8 and

9 “(iii) the plan for operationalization,
10 including which line office will financially
11 support the project and how much the line
12 office intends to spend;

13 “(6) establish teams with staff from the Office
14 of Oceanic and Atmospheric Research and the Na-
15 tional Weather Service to oversee the
16 operationalization of research products developed by
17 the Office of Oceanic and Atmospheric Research
18 within the National Weather Service;

19 “(7) develop mechanisms for the Office of Oce-
20 anic and Atmospheric Research’s research priorities
21 to be informed by both the relevant line offices with-
22 in the National Oceanic and Atmospheric Adminis-
23 tration, the relevant user community, and the weath-
24 er enterprise, including by exchanging detailees be-

1 tween the Office of Oceanic and Atmospheric Re-
2 search and the line offices;

3 “(8) develop an internal mechanism to track
4 the progress of each research project within the Of-
5 fice of Oceanic and Atmospheric Research and
6 mechanisms to terminate a project that is not ade-
7 quately progressing;

8 “(9) for extramural research funded, the Office
9 of Oceanic and Atmospheric Research shall develop
10 and implement a system to track whether the
11 grant’s goals were accomplished;

12 “(10) provide facilities for products developed
13 by the Office of Oceanic and Atmospheric Research
14 to be tested in operational simulations, such as test
15 beds; and

16 “(11) encourage academic collaboration with
17 the Office of Oceanic and Atmospheric Research and
18 the National Weather Service by facilitating visiting
19 scholars.”; and

20 (2) in subsection (b), in the matter preceding
21 paragraph (1), by striking “Not later than 90 days
22 after the date of enactment of this Act, the” and in-
23 serting “The”.

24 (b) AUTHORIZATION OF APPROPRIATIONS.—There is
25 authorized to be appropriated to the National Oceanic and

1 Atmospheric Administration to carry out section 108 of
2 the Oceanic and Atmospheric Administration Authoriza-
3 tion Act of 1992 (15 U.S.C. 313 note), as amended by
4 subsection (a) of this section, \$10,000,000 for each of fis-
5 cal years 2015 through 2020.

6 **SEC. 4. NATIONAL OCEANIC AND ATMOSPHERIC ADMINIS-**
7 **TRATION SATELLITE DESIGN AND MANAGE-**
8 **MENT.**

9 (a) **SHORT-TERM MANAGEMENT OF ENVIRON-**
10 **MENTAL OBSERVATIONS.—**

11 (1) **IN GENERAL.—**The Administrator of the
12 National Oceanic and Atmospheric Administration
13 shall take immediate action to manage the expense
14 of environmental observations—

15 (A) by improving the procurement prac-
16 tices of the Administration with respect to polar
17 and geostationary satellites; and

18 (B) by assessing the operational viability of
19 alternate observation platforms, such as micro-
20 satellite constellations and ocean observing sys-
21 tems.

22 (2) **PROCUREMENT AND ACQUISITION OF POLAR**
23 **AND GEOSTATIONARY SATELLITES.—**

24 (A) **USE OF ESTABLISHED COMPETITIVE**
25 **PROCESSES.—**

1 (i) IN GENERAL.—Except as provided
2 in clause (ii) and notwithstanding any
3 other provision of law, the Administrator
4 of the National Oceanic and Atmospheric
5 Administration and the Administrator of
6 the National Aeronautics and Space Ad-
7 ministration shall use the process estab-
8 lished under section 3306 of title 41,
9 United States Code, to acquire all the
10 polar and geostationary weather satellites
11 for use by the National Oceanic and At-
12 mospheric Administration in a program
13 phase via a single procurement action.

14 (ii) APPLICABILITY.—Clause (i) shall
15 apply to procurement and acquisition oc-
16 ccurring in program phases beginning after
17 the date of enactment of this Act.

18 (iii) DEFINITION OF PROGRAM
19 PHASE.—In this subparagraph, the term
20 “program phase” means the planned ac-
21 quisition of a series of satellites sharing a
22 common architecture.

