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115TH CONGRESS
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S. 1425

[Report No. 115–186]

To reauthorize the Integrated Coastal and Ocean Observation System Act
of 2009, and for other purposes.

IN THE SENATE OF THE UNITED STATES

JUNE 22, 2017

Mr. WICKER (for himself, Ms. CANTWELL, Ms. MURKOWSKI, Mr. SULLIVAN,
Mr. CASSIDY, Mr. GRAHAM, Ms. COLLINS, Mr. MARKEY, Mr. SCHATZ,
Mr. PETERS, and Ms. HASSAN) introduced the following bill; which was
read twice and referred to the Committee on Commerce, Science, and
Transportation

NOVEMBER 27, 2017

Reported by Mr. THUNE, with an amendment

[Strike out all after the enacting clause and insert the part printed in *italie*]

A BILL

To reauthorize the Integrated Coastal and Ocean Observation
System Act of 2009, 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,*

1 **SECTION 1. SHORT TITLE.**

2 This Act may be cited as the “Coordinated Ocean
3 Monitoring and Research Act”.

4 **SEC. 2. PURPOSES.**

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

8 **“SEC. 12302. PURPOSES.**

9 “The purposes of this subtitle are—

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

25 “(A) to the public;

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

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

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

17 “(E) to enable advances in scientific un-
18 derstanding to support the sustainable use, con-
19 servation, management, and understanding of
20 healthy ocean, coastal, and Great Lakes re-
21 sources; and

22 “(F) to monitor and model changes in
23 ocean chemistry;

24 “(2) to improve the Nation’s capability to meas-
25 ure, track, observe, understand, and predict events

related directly and indirectly to weather and climate change, natural climate variability, and interactions between the oceanic and atmospheric environments, including the Great Lakes; and

“(3) to authorize activities—

“(A) to promote basic and applied research to develop, test, and deploy innovations and improvements in coastal and ocean observation technologies, including advanced observing technologies needed to address critical data gaps; modeling systems; other scientific and technological capabilities to improve the understanding of weather and climate, ocean-atmosphere dynamics, global climate change, and the physical, chemical, and biological dynamics of the ocean, coastal and Great Lakes environments; and

“(B) to conserve healthy and restore degraded coastal ecosystems.”.

SEC. 3. DEFINITIONS.

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

(1) in paragraph (5), by striking “States, regional organizations, universities, nongovernmental

organizations, or the private sector.” and inserting
 “the regional coastal observing systems, the Na-
 tional Oceanic and Atmospheric Administration, or
 the Interagency Ocean Observation Committee.”;

(2) by amending paragraph (6) to read as fol-
 lows:

“(6) REGIONAL COASTAL OBSERVING SYS-
 TEM.—The term ‘regional coastal observing system’
 means an organizational body that is certified or es-
 tablished by contract or memorandum by the lead
 Federal agency designated in section 12304(e)(3)
 and coordinates State, Federal, local, tribal, and pri-
 vate interests at a regional level with the responsi-
 bility of engaging the private and public sectors in
 designing, operating, and improving regional coastal
 and ocean observing systems in order to ensure the
 provision of data and information that meet the
 needs of user groups from the respective regions.”;
 and

(3) in paragraph (7), by striking “National
 Oceanic and Atmospheric Administration.” and in-
 serting “Administrator.”.

**SEC. 4. INTEGRATED COASTAL AND OCEAN OBSERVATION
 SYSTEM.**

(a) SYSTEM ELEMENTS.—

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

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

8 “(A) Federal assets to fulfill national and
 9 international observation missions and prior-
 10 ities;

11 “(B) non-Federal assets, including a net-
 12 work of regional coastal observing systems iden-
 13 tified under subsection (c)(4), to fulfill regional
 14 and national observation missions and prior-
 15 ities;

16 “(C) data management, communication,
 17 and modeling systems for the timely integration
 18 and dissemination of data and information
 19 products from the System;

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

1 “(E) a research and development program
2 conducted under the guidance of the Council,
3 consisting of—

4 “(i) basic and applied research and
5 technology development—

6 “(I) to improve understanding of
7 coastal and ocean systems and their
8 relationships to human activities; and

9 “(H) to ensure improvement of
10 operational assets and products, in-
11 cluding related infrastructure, observ-
12 ing technologies, and information and
13 data processing and management
14 technologies;

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

18 “(iii) large scale computing resources
19 and research to advance modeling of coast-
20 al and ocean processes;

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

24 “(v) reviews of data collection proce-
25 dures across regions and programs to

1 make recommendations for data collection
 2 standards across the System to meet na-
 3 tional ocean observation, applied research,
 4 and weather forecasting needs.”.

5 (2) AVAILABILITY OF DATA.—Paragraph (3) of
 6 section 12304(b) of the Integrated Coastal and
 7 Ocean Observation System Act of 2009 (33 U.S.C.
 8 3603(b)) is amended by striking the period at the
 9 end and inserting “for research and for use in the
 10 development of products to address societal needs.”.

