

## Calendar No. 318

116TH CONGRESS  
1ST SESSION

# S. 914

[Report No. 116–168]

To reauthorize the Integrated Coastal and Ocean Observation System Act of 2009, to clarify the authority of the Administrator of the National Oceanic and Atmospheric Administration with respect to post-storm assessments, and to require the establishment of a National Water Center, and for other purposes.

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### IN THE SENATE OF THE UNITED STATES

MARCH 27, 2019

Mr. WICKER (for himself, Ms. CANTWELL, and Mr. SULLIVAN) introduced the following bill; which was read twice and referred to the Committee on Commerce, Science, and Transportation

DECEMBER 5, 2019

Reported by Mr. WICKER, without amendment

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## A BILL

To reauthorize the Integrated Coastal and Ocean Observation System Act of 2009, to clarify the authority of the Administrator of the National Oceanic and Atmospheric Administration with respect to post-storm assessments, and to require the establishment of a National Water Center, 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; TABLE OF CONTENTS.**

4        (a) SHORT TITLE.—This Act may be cited as the  
 5        “Coordinated Ocean Observations and Research Act of  
 6        2019”.

7        (b) TABLE OF CONTENTS.—The table of contents for  
 8        this Act is as follows:

Sec. 1. Short title; table of contents.

TITLE I—REAUTHORIZATION OF INTEGRATED COASTAL AND  
OCEAN OBSERVATION SYSTEM ACT OF 2009

Sec. 101. Purposes.  
 Sec. 102. Definitions.  
 Sec. 103. Integrated Coastal and Ocean Observation System.  
 Sec. 104. Financing and agreements.  
 Sec. 105. Reports to Congress.  
 Sec. 106. Public-private use policy.  
 Sec. 107. Repeal of independent cost estimate.  
 Sec. 108. Authorization of appropriations.  
 Sec. 109. Reports and research plans.  
 Sec. 110. Strategic research plan.  
 Sec. 111. Stakeholder input on monitoring.  
 Sec. 112. Research activities.

TITLE II—NAMED STORM EVENT MODEL AND POST-STORM  
ASSESSMENTS

Sec. 201. Named Storm Event Model and post-storm assessments.

TITLE III—WATER PREDICTION AND FORECASTING

Sec. 301. Water prediction and forecasting.

1 **TITLE I—REAUTHORIZATION OF**  
2 **INTEGRATED COASTAL AND**  
3 **OCEAN OBSERVATION SYS-**  
4 **TEM ACT OF 2009**

5 **SEC. 101. PURPOSES.**

6 Section 12302 of the Integrated Coastal and Ocean  
7 Observation System Act of 2009 (33 U.S.C. 3601) is  
8 amended to read as follows:

9 **“SEC. 12302. PURPOSES.**

10 “The purposes of this subtitle are—

11 “(1) to establish and sustain a national inte-  
12 grated System of ocean, coastal, and Great Lakes  
13 observing systems, comprised of Federal and non-  
14 Federal components coordinated at the national level  
15 by the Council and at the regional level by a network  
16 of regional coastal observing systems, and that in-  
17 cludes in situ, remote, and other coastal and ocean  
18 observation and modeling capabilities, technologies,  
19 data management systems, communication systems,  
20 and product development systems, and is designed to  
21 address regional and national needs for ocean and  
22 coastal information, to gather specific data on key  
23 coastal, ocean, and Great Lakes variables, and to en-  
24 sure timely and sustained dissemination and avail-  
25 ability of these data—

1           “(A) to the public;

2           “(B) to support national defense, search  
3           and rescue operations, marine commerce, navi-  
4           gation safety, weather, climate, and marine  
5           forecasting, energy siting and production, eco-  
6           nomic development, ecosystem-based marine,  
7           coastal, and Great Lakes resource management,  
8           public safety, and public outreach and edu-  
9           cation;

10          “(C) to promote greater public awareness  
11          and stewardship of the Nation’s ocean, coastal,  
12          and Great Lakes resources and the general  
13          public welfare;

14          “(D) to provide easy access to ocean,  
15          coastal, and Great Lakes data and promote  
16          data sharing between Federal and non-Federal  
17          sources and promote public data sharing;

18          “(E) to enable advances in scientific un-  
19          derstanding to support the sustainable use, con-  
20          servation, management, and understanding of  
21          healthy ocean, coastal, and Great Lakes re-  
22          sources to ensure the Nation can respond to op-  
23          portunities to enhance food, economic, and na-  
24          tional security; and

1           “(F) to monitor and model changes in the  
2           oceans and Great Lakes, including with respect  
3           to chemistry, harmful algal blooms, hypoxia,  
4           water levels, and other phenomena;

5           “(2) to improve the Nation’s capability to meas-  
6           ure, track, observe, understand, and predict events  
7           related directly and indirectly to weather and cli-  
8           mate, natural climate variability, and interactions  
9           between the oceanic and atmospheric environments,  
10          including the Great Lakes;

11          “(3) to sustain, upgrade, and modernize the  
12          Nation’s ocean and Great Lakes observing infra-  
13          structure to detect changes and ensure delivery of  
14          reliable and timely information; and

15          “(4) to authorize activities—

16               “(A) to promote basic and applied research  
17               to develop, test, and deploy innovations and im-  
18               provements in coastal and ocean observation  
19               technologies, including advanced observing tech-  
20               nologies such as unmanned maritime systems  
21               needed to address critical data gaps, modeling  
22               systems, other scientific and technological capa-  
23               bilities to improve the understanding of weather  
24               and climate, ocean-atmosphere dynamics, global  
25               climate change, and the physical, chemical, and

1 biological dynamics of the ocean, coastal and  
 2 Great Lakes environments; and  
 3 “(B) to conserve healthy and restore de-  
 4 graded coastal ecosystems.”.