23 (B) ASSESSMENT OF PROCUREMENT AND
24 ACQUISITION OPPORTUNITIES.—

1 (i) IN GENERAL.—The Administrator
2 of the National Oceanic and Atmospheric
3 Administration shall ensure that in pro-
4 curing or acquiring polar and geo-
5 stationary weather satellites that the Ad-
6 ministrator only procures or acquires such
7 satellites in a manner that secures the best
8 value for each polar and geostationary pro-
9 gram of the Administration.

10 (ii) BEST VALUE.—In determining
11 whether a procurement or acquisition se-
12 cures the best value for a program, the Ad-
13 ministrator shall consider—

14 (I) integration with current
15 ground systems for receiving, proc-
16 essing, and disseminating data;

17 (II) integration of spacecraft and
18 sensing instruments;

19 (III) capacity to respond to
20 changes in requirements and credi-
21 bility of risk management; and

22 (IV) continuity and consistency
23 of capability.

24 (3) MICROSATELLITE CONSTELLATIONS.—

1 (A) IN GENERAL.—The Administrator
2 shall complete and operationalize the radio oc-
3 cultation program of record in effect on the day
4 before the date of the enactment of this Act—

5 (i) by deploying constellations of
6 microsatellites in both the equatorial and
7 polar orbits;

8 (ii) by integrating the resulting data
9 and research into all national operational
10 weather forecast models; and

11 (iii) by ensuring that the resulting
12 data is free and open to all communities.

13 (B) ANNUAL REPORTS.—Not less fre-
14 quently than once each year until the Adminis-
15 trator has completed and operationalized the
16 program described in subparagraph (A) pursu-
17 ant to such subparagraph, the Administrator
18 shall submit to Congress a report on the status
19 of the efforts of the Administrator to carry out
20 such subparagraph.

21 (4) INTEGRATION OF DATA AND RESEARCH
22 FROM INTEGRATED OCEAN OBSERVING SYSTEM INTO
23 OPERATIONAL FORECAST MODELS.—As soon as
24 practicable, the Administrator shall integrate data
25 and research from the Integrated Ocean Observing

1 System (IOOS) of the Administration into such
2 operational forecast models as the Administrator
3 considers appropriate.

4 (5) LIMITATION ON PROCUREMENT OF ADDI-
5 TIONAL POLAR ORBITING SATELLITES.—

6 (A) IN GENERAL.—The Administrator may
7 not procure any future program phase of the
8 Joint Polar Satellite System program of record
9 if the aggregate cost for such future program
10 phase that would be incurred by the Adminis-
11 tration exceeds the aggregate cost that was in-
12 curred by the Administration in procuring the
13 Joint Polar Satellite System 1 and 2.

14 (B) ADJUSTMENT FOR INFLATION.—In de-
15 termining aggregate costs under subparagraph
16 (A), the Administrator may adjust the aggre-
17 gate costs for inflation.

18 (6) SPECIFICATIONS FOR NEW SATELLITE SYS-
19 TEMS DETERMINED BY OPERATIONAL NEEDS.—In
20 developing specifications for any satellite systems of
21 the Administration to follow after the Joint Polar
22 Satellite System, Geostationary Operational Envi-
23 ronmental Satellites, and any other satellites of the
24 Administration in effect on the day before the date
25 of enactment of this Act, the Administrator shall en-

1 sure the specifications are determined to the extent
2 practicable by the recommendations of the reports
3 under subsection (b) of this section and section 6(d).

4 (b) INDEPENDENT STUDY ON FUTURE OF NATIONAL
5 OCEANIC AND ATMOSPHERIC ADMINISTRATION SAT-
6 ELLITE SYSTEMS.—

7 (1) AGREEMENT.—

8 (A) IN GENERAL.—The Administrator
9 shall enter into an agreement with the National
10 Academy of Sciences to perform the services
11 covered by this subsection.