11 (3) COORDINATION OF NON-FEDERAL AS-
 12 SETS.—Paragraph (4) of section 12304(b) of the In-
 13 tegrated Coastal and Ocean Observation System Act
 14 of 2009 (33 U.S.C. 3603(b)) is amended—

15 (A) in the paragraph heading, by striking
 16 “NON-FEDERAL” and inserting “COORDINA-
 17 TION OF NON-FEDERAL”; and

18 (B) by inserting “, the regional coastal ob-
 19 serving system,” after “Interagency Ocean Ob-
 20 serving Committee”.

21 (b) POLICY OVERSIGHT, ADMINISTRATION, AND RE-
 22 GIONAL COORDINATION.—Section 12304(c) of the Inte-
 23 grated Coastal and Ocean Observation System Act of
 24 2009 (33 U.S.C. 3603(c)) is amended by striking para-
 25 graphs (2), (3), and (4), and inserting the following:

1 ~~“(2) INTERAGENCY OCEAN OBSERVATION COM-~~
 2 ~~MITTEE.—~~

3 ~~“(A) ESTABLISHMENT.—The Council shall~~
 4 ~~establish or designate a committee which shall~~
 5 ~~be known as the Interagency Ocean Observation~~
 6 ~~Committee.~~

7 ~~“(B) DUTIES.—The Interagency Ocean~~
 8 ~~Observation Committee shall—~~

9 ~~“(i) prepare annual and long-term~~
 10 ~~plans for consideration and approval by the~~
 11 ~~Council for the integrated design, oper-~~
 12 ~~ation, maintenance, enhancement, and ex-~~
 13 ~~pansion of the System to meet the objec-~~
 14 ~~tives of this chapter and the System Plan;~~

15 ~~“(ii) develop and transmit to Con-~~
 16 ~~gress, along with the budget submitted by~~
 17 ~~the President to Congress pursuant to sec-~~
 18 ~~tion 1105(a) of title 31, United States~~
 19 ~~Code, an annual coordinated, comprehen-~~
 20 ~~sive budget—~~

21 ~~“(I) to operate all elements of~~
 22 ~~the System identified in subsection~~
 23 ~~(b); and~~

1 “(H) to ensure continuity of data
2 streams from Federal and non-Fed-
3 eral assets;

4 “(iii) establish requirements for obser-
5 vation data variables to be gathered by
6 both Federal and non-Federal assets and
7 identify, in consultation with regional in-
8 formation coordination entities, priorities
9 for System observations;

10 “(iv) establish and define protocols
11 and standards for System data processing,
12 management, collection, configuration
13 standards, formats, and communication for
14 new and existing assets throughout the In-
15 tegrated Ocean Observing System network;

16 “(v) develop contract requirements for
17 each Regional Coastal Observing System—

18 “(I) to establish eligibility for in-
19 tegration into the System;

20 “(II) to ensure compliance with
21 all applicable standards and protocols
22 established by the Council; and

23 “(III) to ensure that regional ob-
24 servations are integrated into the Sys-
25 tem on a sustained basis;

1 “(vi) identify gaps in observation cov-
2 erage or needs for capital improvements of
3 both Federal assets and non-Federal as-
4 sets;

5 “(vii) subject to the availability of ap-
6 propriations, establish through one or more
7 participating Federal agencies, in consulta-
8 tion with the System advisory committee
9 established under subsection (d), a com-
10 petitive matching grant or other pro-
11 grams—

12 “(I) to promote intramural and
13 extramural research and development
14 of new, innovative, and emerging ob-
15 servation technologies including test-
16 ing and field trials; and

17 “(II) to facilitate the migration
18 of new, innovative, and emerging sci-
19 entific and technological advances
20 from research and development to
21 operational deployment;

22 “(viii) periodically—

23 “(I) review the System Plan; and

24 “(II) submit to the Council such
25 recommendations as the Interagency

1 Ocean Observation Committee may
 2 have for improvements to the System
 3 Plan;

4 “(ix) ensure collaboration among Fed-
 5 eral agencies participating in the activities
 6 of the Interagency Ocean Observation
 7 Committee; and

8 “(x) perform such additional duties as
 9 the Council may delegate.

10 “(3) LEAD FEDERAL AGENCY.—

11 “(A) IN GENERAL.—The National Oceanic
 12 and Atmospheric Administration shall function
 13 as the lead Federal agency for the implementa-
 14 tion and administration of the System.

15 “(B) CONSULTATION REQUIRED.—In ear-
 16 rying out this paragraph, the Administrator
 17 shall consult with the Council, the Interagency
 18 Ocean Observation Committee, other Federal
 19 agencies that maintain portions of the System,
 20 and the Regional Coastal Observing Systems.

