

112TH CONGRESS  
2D SESSION

# S. 2154

To provide for research, monitoring, and observation of the Arctic Ocean  
and for other purposes.

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IN THE SENATE OF THE UNITED STATES

MARCH 5, 2012

Mr. BEGICH introduced the following bill; which was read twice and referred  
to the Committee on Finance

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## A BILL

To provide for research, monitoring, and observation of the  
Arctic Ocean 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 “Arctic Science Endow-  
5       ment Act”.

6       **SEC. 2. FINDINGS AND PURPOSE.**

7       (a) FINDINGS.—Congress makes the following find-  
8       ings:

9               (1) The United States is an Arctic Nation  
10       with—

1 (A) an approximately 700-mile border with  
2 the Arctic Ocean;

3 (B) more than 100,000,000 acres of land  
4 above the Arctic Circle; and

5 (C) an even broader area defined as Arctic  
6 by temperature, which includes the Bering Sea  
7 and Aleutian Islands.

8 (2) The Arctic region of the United States is  
9 home to an indigenous population that has subsisted  
10 for millennia on the abundance in marine mammals,  
11 fish, and wildlife, many of which are unique to the  
12 region.

13 (3) Temperatures in the United States Arctic  
14 region have warmed by 3 to 4 degrees Celsius over  
15 the past half-century, a rate of increase that is twice  
16 the global average.

17 (4) The Arctic ice pack is rapidly diminishing  
18 and thinning, and the National Oceanic and Atmos-  
19 pheric Administration estimates the Arctic Ocean  
20 may be ice free during summer months in as few as  
21 30 years.

22 (5) Such changes to the Arctic region are hav-  
23 ing a significant impact on the indigenous people of  
24 the Arctic, their communities and ecosystems, as

1 well as the marine mammals, fish, and wildlife upon  
2 which they depend.

3 (6) Such changes are opening new portions of  
4 the United States Arctic continental shelf to possible  
5 development for offshore oil and gas, commercial  
6 fishing, marine shipping, and tourism.

7 (7) Existing Federal research and science advi-  
8 sory programs focused on the environmental and so-  
9 cioeconomic impacts of a changing Arctic Ocean lack  
10 a cohesive, coordinated, and integrated approach and  
11 are not adequately coordinated with State, local,  
12 academic, and private-sector Arctic Ocean research  
13 programs.

14 (8) The lack of research integration and syn-  
15 thesis of findings of Arctic Ocean research has im-  
16 peded the progress of the United States and inter-  
17 national community in understanding climate change  
18 impacts and feedback mechanisms in the Arctic  
19 Ocean.

20 (9) An improved scientific understanding of the  
21 changing Arctic Ocean is critical to the development  
22 of appropriate and effective regional, national, and  
23 global climate change adaptation strategies.

24 (b) PURPOSE.—The purpose of this Act is to estab-  
25 lish a permanent environmental sentinel program to con-

1 duct research, monitoring, and observation activities in the  
2 Arctic Ocean—

3 (1) to promote and sustain a productive and re-  
4 silient marine, coastal, and estuarine ecosystem in  
5 the Arctic and the human uses of its natural re-  
6 sources through greater understanding of how the  
7 ecosystem works and monitoring and observation of  
8 its vital signs; and

9 (2) to track and evaluate the effectiveness of  
10 natural resource management in the Arctic in order  
11 to facilitate improved performance and adaptive  
12 management.

13 **SEC. 3. DEFINITIONS.**

14 In this Act:

15 (1) BOARD.—The term “Board” means the  
16 North Pacific Research Board established under sec-  
17 tion 401(e) of the Department of the Interior and  
18 Related Agencies Appropriations Act, 1998 (Public  
19 Law 105–1608).

20 (2) COMMISSION.—The term “Commission”  
21 means the Arctic Research Commission established  
22 under the Arctic Research and Policy Act of 1984  
23 (Public Law 98–373; 15 U.S.C. 4102).

1           (3) PROGRAM.—The term “Program” means  
 2           the Arctic Ocean Research, Monitoring, and Obser-  
 3           vation Program established by section 4(a).

4 **SEC. 4. ARCTIC OCEAN RESEARCH, MONITORING, AND OB-**  
 5 **SERVATION PROGRAM.**

6           (a) ESTABLISHMENT.—There is established an Arctic  
 7           Ocean Research, Monitoring, and Observation Program to  
 8           be administered by the Board with input and assistance  
 9           from the Commission.