12 (B) TIMING.—The Administrator shall
13 enter into the agreement described in subpara-
14 graph (A) before September 30, 2018.

15 (2) STUDY.—

16 (A) IN GENERAL.—Under an agreement
17 between the Administrator and the National
18 Academy of Sciences under this subsection, the
19 National Academy of Sciences shall conduct a
20 study on matters concerning the future of the
21 satellite systems of the Administration.

22 (B) ELEMENTS.—In conducting the study
23 under subparagraph (A), the National Academy
24 of Sciences shall—

1 (i) review the report of the Weather
2 Commission described in section 6(d), and
3 the 2017 update to the 2007 report by the
4 National Research Council entitled “Earth
5 Science and Applications From Space”;

6 (ii) develop recommendations on how
7 to make the satellite portfolio of the Ad-
8 ministration more robust and cost-effec-
9 tive;

10 (iii) assess the costs and benefits of
11 moving toward a constellation of many
12 small satellites, standardizing satellite bus
13 design, relying more on the purchasing of
14 data, or acquiring data from other sources
15 or methods;

16 (iv) identify the environmental obser-
17 vations that are essential to the perform-
18 ance of weather models, based on an as-
19 sessment of Federal, academic, and private
20 sector weather research, and the cost of
21 obtaining the environmental data;

22 (v) identify environmental observa-
23 tions that improve the quality of weather
24 forecasts, but are not essential for the gen-
25 eration of weather models in effect on the

1 day before the date of enactment of this
2 Act; and

3 (vi) develop recommendations on a
4 portfolio of environmental observations
5 that balances essential and quality-improv-
6 ing data, private and nonprivate sources,
7 and space- and Earth-based instruments.

8 (C) DEADLINE AND REPORT.—In carrying
9 out the study under subparagraph (A), the Na-
10 tional Academy of Sciences shall complete and
11 transmit to the Administrator a report con-
12 taining the findings of the National Academy of
13 Sciences with respect to the study not later
14 than 2 years after the date on which the Ad-
15 ministrator enters into an agreement with the
16 National Academy of Sciences under paragraph
17 (1)(A).

18 (D) COORDINATION OF EFFORTS.—In
19 order to avoid duplication, the National Acad-
20 emy of Sciences may coordinate its efforts to
21 draft the report under subparagraph (C) with
22 the preparation of the 2017 study entitled
23 “Earth Science and Applications from Space”.

24 (3) ALTERNATE CONTRACT ORGANIZATION.—

1 (Δ) IN GENERAL.—If the Administrator is
2 unable before the date prescribed in paragraph
3 (1)(B) to enter into an agreement described in
4 paragraph (1)(Δ) with the National Academy of
5 Sciences on terms acceptable to the Adminis-
6 trator, the Administrator shall seek to enter
7 into such an agreement with another appro-
8 priate organization that—

- 9 (i) is not part of the Government;
- 10 (ii) operates as a not-for-profit entity;
- 11 and
- 12 (iii) has expertise and objectivity com-
13 parable to that of the National Academy of
14 Sciences.

15 (B) TREATMENT.—If the Administrator
16 enters into an agreement with another organi-
17 zation as described in subparagraph (Δ), any
18 reference in this section to the National Acad-
19 emy of Sciences shall be treated as a reference
20 to the other organization.

21 (4) AUTHORIZATION OF APPROPRIATIONS.—
22 There is authorized to be appropriated to the Na-
23 tional Oceanic and Atmospheric Administration to
24 carry out this subsection \$1,000,000 for the period
25 of fiscal years 2017 through 2019.

1 **SEC. 5. DESIGNATION OF FEDERAL COORDINATOR FOR ME-**
2 **TEOROLOGY.**

3 The Director of the Office of Science and Technology
4 Policy shall designate a Federal Coordinator for Meteor-
5 ology.