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

23 “(i) establish and operate an Inte-
 24 grated Ocean Observing System Program

Office within the National Oceanic and Atmospheric Administration—

“(I) that utilizes, to the extent necessary, personnel from member agencies participating on the Interagency Ocean Observation Committee; and

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

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

“(iii) promulgate program guidelines—

“(I) to certify and integrate regional associations into the System; and

“(II) to provide regional coastal and ocean observation data that meet the needs of user groups from the respective regions;

“(iv) have the authority to enter into and oversee contracts, leases, grants or cooperative agreements with non-Federal as-

1 sets, including regional information coordi-
2 nation entities, to support the purposes of
3 this chapter on such terms as the Adminis-
4 trator deems appropriate;

5 “(v) implement and maintain a merit-
6 based, competitive funding process to sup-
7 port non-Federal assets, including the de-
8 velopment and maintenance of a network
9 of Regional Coastal Observing Systems,
10 and develop and implement a process for
11 the periodic review and evaluation of the
12 regional associations;

13 “(vi) provide opportunities for com-
14 petitive contracts and grants for dem-
15 onstration projects to design, develop, inte-
16 grate, deploy, maintain, and support com-
17 ponents of the System;

18 “(vii) establish and maintain efficient
19 and effective administrative procedures for
20 allocation of funds among contractors,
21 grantees, and non-Federal assets, including
22 regional associations in a timely manner;

23 “(viii) develop and implement a proe-
24 ss for the periodic review and evaluation

1 of the Regional Coastal Observing Sys-
2 tems;

3 “(ix) formulate an annual process by
4 which gaps in observation coverage or
5 needs for capital improvements of Federal
6 assets and non-Federal assets of the Sys-
7 tem are—

8 “(I) identified by the regional as-
9 sociations described in the System
10 Plan, the Administrator, or other
11 members of the System; and

12 “(II) submitted to the Inter-
13 agency Ocean Observing Committee;

14 “(x) develop and be responsible for a
15 data management and communication sys-
16 tem, in accordance with standards and
17 protocols established by the Interagency
18 Ocean Observing Committee, by which all
19 data collected by the System regarding
20 ocean and coastal waters of the United
21 States including the Great Lakes, are pro-
22 cessed, stored, integrated, and made avail-
23 able to all end-user communities;

24 “(xi) not less frequently than once
25 each year, submit to the Interagency

Ocean Observing Observation Committee a report on the accomplishments, operational needs, and performance of the System to contribute to the annual and long-term plans prepared pursuant to paragraph (2)(B)(i);

“(xii) develop and periodically update a plan to efficiently integrate into the System new, innovative, or emerging technologies that have been demonstrated to be useful to the System and which will fulfill the purposes of this chapter and the System Plan; and

“(xiii) work with users and Regional Associations to develop products to enable real-time data sharing for decision makers, including with respect to weather forecasting and modeling, search and rescue operations, corrosive seawater forecasts, water quality monitoring and communication, and harmful algal bloom forecasting.

“(4) REGIONAL COASTAL OBSERVING SYSTEMS.—

“(A) IN GENERAL.—A Regional Coastal Observing System operated by a Regional Asso-

1 ciation described in the System Plan may not
2 be certified or established under this subtitle
3 unless it—

4 “(i) has been or shall be certified or
5 established by contract or agreement by
6 the Administrator;

7 “(ii) meets—

8 “(I) the certification standards
9 and compliance procedure guidelines
10 issued by the Administrator; and

11 “(II) the information needs of
12 user groups in the region while adher-
13 ing to national standards;

14 “(iii) demonstrates an organizational
15 structure, that under funding limitations is
16 capable of—

17 “(I) gathering required System
18 observation data;

19 “(II) supporting and integrating
20 all aspects of coastal and ocean ob-
21 serving and information programs
22 within a region; and

23 “(III) reflecting the needs of
24 State, local, and tribal governments,
25 commercial interests, and other users

1 and beneficiaries of the System and
2 other requirements specified under
3 this subtitle and the System Plan;

4 “(iv) identifies—

5 “(I) gaps in observation coverage
6 needs for capital improvements of
7 Federal assets and non-Federal assets
8 of the System;

9 “(II) other recommendations to
10 assist in the development of the an-
11 nual and long-term plans prepared
12 pursuant to paragraph (2)(B)(i) and
13 transmit such information to the
14 Interagency Ocean Observation Com-
15 mittee via the Program Office estab-
16 lished under paragraph (3)(C)(i);

17 “(v) develops and operates under a
18 strategic operational plan that will ensure
19 the efficient and effective administration of
20 programs and assets to support daily data
21 observations for integration into the Sys-
22 tem, pursuant to the standards approved
23 by the Council;

24 “(vi) works cooperatively with govern-
25 mental and nongovernmental entities at all

1 levels to identify and provide information
 2 products of the System for multiple users
 3 within the service area of the regional
 4 coastal observing system; and

5 “(vii) complies with all financial over-
 6 sight requirements established by the Ad-
 7 ministrator, including requirements relat-
 8 ing to audits.

9 “(B) PARTICIPATION.—For the purposes
 10 of this title, employees of Federal agencies are
 11 permitted to be members of the governing body
 12 for the Regional Coastal Observing Systems
 13 and may participate in the functions of the re-
 14 gional information coordination entities.”.