5 **SEC. 102. DEFINITIONS.**

6 Section 12303 of the Integrated Coastal and Ocean  
 7 Observation System Act of 2009 (33 U.S.C. 3602) is  
 8 amended—

9 (1) in paragraph (2), by striking “section  
 10 7902” and inserting “section 8932”;

11 (2) in paragraph (5), by striking “integrated  
 12 into the System and are managed through States,  
 13 regional organizations, universities, nongovernmental  
 14 organizations, or the private sector” and inserting  
 15 “managed through States, regional organizations,  
 16 universities, nongovernmental organizations, or the  
 17 private sector and integrated into the System by a  
 18 regional coastal ocean observing system, the Na-  
 19 tional Oceanic and Atmospheric Administration, or  
 20 the agencies participating in the Interagency Ocean  
 21 Observation Committee”;

22 (3) by amending paragraph (6) to read as fol-  
 23 lows:

24 “(6) REGIONAL COASTAL OBSERVING SYS-  
 25 TEM.—The term ‘regional coastal observing system’

1 means an organizational body that is certified or es-  
 2 tablished by contract or memorandum by the lead  
 3 Federal agency designated in section 12304(c)(3)  
 4 and coordinates State, Federal, local, tribal, and pri-  
 5 vate interests at a regional level with the responsi-  
 6 bility of engaging the private and public sectors in  
 7 designing, operating, and improving regional coastal  
 8 and ocean observing systems in order to ensure the  
 9 provision of data and information that meet the  
 10 needs of user groups from the respective regions.”;  
 11 and

12 (4) in paragraph (7), by striking “National  
 13 Oceanic and Atmospheric Administration” and in-  
 14 serting “Administrator”.

15 **SEC. 103. INTEGRATED COASTAL AND OCEAN OBSERVA-**  
 16 **TION SYSTEM.**

17 (a) SYSTEM ELEMENTS.—

18 (1) IN GENERAL.—Section 12304(b) of the In-  
 19 tegrated Coastal and Ocean Observation System Act  
 20 of 2009 (33 U.S.C. 3603(b)) is amended by striking  
 21 paragraph (1) and inserting the following:

22 “(1) IN GENERAL.—In order to fulfill the pur-  
 23 poses of this subtitle, the System shall be national  
 24 in scope and consist of—

1           “(A) Federal assets to fulfill national and  
2 international observation missions and prior-  
3 ities;

4           “(B) non-Federal assets, including a net-  
5 work of regional coastal observing systems iden-  
6 tified under subsection (c)(4), to fulfill regional  
7 and national observation missions and prior-  
8 ities;

9           “(C) observing, modeling, data manage-  
10 ment, and communication systems for the time-  
11 ly integration and dissemination of data and in-  
12 formation products from the System, including  
13 reviews of data collection procedures across re-  
14 gions and programs to make recommendations  
15 for data collection standards across the System  
16 to meet national ocean, coastal, and Great  
17 Lakes observation, applied research, and weath-  
18 er forecasting needs;

19           “(D) a product development system to  
20 transform observations into products in a for-  
21 mat that may be readily used and understood;  
22 and

23           “(E) a research and development program  
24 conducted under the guidance of the Council,  
25 consisting of—



1 “(i) basic and applied research and  
2 technology development—

3 “(I) to improve understanding of  
4 coastal and ocean systems and their  
5 relationships to human activities; and

6 “(II) to ensure improvement of  
7 operational assets and products, in-  
8 cluding related infrastructure, observ-  
9 ing technologies such as unmanned  
10 maritime systems, and information  
11 and data processing and management  
12 technologies;

13 “(ii) an advanced observing tech-  
14 nology development program to fill gaps in  
15 technology;

16 “(iii) large scale computing resources  
17 and research to advance modeling of coast-  
18 al, ocean, and Great Lakes processes;

19 “(iv) models to improve regional  
20 weather forecasting capabilities and re-  
21 gional weather forecasting products; and

22 “(v) reviews of data collection proce-  
23 dures across regions and programs to  
24 make recommendations for data collection  
25 standards across the System to meet na-

1           tional ocean, coastal, and Great Lakes ob-  
2           servation, applied research, and weather  
3           forecasting needs.”.

4           (2)    AVAILABILITY    OF    DATA.—Section  
5           12304(b)(3) of such Act (33 U.S.C. 3603(b)(3)) is  
6           amended by inserting “for research and for use in  
7           the development of products to address societal  
8           needs” before the period at the end.

9           (b) POLICY OVERSIGHT, ADMINISTRATION, AND RE-  
10          GIONAL COORDINATION.—Section 12304(c) of the Inte-  
11          grated Coastal and Ocean Observation System Act of  
12          2009 (33 U.S.C. 3603(c)) is amended by striking para-  
13          graphs (2), (3), and (4), and inserting the following:

14               “(2) INTERAGENCY OCEAN OBSERVATION COM-  
15          MITTEE.—

16               “(A) ESTABLISHMENT.—The Council shall  
17               establish or designate a committee, which shall  
18               be known as the Interagency Ocean Observation  
19               Committee.

20               “(B) DUTIES.—The Interagency Ocean  
21               Observation Committee shall—

22               “(i) prepare annual and long-term  
23               plans for consideration and approval by the  
24               Council for the integrated design, oper-  
25               ation, maintenance, enhancement, and ex-

1           pansion of the System to meet the objec-  
2           tives of this subtitle and the System Plan;

3           “(ii) develop and transmit to Con-  
4           gress, along with the budget submitted by  
5           the President to Congress pursuant to sec-  
6           tion 1105(a) of title 31, United States  
7           Code, an annual coordinated, comprehen-  
8           sive budget—

9                   “(I) to operate all elements of  
10                  the System identified in subsection  
11                  (b); and

12                   “(II) to ensure continuity of data  
13                  streams from Federal and non-Fed-  
14                  eral assets;

15           “(iii) establish requirements for obser-  
16           vation data variables to be gathered by  
17           both Federal and non-Federal assets and  
18           identify, in consultation with regional  
19           coastal observing systems, priorities for  
20           System observations;

21           “(iv) establish and define protocols  
22           and standards for System data processing,  
23           management, collection, configuration  
24           standards, formats, and communication for

1 new and existing assets throughout the  
2 System network;

3 “(v) develop contract requirements for  
4 each regional coastal observing system—

5 “(I) to establish eligibility for in-  
6 tegration into the System;

7 “(II) to ensure compliance with  
8 all applicable standards and protocols  
9 established by the Council; and

10 “(III) to ensure that regional ob-  
11 servations are integrated into the Sys-  
12 tem on a sustained basis;

13 “(vi) identify gaps in observation cov-  
14 erage or needs for capital improvements of  
15 both Federal assets and non-Federal as-  
16 sets;