6 **SEC. 6. ESTABLISHMENT OF WEATHER COMMISSION.**

7 (a) **ESTABLISHMENT.**—

8 (1) **IN GENERAL.**—The Federal Coordinator for
9 Meteorology, designated under section 5, shall estab-
10 lish, and the Administrator of the National Oceanic
11 and Atmospheric Administration acting through the
12 United States Weather Research Program of the
13 Administration shall support, a commission—

14 (A) to assess the weather forecasts and
15 forecast products provided by the National Oee-
16 anic and Atmospheric Administration; and

17 (B) to provide advice to Congress on mat-
18 ters relating to the highest priority weather
19 forecast needs of the community of users of the
20 forecasts and products described in subpara-
21 graph (A).

22 (2) **DESIGNATION.**—The commission estab-
23 lished under paragraph (1) shall be known as the
24 “Weather Commission” (in this section referred to
25 as the “Commission”).

26 (b) **MEMBERSHIP.**—

1 (1) COMPOSITION.—

2 (A) IN GENERAL.—The Commission shall
3 be composed of individuals selected by the Fed-
4 eral Coordinator from among leading experts
5 and innovators from each relevant stakeholder
6 group described in clauses (i) through (vii) of
7 subparagraph (B).

8 (B) NUMBER.—The Commission shall be
9 composed of no fewer than 14 members, includ-
10 ing—

11 (i) 2 representatives from State emer-
12 gency management agencies;

13 (ii) 2 representatives from State agri-
14 culture agencies;

15 (iii) 1 representative from the Native
16 American, Alaskan Native, or Native Ha-
17 waiian community;

18 (iv) 2 representatives from the private
19 aerospace industry;

20 (v) 2 representatives from the oper-
21 ational forecasting community;

22 (vi) 2 representatives from the aca-
23 demic community;

24 (vii) 1 representative from a profes-
25 sional society that focuses on meteorology;

1 (viii) the chair of the Science Advisory
2 Board of the National Oceanic and Atmos-
3 pheric Administration;

4 (ix) the chair of the National Science
5 Board;

6 (x) the Director of the Office of
7 Science and Technology Policy, *ex officio*;
8 and

9 (xi) the Administrator of the National
10 Oceanic and Atmospheric Administration,
11 *ex officio*.

12 (2) CO-CHAIR.—The Director of the Office of
13 Science and Technology Policy and the Adminis-
14 trator of the National Oceanic and Atmospheric Ad-
15 ministration shall serve as co-chairs of the Commis-
16 sion.

17 (c) DUTIES.—The duties of the Commission are as
18 follows:

19 (1) To assess the weather forecasts and fore-
20 cast products of the Administration as described in
21 subsection (a).

22 (2) To provide advice to Congress as described
23 in subsection (a).

24 (3) To obtain public comment on the weather
25 forecasts and products of the Administration that

1 the Administrator determines are the highest pri-
2 ority for users of such forecasts and products.

3 (d) REPORT.—

4 (1) IN GENERAL.—Not later than 2 years after
5 the date of enactment of this Act, the Commission
6 shall submit to Congress and make available to the
7 public on an Internet website a report on matters re-
8 lating to the activities of the Commission.

9 (2) CONTENTS.—The report submitted under
10 paragraph (1) shall include the following:

11 (A) The findings of the Commission with
12 respect to the review conducted under para-
13 graph (3) of subsection (e).

14 (B) The findings of the Commission with
15 respect to the public comments obtained under
16 paragraph (4) of such subsection

17 (C) The recommendations developed under
18 paragraph (5) of such subsection.

19 (e) EXEMPTION FROM FACCA.—The Commission
20 shall not be subject to the requirements of the Federal
21 Advisory Committee Act (5 U.S.C. App.).

22 (f) TERMINATION.—The Commission shall terminate
23 on the date that is 4 years after the date of enactment
24 of this Act.

1 (g) AUTHORIZATION OF APPROPRIATIONS.—There is
2 authorized to be appropriated to the National Oceanic and
3 Atmospheric Administration to carry out this section
4 \$1,000,000 for the period of fiscal years 2015 through
5 2019