15 (c) SYSTEM ADVISORY COMMITTEE.—Section
 16 12304(d) of the Integrated Coastal and Ocean Observa-
 17 tion System Act of 2009 (33 U.S.C. 3603(d)) is amend-
 18 ed—

19 (1) in paragraph (1), by striking “or the Inter-
 20 agency Ocean Observing Observation Committee.”
 21 and inserting “the Council under this subtitle”; and

22 (2) in paragraph (2)—

23 (A) in subparagraph (A), by inserting
 24 “data sharing,” after “data management”;

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

3 (C) by striking subparagraph (D) and in-
4 serting the following:

5 “(D) additional priorities, including—

6 “(i) a national surface current map-
7 ping network designed to improve fine
8 scale sea surface mapping using high fre-
9 quency radar technology and other emerg-
10 ing technologies to address national prior-
11 ities, including Coast Guard search and
12 rescue operation planning and harmful
13 algal bloom forecasting and detection
14 that—

15 “(I) is comprised of existing
16 high-frequency radar and other sea
17 surface current mapping infrastruc-
18 ture operated by regional associations;

19 “(II) incorporates new high-fre-
20 quency radar assets or other fine scale
21 sea surface mapping technology as-
22 sets, and other assets needed to fill
23 gaps in coverage on United States
24 coastlines; and

1 “(III) follows deployment plan
2 that prioritizes closing gaps in high
3 frequency radar infrastructure in the
4 United States, starting with areas
5 demonstrating significant sea surface
6 current data needs, especially in areas
7 where additional data will improve
8 Coast Guard search and rescue mod-
9 els;

10 “(ii) fleet acquisition for autonomous
11 underwater and surface vehicles for deploy-
12 ment and data integration to fulfill the
13 purposes of the Act;

14 “(iii) an integrative survey program
15 for application of manned and unmanned
16 vehicles to the real-time or near real-time
17 collection and transmission of seafloor,
18 water column, and sea surface data on bi-
19 ology, chemistry, geology, physics and hy-
20 drography;

21 “(iv) remote sensing and data assimi-
22 lation to develop new analytical methodolo-
23 gies to assimilate data from the Integrated
24 Ocean Observing System into hydro-
25 dynamic models;

1 “(v) integrated, multi-State moni-
 2 toring to assess sources, movement and
 3 fate of sediments in coastal regions;

4 “(vi) a multi-region marine sound
 5 monitoring system to be—

6 “(I) planned in consultation with
 7 the International Ocean Observing
 8 Committee, the National Oceanic and
 9 Atmospheric Administration, and aca-
 10 demic research institutions; and

11 “(II) developed, installed, and op-
 12 erated in coordination with the Na-
 13 tional Oceanic and Atmospheric Ad-
 14 ministration and academic research
 15 institutions; and

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

18 (D) in paragraph (3)(B), by inserting
 19 “The Secretary has the ability to stagger the
 20 terms of the System advisory committee mem-
 21 bers.” before “Members”; and

22 (E) in paragraph (4)—

23 (i) in subparagraph (A), by striking
 24 “and the Interagency Ocean Observing
 25 Committee”; and

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

3 (d) CIVIL LIABILITY.—Section 12304(e) of the Inte-
 4 grated Coastal and Ocean Observation System Act of
 5 2009 (33 U.S.C. 3603(e)) is amended—

6 (1) by striking “information coordination enti-
 7 ty” and inserting “coastal observation system”; and

8 (2) by striking “non-Federal asset or regional
 9 information coordination entity” and inserting “Re-
 10 gional Coastal Observing System,”.

11 **SEC. 5. INTERAGENCY FINANCING AND AGREEMENTS.**

12 Section 12305(a) of the Integrated Coastal and
 13 Ocean Observation System Act of 2009 (33 U.S.C.
 14 3604(a)) is amended to read as follows:

15 “(a) IN GENERAL.—To carry out interagency activi-
 16 ties under this subtitle, the Secretary of Commerce may
 17 execute an agreement, on a reimbursable or nonreimburs-
 18 able basis, with any State or subdivision thereof, any Fed-
 19 eral agency, or any public or private organization, or indi-
 20 vidual to carry out interagency activities under this sub-
 21 title.”.

22 **SEC. 6. REPORTS TO CONGRESS.**

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

1 “(a) REQUIREMENT.—Not later than 2 years after
2 March 30, 2009, and every 3 years thereafter, the Admin-
3 istrator shall prepare and the President acting through the
4 Council shall approve and transmit to the Congress a re-
5 port on progress made in implementing this subtitle.