17 “(vii) subject to the availability of ap-  
18 propriations, establish through 1 or more  
19 Federal agencies participating in the Inter-  
20 agency Ocean Observation Committee, in  
21 consultation with the System advisory com-  
22 mittee established under subsection (d), a  
23 competitive matching grant or other pro-  
24 grams—

1 “(I) to promote intramural and  
 2 extramural research and development  
 3 of new, innovative, and emerging ob-  
 4 servation technologies including test-  
 5 ing and field trials; and

6 “(II) to facilitate the migration  
 7 of new, innovative, and emerging sci-  
 8 entific and technological advances  
 9 from research and development to  
 10 operational deployment;

11 “(viii) periodically—

12 “(I) review the System Plan; and

13 “(II) submit to the Council such  
 14 recommendations as the Interagency  
 15 Ocean Observation Committee may  
 16 have for improvements to the System  
 17 Plan;

18 “(ix) ensure collaboration among Fed-  
 19 eral agencies participating in the Inter-  
 20 agency Ocean Observation Committee; and

21 “(x) perform such additional duties as  
 22 the Council may delegate.

23 “(3) LEAD FEDERAL AGENCY.—

24 “(A) IN GENERAL.—The National Oceanic  
 25 and Atmospheric Administration shall function

1 as the lead Federal agency for the implementa-  
2 tion and administration of the System.

3 “(B) CONSULTATION REQUIRED.—In car-  
4 rying out this paragraph, the Administrator  
5 shall consult with the Council, the Interagency  
6 Ocean Observation Committee, other Federal  
7 agencies that maintain portions of the System,  
8 and the regional coastal observing systems.

9 “(C) REQUIREMENTS.—In carrying out  
10 this paragraph, the Administrator shall—

11 “(i) establish and operate an Inte-  
12 grated Ocean Observing System Program  
13 Office within the National Oceanic and At-  
14 mospheric Administration that—

15 “(I) utilizes, to the extent nec-  
16 essary, personnel from Federal agen-  
17 cies participating in the Interagency  
18 Ocean Observation Committee; and

19 “(II) oversees daily operations  
20 and coordination of the System;

21 “(ii) implement policies, protocols,  
22 and standards approved by the Council  
23 and delegated by the Interagency Ocean  
24 Observation Committee;

1 “(iii) promulgate program guide-  
2 lines—

3 “(I) to certify and integrate re-  
4 gional associations into the System;  
5 and

6 “(II) to provide regional coastal  
7 and ocean observation data that meet  
8 the needs of user groups from the re-  
9 spective regions;

10 “(iv) have the authority to enter into  
11 and oversee contracts, leases, grants, or co-  
12 operative agreements with non-Federal as-  
13 sets, including regional coastal observing  
14 systems, to support the purposes of this  
15 subtitle on such terms as the Adminis-  
16 trator deems appropriate;

17 “(v) implement and maintain a merit-  
18 based, competitive funding process to sup-  
19 port non-Federal assets, including the de-  
20 velopment and maintenance of a national  
21 network of regional coastal observing sys-  
22 tems, and develop and implement a process  
23 for the periodic review and evaluation of  
24 the regional associations;

1 “(vi) provide opportunities for com-  
2 petitive contracts and grants for dem-  
3 onstration projects to design, develop, inte-  
4 grate, deploy, maintain, and support com-  
5 ponents of the System;

6 “(vii) establish and maintain efficient  
7 and effective administrative procedures for  
8 the timely allocation of funds among con-  
9 tractors, grantees, and non-Federal assets,  
10 including regional coastal observing sys-  
11 tems;

12 “(viii) develop and implement a proc-  
13 ess for the periodic review and evaluation  
14 of the regional coastal observing systems;

15 “(ix) formulate an annual process by  
16 which gaps in observation coverage or  
17 needs for capital improvements of Federal  
18 assets and non-Federal assets of the Sys-  
19 tem are—

20 “(I) identified by the regional as-  
21 sociations described in the System  
22 plan, the Administrator, or other  
23 members of the System; and

24 “(II) submitted to the Inter-  
25 agency Ocean Observation Committee;



1 “(x) develop and be responsible for a  
2 data management and communication sys-  
3 tem, in accordance with standards and  
4 protocols established by the Interagency  
5 Ocean Observation Committee, by which  
6 all data collected by the System regarding  
7 ocean and coastal waters of the United  
8 States including the Great Lakes, are proc-  
9 essed, stored, integrated, and made avail-  
10 able to all end-user communities;

11 “(xi) not less frequently than once  
12 each year, submit to the Interagency  
13 Ocean Observation Committee a report on  
14 the accomplishments, operational needs,  
15 and performance of the System to con-  
16 tribute to the annual and long-term plans  
17 prepared pursuant to paragraph (2)(B)(i);

18 “(xii) develop and periodically update  
19 a plan to efficiently integrate into the Sys-  
20 tem new, innovative, or emerging tech-  
21 nologies that have been demonstrated to be  
22 useful to the System and which will fulfill  
23 the purposes of this subtitle and the Sys-  
24 tem Plan; and

1           “(xiii) work with users and regional  
 2           associations to develop products to enable  
 3           real-time data sharing for decision makers,  
 4           including with respect to weather fore-  
 5           casting and modeling, search and rescue  
 6           operations, corrosive seawater forecasts,  
 7           water quality monitoring and communica-  
 8           tion, and harmful algal bloom forecasting.

9           “(4) REGIONAL COASTAL OBSERVING SYS-  
 10       TEMS.—

11           “(A) IN GENERAL.—A regional coastal ob-  
 12       serving system described in the System Plan as  
 13       a regional association may not be certified or  
 14       established under this subtitle unless it—

15           “(i) has been or shall be certified or  
 16       established by contract or agreement by  
 17       the Administrator;

18           “(ii) meets—

19           “(I) the certification standards  
 20       and compliance procedure guidelines  
 21       issued by the Administrator; and

22           “(II) the information needs of  
 23       user groups in the region while adher-  
 24       ing to national standards;

1 “(iii) demonstrates an organizational  
2 structure, that under funding limitations is  
3 capable of—

4 “(I) gathering required System  
5 observation data;

6 “(II) supporting and integrating  
7 all aspects of coastal and ocean ob-  
8 serving and information programs  
9 within a region; and

10 “(III) reflecting the needs of  
11 State, local, and tribal governments,  
12 commercial interests, and other users  
13 and beneficiaries of the System and  
14 other requirements specified under  
15 this subtitle and the System Plan;