10          (b) RESEARCH, MONITORING, AND OBSERVATION  
 11          ACTIVITIES.—The Program shall be an integrated, long-  
 12          term scientific research, monitoring, and observation pro-  
 13          gram consisting of—

14               (1) marine, coastal, and estuarine research, in-  
 15               cluding—

16                       (A) fisheries research;

17                       (B) research on the structure and function  
 18                       of the ecosystem and its food webs; and

19                       (C) research on the spatial distributions  
 20                       and status of fish, wildlife, and other popu-  
 21                       lations in the Arctic;

22               (2) marine, coastal, and estuarine ecosystem  
 23               monitoring and observation, including expansion of  
 24               the Alaska Ocean Observing System in the Arctic;  
 25               and

1           (3) marine, coastal, and estuarine research,  
 2           monitoring, observation, and modeling that supports  
 3           planning, environmental review, decisionmaking,  
 4           evaluation, impact and natural resources damage as-  
 5           sessment, and adaptive management with respect to  
 6           industrial and other human activities, such as ship-  
 7           ping, in the Arctic, environmental change, and their  
 8           interactive and cumulative effects in the Arctic.

9           (c) INITIAL PROJECTS.—In initiating the Program,  
 10          the Board shall make grants under subsection (e)—

11           (1) to support research and monitoring of Arc-  
 12           tic fisheries, including on the distributions and ecol-  
 13           ogy of Arctic cod and other forage fishes, for a pe-  
 14           riod of not less than 3 years;

15           (2) to support research and monitoring of Arc-  
 16           tic marine mammals, including their responses to  
 17           loss of sea ice habitats and reactions to disturbance,  
 18           for a period of not less than 3 years; and

19           (3) to establish the Alaska Ocean Observing  
 20           System in the Arctic Ocean such that it has suffi-  
 21           cient capacity to provide comprehensive data,  
 22           nowcasts and forecasts, and information products in  
 23           real time and near real time on physical, chemical,  
 24           and biological conditions and environmental change.

25          (d) ARCTIC OCEAN SCIENCE PLAN.—

1           (1) REQUIREMENT.—The Board and the Com-  
 2 mission shall jointly prepare a comprehensive, inte-  
 3 grated Arctic Ocean science plan.

4           (2) RECOGNITION AND COORDINATION WITH  
 5 OTHER SCIENCE.—The content of the plan required  
 6 by paragraph (1) shall be developed with recognition  
 7 of and in coordination with other science plans and  
 8 activities in the Arctic.

9           (3) INFORMED BY SYNTHESIS OF EXISTING  
 10 KNOWLEDGE.—Development of the plan required by  
 11 paragraph (1) shall be informed by a synthesis of  
 12 existing knowledge about the Arctic ecosystem, in-  
 13 cluding information about how the ecosystem func-  
 14 tions, individual and cumulative sources of eco-  
 15 system stress, how the ecosystem is changing, and  
 16 other relevant information.

17           (4) REVIEW.—

18           (A) INITIAL REVIEW BY NATIONAL RE-  
 19 SEARCH COUNCIL.—The Board shall submit the  
 20 initial plan required by paragraph (1) to the  
 21 National Research Council for review.

22           (B) PERIODIC REVIEW AND UPDATES.—  
 23 Not less frequently than once every 5 years  
 24 thereafter, the Board and the Commission shall,  
 25 in consultation with the National Research

1 Council, review the plan required by paragraph  
 2 (1) and update it as the Board and the Com-  
 3 mission consider necessary.

4 (5) USE.—The Board shall use the plan re-  
 5 quired by paragraph (1) as a basis for setting prior-  
 6 ities and awarding grants under subsection (e).

7 (e) GRANTS.—

8 (1) AUTHORITY.—Except as provided in para-  
 9 graph (2), the Board shall, under the Program,  
 10 award grants to carry out research, monitoring, and  
 11 observation activities described in subsections (b)  
 12 and (c).

13 (2) LIMITATION.—The North Pacific Research  
 14 Board may not award any grants under paragraph  
 15 (1) until the Board has prepared the plan required  
 16 by subsection (d)(1).

17 (3) CONDITIONS, CONSIDERATIONS, AND PRIOR-  
 18 ITIES.—When making grants to carry out the re-  
 19 search, monitoring, and observation activities de-  
 20 scribed in subsections (b) and (c), the Board shall—

21 (A) consider institutions located in the  
 22 Arctic and subarctic;

23 (B) place a priority on cooperative, inte-  
 24 grated long-term projects, designed to address



1 current or anticipated marine ecosystem or fish-  
 2 ery or wildlife management information needs;

3 (C) give priority to fully establishing and  
 4 operating the Alaska Ocean Observing System  
 5 in the Arctic Ocean, which may include future  
 6 support for cabled ocean observatories;

7 (D) recognize the value of local and tradi-  
 8 tional ecological knowledge, and, where appro-  
 9 priate, place a priority on research, monitoring,  
 10 and observation projects that incorporate local  
 11 and traditional ecological knowledge;

12 (E) ensure that research, monitoring, and  
 13 observation data collected by grantees of the  
 14 Program are made available to the public in a  
 15 timely fashion, pursuant to national and inter-  
 16 national protocols; and

17 (F) give due consideration to the annual  
 18 recommendations and review of the Commission  
 19 carried out under subsection (f).