6 “(b) CONTENTS.—Each report required by sub-
7 section (a) shall include—

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

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

14 “(3) identification of Federal and non-Federal
15 assets as determined by the Council that have been
16 integrated into the System, including assets essential
17 to the gathering of required observation data vari-
18 ables necessary to meet the respective missions of
19 Council agencies;

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

9 “(D) ocean chemistry monitoring;

10 “(6) an assessment regarding activities to inte-
11 grate Federal and non-Federal assets; nationally and
12 on the regional level; and discussion of the perform-
13 ance and effectiveness of regional information co-
14 ordination entities to coordinate regional observation
15 operations;

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

21 “(8) recommendations concerning—

22 “(A) modifications to the System; and

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

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

3 **SEC. 7. PUBLIC-PRIVATE USE POLICY.**

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

7 “The Council shall maintain a policy that defines
8 processes for making decisions about the roles of the Fed-
9 eral Government, the States, regional information coordi-
10 nation entities, the academic community, and the private
11 sector in providing to end-user communities environmental
12 information, products, technologies, and services related to
13 the System. The Administrator shall ensure that National
14 Oceanic and Atmospheric Administration adheres to the
15 decision making process developed by the Council regard-
16 ing the roles of the Federal Government, the States, the
17 Regional Coastal Observing Systems, the academic com-
18 munities, and the private sector in providing the end-user
19 communities environmental information, data products,
20 technologies, and services related to the System.”.

21 **SEC. 8. INDEPENDENT COST ESTIMATE.**

22 The Integrated Coastal and Ocean Observation Sys-
23 tem Act of 2009 is amended by striking section 12309
24 (33 U.S.C. 3608).

1 **SEC. 9. AUTHORIZATION OF APPROPRIATIONS.**

2 Section ~~12311~~ of the Integrated Coastal and Ocean
3 Observation System Act of 2009 (~~33~~ U.S.C. 3610) is
4 amended by striking section “2013” and inserting
5 “2021”.

6 **SEC. 10. REPORTS AND RESEARCH PLANS.**

7 Section ~~12404(e)~~ of the Federal Ocean Acidification
8 Research And Monitoring Act of 2009 (~~33~~ U.S.C.
9 ~~3703(e)~~) is amended by adding at the end the following:

10 “(4) ECONOMIC VULNERABILITY REPORT.—Not
11 later than 1 year after the enactment of the Coordi-
12 nated Ocean Monitoring and Research Act, and
13 every 5 years thereafter, the Subcommittee shall
14 transmit to the Committee on Commerce, Science,
15 and Transportation of the Senate and the Com-
16 mittee on Science, Space, and Technology and the
17 Committee on Natural Resources of the House of
18 Representatives a report that—

19 “(A) is named ‘The Ocean Chemistry
20 Coastal Community Vulnerability Assessment’;

21 “(B) identifies gaps in ocean acidification
22 monitoring by public, academic, and private as-
23 sets in the network of regional coastal observing
24 systems;

25 “(C) identifies areas which have gaps in
26 ocean acidification research;

1 “(D) identifies United States coastal com-
2 munities, including fishing communities, low-
3 population rural communities, tribal and sub-
4 sistence communities, and island communities;
5 that may be impacted by ocean acidification;

6 “(E) identifies impacts of changing ocean
7 pH on the communities described in subpara-
8 graph (D), including impacts from changes in
9 ocean and coastal marine resources that are not
10 managed by the Federal Government;

11 “(F) identifies gaps in understanding of
12 the impacts of ocean acidification on economi-
13 cally or commercially important species, par-
14 ticularly those which support United States
15 commercial, recreational, and tribal fisheries
16 and aquaculture;

17 “(G) identifies habitats that are particu-
18 larly vulnerable to corrosive sea water, includ-
19 ing areas experiencing multiple stressors such
20 as hypoxia, sedimentation and harmful algal
21 blooms;

22 “(H) identifies areas in which existing In-
23 tegrated Ocean Observing System assets, in-
24 cluding buoys and gliders, that may be lever-

1 aged as platforms for the deployment of new
2 sensors; and

3 “(I) is written in collaboration with the
4 agencies responsible for carrying out this Act.

5 ~~“(5) MONITORING PRIORITIZATION PLAN.—~~Not
6 later than 180 days after the submission of the re-
7 port required by paragraph (4), the Subcommittee
8 shall transmit to the Committee on Commerce,
9 Science, and Transportation of the Senate and the
10 Committee on Science, Space, and Technology and
11 the Committee on Natural Resources of the House
12 of Representatives a report that develops a plan to
13 deploy new sensors—

14 ~~“(A) based on the report required by para-~~
15 ~~graph (4);~~

16 ~~“(B) prioritized by—~~

17 ~~“(i) the threat to coastal economies~~
18 ~~and ecosystems;~~

19 ~~“(ii) gaps in data; and~~

20 ~~“(iii) research needs; and~~

21 ~~“(C) that leverage existing platforms;~~
22 ~~where possible.”.~~

1 **SEC. 11. STRATEGIC RESEARCH PLAN.**

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

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

7 (2) in paragraph (9), by striking the period at
8 the end and inserting a semicolon and “and”; and

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

10 “(10) make recommendations for research to be
11 conducted, including in the social sciences and eco-
12 nomics, to address the key knowledge gaps identified
13 in the economic vulnerability report conducted under
14 section 12404(c).”.