16 “(iv) identifies—

17 “(I) gaps in observation coverage  
18 needs for capital improvements of  
19 Federal assets and non-Federal assets  
20 of the System; and

21 “(II) other recommendations to  
22 assist in the development of the an-  
23 nual and long-term plans prepared  
24 pursuant to paragraph (2)(B)(i) and  
25 transmits such information to the

1 Interagency Ocean Observation Com-  
2 mittee through the Program Office es-  
3 tablished under paragraph (3)(C)(i);

4 “(v) develops and operates under a  
5 strategic plan that will ensure the efficient  
6 and effective administration of programs  
7 and assets to support daily data observa-  
8 tions for integration into the System, pur-  
9 suant to the standards approved by the  
10 Council;

11 “(vi) works cooperatively with govern-  
12 mental and nongovernmental entities at all  
13 levels to identify and provide information  
14 products of the System for multiple users  
15 within the service area of the regional  
16 coastal observing system; and

17 “(vii) complies with all financial over-  
18 sight requirements established by the Ad-  
19 ministrator, including requirements relat-  
20 ing to audits.

21 “(B) PARTICIPATION.—For the purposes  
22 of this subtitle, employees of Federal agencies  
23 are permitted to be members of the governing  
24 body for the regional coastal observing systems

1           and may participate in the functions of the re-  
2           gional coastal ocean observing systems.”.

3           (c)   SYSTEM   ADVISORY   COMMITTEE.—Section  
4   12304(d) of the Integrated Coastal and Ocean Observa-  
5   tion System Act of 2009 (33 U.S.C. 3603(d)) is amend-  
6   ed—

7           (1) in paragraph (1), by striking “or the Inter-  
8   agency Ocean Observing Committee.” and inserting  
9   “or the Council under this subtitle.”; and

10          (2) in paragraph (2)—

11               (A) in subparagraph (A), by inserting “,  
12   data sharing,” after “data management”;

13               (B) in subparagraph (C), by striking  
14   “and” at the end;

15               (C) by striking subparagraph (D) and in-  
16   serting the following:

17                   “(D) additional priorities, including—

18                       “(i) a national surface current map-  
19   ping network designed to improve fine  
20   scale sea surface mapping using high fre-  
21   quency radar technology and other emerg-  
22   ing technologies to address national prior-  
23   ities, including Coast Guard search and  
24   rescue operation planning and harmful

1           algal bloom forecasting and detection  
2           that—

3                   “(I) is comprised of existing high  
4                   frequency radar and other sea surface  
5                   current mapping infrastructure oper-  
6                   ated by national programs and re-  
7                   gional coastal observing systems;

8                   “(II) incorporates new high fre-  
9                   quency radar assets or other fine scale  
10                  sea surface mapping technology as-  
11                  sets, and other assets needed to fill  
12                  gaps in coverage on United States  
13                  coastlines; and

14                  “(III) follows a deployment plan  
15                  that prioritizes closing gaps in high  
16                  frequency radar infrastructure in the  
17                  United States, starting with areas  
18                  demonstrating significant sea surface  
19                  current data needs, especially in areas  
20                  where additional data will improve  
21                  Coast Guard search and rescue mod-  
22                  els;

23                  “(ii) fleet acquisition for unmanned  
24                  maritime systems for deployment and data

1 integration to fulfill the purposes of this  
2 subtitle;

3 “(iii) an integrative survey program  
4 for application of unmanned maritime sys-  
5 tems to the real-time or near real-time col-  
6 lection and transmission of sea floor, water  
7 column, and sea surface data on biology,  
8 chemistry, geology, physics, and hydrog-  
9 raphy;

10 “(iv) remote sensing and data assimi-  
11 lation to develop new analytical methodolo-  
12 gies to assimilate data from the System  
13 into hydrodynamic models;

14 “(v) integrated, multi-State moni-  
15 toring to assess sources, movement, and  
16 fate of sediments in coastal regions; and

17 “(vi) a multi-region marine sound  
18 monitoring system to be—

19 “(I) planned in consultation with  
20 the Interagency Ocean Observation  
21 Committee, the National Oceanic and  
22 Atmospheric Administration, the De-  
23 partment of the Navy, and academic  
24 research institutions; and

1 “(II) developed, installed, and op-  
2 erated in coordination with the Na-  
3 tional Oceanic and Atmospheric Ad-  
4 ministration, the Department of the  
5 Navy, and academic research institu-  
6 tions; and

7 “(E) any other purpose identified by the  
8 Administrator or the Council.”;

9 (D) in paragraph (3)(B), by inserting  
10 “The Administrator may stagger the terms of  
11 the System advisory committee members.” be-  
12 fore “Members”; and

13 (E) in paragraph (4)—

14 (i) in subparagraph (A), by striking  
15 “and the Interagency Ocean Observing  
16 Committee”; and

17 (ii) in subparagraph (C), by striking  
18 “Observing” and inserting “Observation”.

19 (d) CIVIL LIABILITY.—Section 12304(e) of the Inte-  
20 grated Coastal and Ocean Observation System Act of  
21 2009 (33 U.S.C. 3603(e)) is amended—

22 (1) by striking “information coordination enti-  
23 ty” each place it appears and inserting “coastal ob-  
24 serving system”; and



1           (2) by striking “contract, lease, grant, or coop-  
 2           erative agreement under subsection (c)(3)(D)” and  
 3           inserting “a memorandum of agreement of certifi-  
 4           cation under subsection (c)(3)(C)(iii)”.

5           (e) CONFORMING AMENDMENTS.—The Integrated  
 6 Coastal and Ocean Observation System Act of 2009 (33  
 7 U.S.C. 3601 et seq.) is amended by striking “regional in-  
 8 formation coordination entities” each place it appears and  
 9 inserting “regional ocean observing systems”.

10 **SEC. 104. FINANCING AND AGREEMENTS.**

11           Section 12305(a) of the Integrated Coastal and  
 12 Ocean Observation System Act of 2009 (33 U.S.C.  
 13 3604(a)) is amended to read as follows:

14           “(a) IN GENERAL.—The Secretary of Commerce may  
 15 execute an agreement, on a reimbursable or nonreimburs-  
 16 able basis, with any State or subdivision thereof, any Fed-  
 17 eral agency, any public or private organization, or any in-  
 18 dividual to carry out activities under this subtitle.”.