20 (f) ANNUAL RECOMMENDATIONS AND REVIEW BY  
 21 ARCTIC RESEARCH COMMISSION.—Each year, the Com-  
 22 mission shall—

23 (1) recommend ongoing and future research,  
 24 monitoring, and observation priorities and strategies

1 to be carried out pursuant to subsections (b) and  
2 (c);

3 (2) undertake a written review of ongoing and  
4 recently concluded research, monitoring, and obser-  
5 vation activities undertaken pursuant to such sub-  
6 sections; and

7 (3) submit to the Board the recommendations  
8 required by paragraph (1) and the review required  
9 by paragraph (2).

10 **SEC. 5. ARCTIC OCEAN RESEARCH, MONITORING, AND OB-**  
11 **SERVATION TRUST FUND.**

12 (a) IN GENERAL.—Subchapter A of chapter 98 of the  
13 Internal Revenue Code of 1986 is amended by adding at  
14 the end the following new section:

15 **“SEC. 9512. ARCTIC OCEAN RESEARCH, MONITORING, AND**  
16 **OBSERVATION TRUST FUND.**

17 “(a) CREATION OF TRUST FUND.—There is estab-  
18 lished in the Treasury of the United States a trust fund  
19 to be known as the ‘Arctic Ocean Research, Monitoring,  
20 and Observation Trust Fund’, consisting of such amounts  
21 as may be appropriated or credited to such Trust Fund  
22 as provided in this section or section 9602(b).

23 “(b) TRANSFER TO TRUST FUND.—There are hereby  
24 appropriated to the Arctic Ocean Research, Monitoring,  
25 and Observation Trust Fund amounts equivalent to the

1 taxes received in the Treasury under section 4461 only  
2 to the extent attributable to the Arctic Ocean Research,  
3 Monitoring, and Observation Trust Fund financing rate.

4 “(c) EXPENDITURES.—

5 “(1) IN GENERAL.—Amounts in the Arctic  
6 Ocean Research, Monitoring, and Observation Trust  
7 Fund shall be available, without further appropria-  
8 tion, to carry out the Arctic Ocean Research, Moni-  
9 toring, and Observation Program established under  
10 section 4 of the Arctic Science Endowment Act in an  
11 amount equal to—

12 “(A) for each fiscal year beginning after  
13 the date of the enactment of this section and  
14 before the endowment achievement date,  
15 \$20,000,000, and

16 “(B) for each fiscal year beginning after  
17 the endowment achievement date, the amount  
18 credited to the Trust Fund under section  
19 9602(b) for such fiscal year.

20 “(2) ENDOWMENT ACHIEVEMENT DATE.—For  
21 purposes of this section, the endowment achievement  
22 date is the date the balance in the Arctic Ocean Re-  
23 search, Monitoring, and Observation Trust Fund  
24 first equals or exceeds \$400,000,000 after the date  
25 of the enactment of this section.”.

1 (b) CONFORMING AMENDMENT.—The table of sec-  
 2 tions for subchapter A of chapter 98 of the Internal Rev-  
 3 enue Code of 1986 is amended by adding at the end the  
 4 following new item:

“Sec. 9512. Arctic Ocean Research, Monitoring, and Observation Trust  
 Fund.”.

5 (c) ARCTIC OCEAN RESEARCH, MONITORING, AND  
 6 OBSERVATION TRUST FUND FINANCING RATE.—

7 (1) IN GENERAL.—Subsection (c) of section  
 8 4611 of the Internal Revenue Code of 1986 is  
 9 amended—

10 (A) in paragraph (1), by striking “and” at  
 11 the end of subparagraph (A), by striking the  
 12 period at the end of subparagraph (B) and in-  
 13 serting “, and”, and by adding at the end the  
 14 following new subparagraph:

15 “(C) the Arctic Ocean Research, Moni-  
 16 toring, and Observation Trust Fund financing  
 17 rate.”, and

18 (B) in paragraph (2), by striking “and” at  
 19 the end of subparagraph (A), by striking the  
 20 period at the end of subparagraph (B)(ii) and  
 21 inserting “, and”, and by adding at the end the  
 22 following new subparagraph:

23 “(C) the Arctic Ocean Research, Moni-  
 24 toring, and Observation Trust Fund financing

1 rate is, in the case of crude oil received or pe-  
2 troleum products entered—

3 “(i) before the endowment achieve-  
4 ment date (as determined under section  
5 9512(c)(2)), 1 cent a barrel, and

6 “(ii) on or after such endowment date,  
7 0 cents a barrel.”.

8 (2) EFFECTIVE DATE.—The amendments made  
9 by this subsection shall apply to crude oil received  
10 and petroleum products entered after the date of the  
11 enactment of this Act.

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