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

19 “(6) Research to understand combined effects
20 of changes in ocean chemistry, sediment delivery, hy-
21 poxia and harmful algal blooms and the impact
22 these processes have on one another, and how these
23 multiple stressors impact living marine resources
24 and coastal ecosystems.

25 “(7) Applied research to identify adaptation
26 strategies for species impacted by changes in ocean

1 chemistry including vegetation-based systems, shell
 2 recycling, species and genetic diversity, applied tech-
 3 nologies, aquaculture methodologies, and manage-
 4 ment recommendations.”.

5 **SEC. 12. STAKEHOLDER INPUT ON MONITORING.**

6 Section 12406(a) of the Federal Ocean Acidification
 7 Research And Monitoring Act of 2009 (33 U.S.C.
 8 3705(a)) is amended—

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

11 (2) in paragraph (3), by striking the period at
 12 the end and inserting a semicolon and “and”; and
 13 (3) by adding at the end the following:

14 “(4) includes an ongoing mechanism that allows
 15 potentially affected industry members, coastal stake-
 16 holders, fishery management councils and commis-
 17 sions, non-Federal resource managers, and scientific
 18 experts to provide input on monitoring needs that
 19 are necessary to support on the ground manage-
 20 ment, decision making, and adaptation related to
 21 ocean acidification.”.

22 **SEC. 13. RESEARCH ACTIVITIES.**

23 Section 12407(a) of the Federal Ocean Acidification
 24 Research And Monitoring Act of 2009 (33 U.S.C.
 25 3706(a)) is amended to read as follows:

1 “(a) RESEARCH ACTIVITIES.—The Director of the
 2 National Science Foundation shall continue to carry out
 3 research activities on ocean acidification which shall sup-
 4 port competitive, merit-based, peer-reviewed proposals for
 5 research, observatories and monitoring of ocean acidifica-
 6 tion and its impacts, including—

7 “(1) impacts on marine organisms and marine
 8 ecosystems;

9 “(2) impacts on ocean, coastal, and estuarine
 10 biogeochemistry;

11 “(3) the development of methodologies and
 12 technologies to evaluate ocean acidification and its
 13 impacts; and

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

18 **SECTION 1. SHORT TITLE; TABLE OF CONTENTS.**

19 (a) *SHORT TITLE.*—This Act may be cited as the “Co-
 20 ordinated Ocean Monitoring and Research Act”.

21 (b) *TABLE OF CONTENTS.*—The table of contents for
 22 this Act is as follows:

Sec. 1. Short title; table of contents.

Sec. 2. Purposes.

Sec. 3. Definitions.

Sec. 4. Integrated Coastal and Ocean Observation System.

Sec. 5. Financing and agreements.

Sec. 6. Reports to Congress.

Sec. 7. Public-private use policy.

Sec. 8. Repeal of independent cost estimate.
Sec. 9. Authorization of appropriations.
Sec. 10. Reports and research plans.
Sec. 11. Strategic research plan.
Sec. 12. Stakeholder input on monitoring.
Sec. 13. Research activities.

1 **SEC. 2. PURPOSES.**

2 *Section 12302 of the Integrated Coastal and Ocean Ob-*
 3 *servaion System Act of 2009 (33 U.S.C. 3601) is amended*
 4 *to read as follows:*

5 **“SEC. 12302. PURPOSES.**

6 *“The purposes of this subtitle are—*

7 *“(1) to establish and sustain a national inte-*
 8 *grated System of ocean, coastal, and Great Lakes ob-*
 9 *servaion systems, comprised of Federal and non-Fed-*
 10 *eral components coordinated at the national level by*
 11 *the Council and at the regional level by a network of*
 12 *regional coastal observing systems, and that includes*
 13 *in situ, remote, and other coastal and ocean observa-*
 14 *tion and modeling capabilities, technologies, data*
 15 *management systems, communication systems, and*
 16 *product development systems, and is designed to ad-*
 17 *dress regional and national needs for ocean and*
 18 *coastal information, to gather specific data on key*
 19 *coastal, ocean, and Great Lakes variables, and to en-*
 20 *sure timely and sustained dissemination and avail-*
 21 *ability of these data—*

22 *“(A) to the public;*

1 “(B) to support national defense, search
 2 and rescue operations, marine commerce, navi-
 3 gation safety, weather, climate, and marine fore-
 4 casting, energy siting and production, economic
 5 development, ecosystem-based marine, coastal,
 6 and Great Lakes resource management, public
 7 safety, and public outreach and education;

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

12 “(D) to provide easy access to ocean, coast-
 13 al, and Great Lakes data and promote data
 14 sharing between Federal and non-Federal sources
 15 and promote public data sharing;

16 “(E) to enable advances in scientific under-
 17 standing to support the sustainable use, con-
 18 servation, management, and understanding of
 19 healthy ocean, coastal, and Great Lakes re-
 20 sources; and

21 “(F) to monitor and model changes in
 22 ocean chemistry;