19 **SEC. 105. REPORTS TO CONGRESS.**

20           Section 12307 of the Integrated Coastal and Ocean  
 21 Observation System Act of 2009 (33 U.S.C. 3606) is  
 22 amended to read as follows:

23 **“SEC. 12307. REPORT TO CONGRESS.**

24           “(a) REQUIREMENT.—Not later than 2 years after  
 25 March 30, 2020, and every 5 years thereafter, the Admin-

1   istrator shall prepare, and the President acting through  
2   the Council shall approve and transmit to Congress, a re-  
3   port on progress made in implementing this subtitle.

4       “(b) CONTENTS.—Each report required under sub-  
5   section (a) shall include—

6           “(1) a description of activities carried out under  
7       this subtitle and the System Plan;

8           “(2) an evaluation of the effectiveness of the  
9       System, including an evaluation of progress made by  
10      the Council to achieve the goals identified under the  
11      System Plan;

12          “(3) the identification of Federal and non-Fed-  
13      eral assets as determined by the Council that have  
14      been integrated into the System, including assets es-  
15      sential to the gathering of required observation data  
16      variables necessary to meet the respective missions  
17      of Council agencies;

18          “(4) a review of procurements, planned or initi-  
19      ated, by each department or agency represented on  
20      the Council to enhance, expand, or modernize the  
21      observation capabilities and data products provided  
22      by the System, including data management and  
23      communication subsystems;

1           “(5) a summary of the existing gaps in observa-  
2           tion infrastructure and monitoring data collection,  
3           including—

4                   “(A) priorities considered by the System  
5           advisory committee;

6                   “(B) the national sea surface current map-  
7           ping network;

8                   “(C) coastal buoys;

9                   “(D) ocean chemistry monitoring;

10                  “(E) marine sound monitoring; and

11                  “(F) unmanned maritime systems tech-  
12           nology gaps;

13           “(6) an assessment regarding activities to inte-  
14           grate Federal and non-Federal assets, nationally and  
15           on the regional level, and discussion of the perform-  
16           ance and effectiveness of regional coastal observing  
17           systems to coordinate regional observation oper-  
18           ations;

19           “(7) a description of benefits of the program to  
20           users of data products resulting from the System  
21           (including the general public, industries, scientists,  
22           resource managers, emergency responders, policy  
23           makers, and educators);

24           “(8) recommendations concerning—

25                   “(A) modifications to the System; and

1                   “(B) funding levels for the System in sub-  
2                   sequent fiscal years; and

3                   “(9) the results of a periodic external inde-  
4                   pendent programmatic audit of the System.”.

5 **SEC. 106. PUBLIC-PRIVATE USE POLICY.**

6           Section 12308 of the Integrated Coastal and Ocean  
7 Observation System Act of 2009 (33 U.S.C. 3607) is  
8 amended to read as follows:

9 **“SEC. 12308. PUBLIC-PRIVATE USE POLICY.**

10           “The Council shall maintain a policy that defines  
11 processes for making decisions about the roles of the Fed-  
12 eral Government, the States, regional coastal observing  
13 systems, the academic community, and the private sector  
14 in providing to end-user communities environmental infor-  
15 mation, products, technologies, and services related to the  
16 System. The Administrator shall ensure that National  
17 Oceanic and Atmospheric Administration adheres to the  
18 decision making process developed by the Council regard-  
19 ing the roles of the Federal Government, the States, the  
20 regional coastal observing systems, the academic commu-  
21 nity, and the private sector in providing end-user commu-  
22 nities environmental information, data products, tech-  
23 nologies, and services related to the System.”.

1 **SEC. 107. REPEAL OF INDEPENDENT COST ESTIMATE.**

2 (a) IN GENERAL.—The Integrated Coastal and  
3 Ocean Observation System Act of 2009 (33 U.S.C. 3601  
4 et seq.) is amended by striking section 12309 (33 U.S.C.  
5 3608).

6 (b) TABLE OF CONTENTS AMENDMENT.—The table  
7 of contents in section 1(b) of the Omnibus Public Land  
8 Management Act of 2009 (Public Law 111–11; 123 Stat.  
9 991) is amended by striking the item related to section  
10 12309.

11 **SEC. 108. AUTHORIZATION OF APPROPRIATIONS.**

12 Section 12311 of the Integrated Coastal and Ocean  
13 Observation System Act of 2009 (33 U.S.C. 3610) is  
14 amended to read as follows:

15 **“SEC. 12311. AUTHORIZATION OF APPROPRIATIONS.**

16 “To fulfill the purposes set forth in section 12302  
17 and to support activities identified in the annual coordi-  
18 nated System budget developed by the Interagency Ocean  
19 Observation Committee, there are authorized to be appro-  
20 priated to the Secretary of Commerce—

21 “(1) \$54,900,000 for fiscal year 2020;

22 “(2) \$61,600,000 for fiscal year 2021;

23 “(3) \$68,300,000 for fiscal year 2022;

24 “(4) \$75,000,000 for fiscal year 2023; and

25 “(5) \$81,700,000 for fiscal year 2024.”.

1 **SEC. 109. REPORTS AND RESEARCH PLANS.**

2 Section 12404(c) of the Federal Ocean Acidification  
3 Research And Monitoring Act of 2009 (33 U.S.C.  
4 3703(c)) is amended by adding at the end the following:

5 “(4) ECONOMIC VULNERABILITY REPORT.—

6 “(A) IN GENERAL.—Not later than 2 years  
7 after the date of the enactment of the Coordi-  
8 nated Ocean Observations and Research Act of  
9 2019, and every 6 years thereafter, the Sub-  
10 committee shall transmit to the appropriate  
11 committees of Congress a report that—

12 “(i) is named the ‘Ocean Chemistry  
13 Coastal Community Vulnerability Assess-  
14 ment’;

15 “(ii) identifies gaps in ocean acidifica-  
16 tion monitoring by public, academic, and  
17 private assets in the network of regional  
18 coastal observing systems;

19 “(iii) identifies geographic areas which  
20 have gaps in ocean acidification research;

21 “(iv) identifies United States coastal  
22 communities, including fishing commu-  
23 nities, low-population rural communities,  
24 tribal and subsistence communities, and is-  
25 land communities, that may be impacted  
26 by ocean acidification;