23 “(2) to improve the Nation’s capability to meas-
 24 ure, track, observe, understand, and predict events re-
 25 lated directly and indirectly to weather and climate

1 *change, natural climate variability, and interactions*
 2 *between the oceanic and atmospheric environments,*
 3 *including the Great Lakes; and*

4 “(3) to authorize activities—

5 “(A) to promote basic and applied research
 6 to develop, test, and deploy innovations and im-
 7 provements in coastal and ocean observation
 8 technologies, including advanced observing tech-
 9 nologies needed to address critical data gaps,
 10 modeling systems, other scientific and techno-
 11 logical capabilities to improve the understanding
 12 of weather and climate, ocean-atmosphere dy-
 13 namics, global climate change, and the physical,
 14 chemical, and biological dynamics of the ocean,
 15 coastal and Great Lakes environments; and

16 “(B) to conserve healthy and restore de-
 17 graded coastal ecosystems.”.

18 **SEC. 3. DEFINITIONS.**

19 *Section 12303 of the Integrated Coastal and Ocean Ob-*
 20 *servaion System Act of 2009 (33 U.S.C. 3602) is amend-*
 21 *ed—*

22 (1) in paragraph (5), by striking “integrated
 23 into the System and are managed through States, re-
 24 gional organizations, universities, nongovernmental
 25 organizations, or the private sector” and inserting

1 *“managed through States, regional organizations,*
 2 *universities, nongovernmental organizations, or the*
 3 *private sector and integrated into the system by the*
 4 *regional coastal ocean observing system, the National*
 5 *Oceanic and Atmospheric Administration, or the*
 6 *agencies on the Interagency Ocean Observation Com-*
 7 *mittee”;*

8 *(2) by amending paragraph (6) to read as fol-*
 9 *lows:*

10 *“(6) REGIONAL COASTAL OBSERVING SYSTEM.—*
 11 *The term ‘regional coastal observing system’ means*
 12 *an organizational body that is certified or established*
 13 *by contract or memorandum by the lead Federal*
 14 *agency designated in section 12304(c)(3) and coordi-*
 15 *nates State, Federal, local, tribal, and private inter-*
 16 *ests at a regional level with the responsibility of en-*
 17 *gaging the private and public sectors in designing,*
 18 *operating, and improving regional coastal and ocean*
 19 *observing systems in order to ensure the provision of*
 20 *data and information that meet the needs of user*
 21 *groups from the respective regions.”; and*

22 *(3) in paragraph (7), by striking “National Oce-*
 23 *anic and Atmospheric Administration” and inserting*
 24 *“Administrator”.*

1 **SEC. 4. INTEGRATED COASTAL AND OCEAN OBSERVATION**
 2 **SYSTEM.**

3 (a) *SYSTEM ELEMENTS.*—

4 (1) *IN GENERAL.*—Section 12304(b) of the *Inte-*
 5 *grated Coastal and Ocean Observation System Act of*
 6 *2009 (33 U.S.C. 3603(b)) is amended by striking*
 7 *paragraph (1) and inserting the following:*

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

11 “(A) *Federal assets to fulfill national and*
 12 *international observation missions and prior-*
 13 *ities;*

14 “(B) *non-Federal assets, including a net-*
 15 *work of regional coastal observing systems iden-*
 16 *tified under subsection (c)(4), to fulfill regional*
 17 *and national observation missions and prior-*
 18 *ities;*

19 “(C) *data management, communication,*
 20 *and modeling systems for the timely integration*
 21 *and dissemination of data and information*
 22 *products from the System;*

23 “(D) *a product development system to*
 24 *transform observations into products in a format*
 25 *that may be readily used and understood; and*

1 “(E) a research and development program
 2 conducted under the guidance of the Council,
 3 consisting of—

4 “(i) basic and applied research and
 5 technology development—

6 “(I) to improve understanding of
 7 coastal and ocean systems and their re-
 8 lationships to human activities; and

9 “(II) to ensure improvement of
 10 operational assets and products, in-
 11 cluding related infrastructure, observ-
 12 ing technologies, and information and
 13 data processing and management tech-
 14 nologies;

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

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

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

24 “(v) reviews of data collection proce-
 25 dures across regions and programs to make

1 *recommendations for data collection stand-*
 2 *ards across the System to meet national*
 3 *ocean, coastal, and Great Lakes observation,*
 4 *applied research, and weather forecasting*
 5 *needs.”.*

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

11 (3) *COORDINATION OF NON-FEDERAL ASSETS.—*
 12 *Section 12304(b)(4) of such Act (33 U.S.C. 3603(b))*
 13 *is amended—*

14 (A) *in the paragraph heading, by striking*
 15 *“NON-FEDERAL” and inserting “COORDINATION*
 16 *OF NON-FEDERAL”; and*

17 (B) *by striking “or by” and inserting “, the*
 18 *regional coastal observing system, or”.*