1           “(v) identifies impacts of changing  
2           ocean carbonate chemistry on the commu-  
3           nities described in clause (iv), including  
4           impacts from changes in ocean and coastal  
5           marine resources that are not managed by  
6           the Federal Government;

7           “(vi) identifies gaps in understanding  
8           of the impacts of ocean acidification on  
9           economically or commercially important  
10          species, particularly those which support  
11          United States commercial, recreational,  
12          and tribal fisheries and aquaculture;

13          “(vii) identifies habitats that may be  
14          particularly vulnerable to corrosive sea  
15          water, including areas experiencing mul-  
16          tiple stressors such as hypoxia, sedimenta-  
17          tion, and harmful algal blooms;

18          “(viii) identifies areas in which exist-  
19          ing National Integrated Coastal and Ocean  
20          Observation System assets, including un-  
21          manned maritime systems, may be lever-  
22          aged as platforms for the deployment of  
23          new sensors or other applicable observing  
24          technologies; and

1 “(ix) is written in collaboration with  
 2 the agencies responsible for carrying out  
 3 this subtitle.

4 “(B) FORM OF REPORT.—

5 “(i) INITIAL REPORT.—The initial re-  
 6 port required under subparagraph (A)  
 7 shall include the information described in  
 8 clauses (i) through (ix) on a national level.

9 “(ii) SUBSEQUENT REPORTS.—Each  
 10 report required under subparagraph (A)  
 11 after the initial report—

12 “(I) may describe the informa-  
 13 tion described in clauses (i) through  
 14 (ix) on a national level; or

15 “(II) may consist of separate re-  
 16 ports for each region of the National  
 17 Oceanic and Atmospheric Administra-  
 18 tion.

19 “(iii) REGIONAL REPORTS.—If the  
 20 Subcommittee opts to prepare a report re-  
 21 quired under subparagraph (A) as separate  
 22 regional reports under clause (ii)(II), the  
 23 Subcommittee shall submit a report for  
 24 each region of the National Oceanic and  
 25 Atmospheric Administration not less fre-



1 frequently than once during each 6-year re-  
 2 porting period.

3 “(C) APPROPRIATE COMMITTEES OF CON-  
 4 GRESS DEFINED.—In this paragraph and in  
 5 paragraph (5), the term ‘appropriate commit-  
 6 tees of Congress’ means the Committee on  
 7 Commerce, Science, and Transportation of the  
 8 Senate, the Committee on Science, Space, and  
 9 Technology of the House of Representatives,  
 10 and the Committee on Natural Resources of the  
 11 House of Representatives.

12 “(5) MONITORING PRIORITIZATION PLAN.—Not  
 13 later than 180 days after the date of the submission  
 14 of the initial report under paragraph (4)(A), the  
 15 Subcommittee shall transmit to the appropriate com-  
 16 mittees of Congress a report that develops a plan to  
 17 deploy new sensors or other applicable observing  
 18 technologies such as unmanned maritime systems—

19 “(A) based on such initial report;

20 “(B) prioritized by—

21 “(i) the threat to coastal economies  
 22 and ecosystems;

23 “(ii) gaps in data; and

24 “(iii) research needs; and

1           “(C) that leverage existing platforms,  
2           where possible.”.

3 **SEC. 110. STRATEGIC RESEARCH PLAN.**

4           (a) CONTENTS.—Section 12405(b) of the Federal  
5 Ocean Acidification Research And Monitoring Act of 2009  
6 (33 U.S.C. 3704(b)) is amended—

7           (1) in paragraph (8), by striking “and” at the  
8           end;

9           (2) in paragraph (9), by striking the period at  
10          the end and inserting “; and”; and

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

12           “(10) make recommendations for research to be  
13          conducted, including in the social sciences and eco-  
14          nomics, to address the key knowledge gaps identified  
15          in the Ocean Chemistry Coastal Community Vulner-  
16          ability Assessment conducted under section  
17          12404(c)(4).”.

18          (b) PROGRAM ELEMENTS.—Section 12405(c) of the  
19 Federal Ocean Acidification Research And Monitoring Act  
20 of 2009 (33 U.S.C. 3704(c)) is amended by adding at the  
21 end the following:

22           “(6) Research to understand the combined im-  
23          pact of changes in ocean chemistry and other  
24          stressors, including sediment delivery, hypoxia, and  
25          harmful algal blooms, on each other and on living

1 marine resources, including aquaculture and coastal  
2 ecosystems.

3 “(7) Applied research to identify adaptation  
4 strategies for species impacted by changes in ocean  
5 chemistry including vegetation-based systems, shell  
6 recycling, species and genetic diversity, applied tech-  
7 nologies, aquaculture methodologies, and manage-  
8 ment recommendations.”.

9 (c) REVISED STRATEGIC RESEARCH PLAN.—Not  
10 later than one year after the date of the enactment of this  
11 Act, the Joint Subcommittee on Ocean Science and Tech-  
12 nology of the National Science and Technology Council  
13 shall submit to Congress a revised strategic research plan  
14 under section 12405 of the Federal Ocean Acidification  
15 Research And Monitoring Act of 2009 (33 U.S.C. 3704)  
16 that includes the matters required by the amendments  
17 made by this section.

18 **SEC. 111. STAKEHOLDER INPUT ON MONITORING.**

19 Section 12406(a) of the Federal Ocean Acidification  
20 Research And Monitoring Act of 2009 (33 U.S.C.  
21 3705(a)) is amended—

22 (1) in paragraph (2), by striking “and” at the  
23 end;

24 (2) in paragraph (3), by striking the period at  
25 the end and inserting “; and”; and

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

2           “(4) includes an ongoing mechanism that allows  
3       industry, coastal stakeholders, fishery management  
4       councils and commissions, non-Federal resource  
5       managers, and scientific experts to provide input on  
6       monitoring needs that are necessary to support on  
7       the ground management, decision making, and adap-  
8       tation related to ocean acidification.”.

9   **SEC. 112. RESEARCH ACTIVITIES.**

10       Section 12407(a) of the Federal Ocean Acidification  
11   Research And Monitoring Act of 2009 (33 U.S.C.  
12   3706(a)) is amended to read as follows:

13       “(a) RESEARCH ACTIVITIES.—The Director of the  
14   National Science Foundation shall continue to carry out  
15   research activities on ocean acidification which shall sup-  
16   port competitive, merit-based, peer-reviewed proposals for  
17   research, observation, and monitoring of ocean acidifica-  
18   tion and its impacts, including—

19           “(1) impacts on marine organisms, including  
20       species cultured for aquaculture, and marine eco-  
21       systems;

22           “(2) impacts on ocean, coastal, and estuarine  
23       biogeochemistry;

1 “(3) the development of methodologies and  
 2 technologies to evaluate ocean acidification and its  
 3 impacts; and

4 “(4) impacts of multiple stressors on eco-  
 5 systems exhibiting hypoxia, harmful algal blooms, or  
 6 sediment delivery, combined with changes in ocean  
 7 chemistry.”.

## 8 **TITLE II—NAMED STORM EVENT** 9 **MODEL AND POST-STORM AS-** 10 **SESSMENTS**

### 11 **SEC. 201. NAMED STORM EVENT MODEL AND POST-STORM** 12 **ASSESSMENTS.**

13 (a) AMENDMENTS TO THE OMNIBUS PUBLIC LAND  
 14 MANAGEMENT ACT OF 2009.—Section 12312 of the Om-  
 15 nibus Public Land Management Act of 2009 (33 U.S.C.  
 16 3611) is amended—

17 (1) in subsection (a)—

18 (A) in paragraph (2), by striking the pe-  
 19 riod at the end and inserting the following: “,  
 20 except that the term shall not apply with re-  
 21 spect to a State or territory that has an oper-  
 22 ational wind and flood loss allocation system.”;

23 (B) in paragraph (6), by inserting “sus-  
 24 tained” before “winds”; and

1 (C) in paragraph (7), by striking “that  
 2 threaten any portion of a coastal State” and in-  
 3 serting “for which post-storm assessments are  
 4 conducted”;

5 (2) in subsection (b)—

6 (A) in paragraph (1)—

7 (i) in subparagraph (A)—

8 (I) by striking “540 days after  
 9 the date of the enactment of the Con-  
 10 sumer Option for an Alternative Sys-  
 11 tem to Allocate Losses Act of 2012”  
 12 and inserting “December 31, 2019”;  
 13 and

14 (II) by striking “by regulation”;

15 (ii) in subparagraph (B), by striking  
 16 “every” and inserting “an”; and

17 (iii) by adding at the end the fol-  
 18 lowing:

19 “(C) PUBLIC REVIEW.—The Administrator  
 20 shall seek input and suggestions from the public  
 21 before the Named Storm Event Model, or any  
 22 modification to the Named Storm Event Model,  
 23 takes effect.”; and

24 (B) in paragraph (2)—

1 (i) by redesignating subparagraphs  
 2 (B) and (C) as subparagraphs (D) and  
 3 (E), respectively;

4 (ii) by inserting after subparagraph  
 5 (A) the following:

6 “(B) DATA COLLECTION.—

7 “(i) IN GENERAL.—Upon identifica-  
 8 tion of a named storm under subparagraph  
 9 (A), and pursuant to the protocol estab-  
 10 lished under subsection (c), the Adminis-  
 11 trator may deploy sensors to enhance the  
 12 collection of covered data in the areas in  
 13 coastal States that the Administrator de-  
 14 termines are at the highest risk of experi-  
 15 encing geophysical events that would cause  
 16 indeterminate losses.

17 “(ii) RULE OF CONSTRUCTION.—If  
 18 the Administrator takes action under  
 19 clause (i), that action may not be con-  
 20 strued as indicating that a post-storm as-  
 21 sessment will be developed for any coastal  
 22 State in which that action is taken.

23 “(C) IDENTIFICATION OF INDETERMINATE  
 24 LOSSES IN COASTAL STATES.—Not later than  
 25 30 days after the first date on which sustained

1 winds of not less than 39 miles per hour are  
 2 measured in a coastal State during a named  
 3 storm identified under subparagraph (A), the  
 4 Secretary of Homeland Security shall notify the  
 5 Administrator with respect to the existence of  
 6 any indeterminate losses in that coastal State  
 7 resulting from that named storm.”;

8 (iii) in subparagraph (D), as so redes-  
 9 ignated—

10 (I) by striking “identification of  
 11 a named storm under subparagraph  
 12 (A)” and inserting “confirmation of  
 13 indeterminate losses identified under  
 14 subparagraph (C) with respect to a  
 15 named storm”; and

16 (II) by striking “assessment for  
 17 such named storm” and inserting “as-  
 18 sessment for each coastal State that  
 19 suffered such indeterminate losses as  
 20 a result of the named storm”;

21 (iv) in subparagraph (E), as so redes-  
 22 ignated—

23 (I) by striking “an identification  
 24 of a named storm is made under sub-  
 25 paragraph (A)” and inserting “any in-



1           determinate losses are identified  
2           under subparagraph (C)”; and

3           (II) by striking “for such storm  
4           under subparagraph (B)” and insert-  
5           ing “under subparagraph (D) for any  
6           coastal State that suffered such inde-  
7           terminate losses”; and

8           (v) by adding at the end the following:

9           “(F) SEPARATE POST-STORM ASSESS-  
10          MENTS FOR A SINGLE NAMED STORM.—

11           “(i) IN GENERAL.—The Administrator  
12           may conduct a separate post-storm assess-  
13           ment for each coastal State in which inde-  
14           terminate losses are identified under sub-  
15           paragraph (C).

16           “(ii) TIMELINE.—If the Administrator  
17           conducts a separate post-storm assessment  
18           under clause (i), the Administrator shall  
19           complete the assessment based on the  
20           dates of actions that the Administrator  
21           takes under subparagraphs (C) and (D).”;  
22           and

23          (3) in subsection (c)—

24           (A) in paragraph (1), by striking “540  
25           days after the date of the enactment of the

Consumer Option for an Alternative System to Allocate Losses Act of 2012” and inserting “December 31, 2019”;

(B) in paragraph (2), by inserting “, in the discretion of the Administrator,” after “of sensors as may”; and

(C) in paragraph (4)(B), by inserting “and expend” after “receive”.

(b) AMENDMENTS TO THE NATIONAL FLOOD INSURANCE ACT OF 1968.—Section 1337 of the National Flood Insurance Act of 1968 (42 U.S.C. 4057) is amended—

(1) in subsection (a)—

(A) in paragraph (3), by striking the period at the end and inserting the following: “, except that the term shall not apply with respect to a State or territory that has an operational wind and flood loss allocation system.”; and

(B) in paragraph (5), by inserting “sustained” after “maximum”;

(2) in subsection (b)—

(A) in paragraph (1), by striking “establish by rule” and inserting “publish for comment in the Federal Register”; and

1 (B) in paragraph (2)(B), by inserting after  
 2 “Elevation Certificate” the following: “, or  
 3 other data or information used to determine a  
 4 property’s current risk of flood, as determined  
 5 by the Administrator,”;

6 (3) in subsection (c)(3)(A)(i), by striking “the  
 7 issuance of the rule establishing the COASTAL For-  
 8 mula” and inserting “publication of the COASTAL  
 9 Formula in the Federal Register as required by sub-  
 10 section (b)(1)”;

11 (4) in subsection (h)—

12 (A) by inserting “that issues a standard  
 13 flood insurance policy under the national flood  
 14 insurance program” after “company”; and

15 (B) by striking “or the COASTAL For-  
 16 mula” and inserting “, the COASTAL For-  
 17 mula, or any other loss allocation or post-storm  
 18 assessment arising under the laws or ordinances  
 19 of any State”;

20 (5) in subsection (i), by striking “after the date  
 21 on which the Administrator issues the rule estab-  
 22 lishing the COASTAL Formula under subsection  
 23 (b)” and inserting “60 days after publication of the  
 24 COASTAL Formula in the Federal Register as re-  
 25 quired by subsection (b)(1)”;

1 (6) by adding at the end the following:

2 “(k) RULE OF CONSTRUCTION.—Nothing in this sec-  
3 tion shall be construed to create a cause of action under  
4 this Act.”.

## 5 **TITLE III—WATER PREDICTION** 6 **AND FORECASTING**

### 7 **SEC. 301. WATER PREDICTION AND FORECASTING.**

8 (a) NATIONAL WATER CENTER.—

9 (1) ESTABLISHMENT.—

10 (A) IN GENERAL.—The Under Secretary of  
11 Commerce for Oceans and Atmosphere shall es-  
12 tablish a center—

13 (i) to serve as the research and oper-  
14 ational center of excellence for hydrologic  
15 analyses, forecasting, and related decision  
16 support services within the National Oce-  
17 anic and Atmospheric Administration and  
18 the National Weather Service; and

19 (ii) to facilitate collaboration across  
20 Federal and State departments and agen-  
21 cies, academia, and the private sector on  
22 matters relating to water resources.

23 (B) DESIGNATION.—The center estab-  
24 lished under subparagraph (A) shall be known  
25 as the “National Water Center”.

1           (2) FUNCTIONS.—The functions of the National  
2   Water Center shall include the following:

3           (A) Improving understanding of water re-  
4           sources, stakeholder needs regarding water re-  
5           sources, and identifying science and services  
6           gaps relating to water resources.

7           (B) Developing and implementing ad-  
8           vanced water resources modeling capabilities.

9           (C) Facilitating the transition of hydro-  
10          logic research into operations.

11          (D) Delivering analyses, forecasts, and in-  
12          undation information and guidance for all hy-  
13          drologic events in the United States, including  
14          flash flooding, riverine flooding, and water re-  
15          sources outlooks.

16          (E) In coordination with warning coordina-  
17          tion meteorologists, providing decision-support  
18          services to inform emergency management and  
19          water resources decisions.

20   (b) NATIONAL INSTRUCTIONS.—

21          (1) IN GENERAL.—Not later than one year  
22          after the date of the enactment of this Act, the  
23          Under Secretary, acting through the Director of the  
24          National Weather Service, shall make public an op-

1        erations and services policy directive for the Na-  
2        tional Water Center.

3            (2) CONTENTS.—The directive required by  
4        paragraph (1) shall include national instructions to  
5        perform the functions of the National Water Center,  
6        including the following:

7            (A) Operational staff responsibilities.

8            (B) Guidelines for content, format, and  
9        provision of hydrologic and inundation products  
10       developed by the National Water Center.

11          (C) Procedures for cooperation and coordi-  
12       nation between the National Water Center, the  
13       National Weather Service National Centers for  
14       Environmental Prediction, National Weather  
15       Service River Forecast Centers, and National  
16       Weather Service Weather Forecast Offices.

17        (c) TOTAL WATER PREDICTION.—The Under Sec-  
18       retary, acting through the Director of the Office of Water  
19       Prediction of the National Weather Service, shall—

20            (1) initiate and lead research and development  
21       activities to develop operational water resource pre-  
22       diction and related decision support products;

23            (2) collaborate with, and provide decision sup-  
24       port regarding total water prediction to—

1 (A) the relevant Federal agencies rep-  
2 resented on the National Science and Tech-  
3 nology Council, Committee on Environment,  
4 Natural Resources, and Sustainability and the  
5 Subcommittee on Disaster Reduction;

6 (B) State water resource agencies; and

7 (C) State and local emergency manage-  
8 ment agencies; and

9 (3) in carrying out the responsibilities described  
10 in paragraphs (1) and (2), collaboratively develop  
11 capabilities necessary for total water predictive ca-  
12 pacity, including observations, modeling, data man-  
13 agement, supercomputing, social science, and com-  
14 munications.

15 (d) AUTHORIZATION OF APPROPRIATIONS.—There  
16 are authorized to be appropriated to carry out the activi-  
17 ties under this section amounts as follows:

18 (1) \$44,000,000 for fiscal year 2020.

19 (2) \$44,500,000 for fiscal year 2021.

20 (3) \$45,000,000 for fiscal year 2022.

21 (4) \$45,500,000 for fiscal year 2023.

22 (5) \$46,000,000 for fiscal year 2024.

23 (e) DERIVATION OF FUNDS.—Amounts made avail-  
24 able to carry out this section shall be derived from

- 1 amounts appropriated or otherwise made available to the
- 2 National Weather Service and the National Ocean Service.





Calendar No. 318

116TH CONGRESS  
1ST Session

**S. 914**

[Report No. 116-168]

**A BILL**

To reauthorize the Integrated Coastal and Ocean Observation System Act of 2009, to clarify the authority of the Administrator of the National Oceanic and Atmospheric Administration with respect to post-storm assessments, and to require the establishment of a National Water Center, and for other purposes.

DECEMBER 5, 2019

Reported without amendment