19 (b) *POLICY OVERSIGHT, ADMINISTRATION, AND RE-*
 20 *GIONAL COORDINATION.—Section 12304(c) of the Integrated*
 21 *Coastal and Ocean Observation System Act of 2009 (33*
 22 *U.S.C. 3603(c)) is amended by striking paragraphs (2), (3),*
 23 *and (4), and inserting the following:*

24 “(2) *INTERAGENCY OCEAN OBSERVATION COM-*
 25 *MITTEE.—*

1 “(A) *ESTABLISHMENT.*—*The Council shall*
 2 *establish or designate a committee, which shall*
 3 *be known as the Interagency Ocean Observation*
 4 *Committee.*

5 “(B) *DUTIES.*—*The Interagency Ocean Ob-*
 6 *servation Committee shall—*

7 “(i) *prepare annual and long-term*
 8 *plans for consideration and approval by the*
 9 *Council for the integrated design, operation,*
 10 *maintenance, enhancement, and expansion*
 11 *of the System to meet the objectives of this*
 12 *chapter and the System Plan;*

13 “(ii) *develop and transmit to Congress,*
 14 *along with the budget submitted by the*
 15 *President to Congress pursuant to section*
 16 *1105(a) of title 31, United States Code, an*
 17 *annual coordinated, comprehensive budg-*
 18 *et—*

19 “(I) *to operate all elements of the*
 20 *System identified in subsection (b);*
 21 *and*

22 “(II) *to ensure continuity of data*
 23 *streams from Federal and non-Federal*
 24 *assets;*

1 “(iii) establish requirements for obser-
 2 vation data variables to be gathered by both
 3 Federal and non-Federal assets and iden-
 4 tify, in consultation with regional informa-
 5 tion coordination entities, priorities for
 6 System observations;

7 “(iv) establish and define protocols and
 8 standards for System data processing, man-
 9 agement, collection, configuration stand-
 10 ards, formats, and communication for new
 11 and existing assets throughout the Inte-
 12 grated Ocean Observing System network;

13 “(v) develop contract requirements for
 14 each regional coastal observing system—

15 “(I) to establish eligibility for in-
 16 tegration into the System;

17 “(II) to ensure compliance with
 18 all applicable standards and protocols
 19 established by the Council; and

20 “(III) to ensure that regional ob-
 21 servations are integrated into the Sys-
 22 tem on a sustained basis;

23 “(vi) identify gaps in observation cov-
 24 erage or needs for capital improvements of
 25 both Federal assets and non-Federal assets;

1 “(vii) subject to the availability of ap-
 2 propriations, establish through 1 or more
 3 participating Federal agencies, in consulta-
 4 tion with the System advisory committee es-
 5 tablished under subsection (d), a competi-
 6 tive matching grant or other programs—

7 “(I) to promote intramural and
 8 extramural research and development
 9 of new, innovative, and emerging ob-
 10 servation technologies including testing
 11 and field trials; and

12 “(II) to facilitate the migration of
 13 new, innovative, and emerging sci-
 14 entific and technological advances from
 15 research and development to oper-
 16 ational deployment;

17 “(viii) periodically—

18 “(I) review the System Plan; and

19 “(II) submit to the Council such
 20 recommendations as the Interagency
 21 Ocean Observation Committee may
 22 have for improvements to the System
 23 Plan;

24 “(ix) ensure collaboration among Fed-
 25 eral agencies participating in the activities

1 *of the Interagency Ocean Observation Com-*
 2 *mittee; and*

3 *“(x) perform such additional duties as*
 4 *the Council may delegate.*

5 *“(3) LEAD FEDERAL AGENCY.—*

6 *“(A) IN GENERAL.—The National Oceanic*
 7 *and Atmospheric Administration shall function*
 8 *as the lead Federal agency for the implementa-*
 9 *tion and administration of the System.*

10 *“(B) CONSULTATION REQUIRED.—In car-*
 11 *rying out this paragraph, the Administrator*
 12 *shall consult with the Council, the Interagency*
 13 *Ocean Observation Committee, other Federal*
 14 *agencies that maintain portions of the System,*
 15 *and the regional coastal observing systems.*

16 *“(C) REQUIREMENTS.—In carrying out this*
 17 *paragraph, the Administrator shall—*

18 *“(i) establish and operate an Inte-*
 19 *grated Ocean Observing System Program*
 20 *Office within the National Oceanic and At-*
 21 *mospheric Administration—*

22 *“(I) that utilizes, to the extent*
 23 *necessary, personnel from member*
 24 *agencies participating on the Inter-*

1 *agency Ocean Observation Committee;*
2 *and*

3 “(II) *oversees daily operations*
4 *and coordination of the System;*

5 “(ii) *implement policies, protocols, and*
6 *standards approved by the Council and del-*
7 *egated by the Interagency Ocean Observa-*
8 *tion Committee;*

9 “(iii) *promulgate program guide-*
10 *lines—*

11 “(I) *to certify and integrate re-*
12 *gional associations into the System;*
13 *and*

14 “(II) *to provide regional coastal*
15 *and ocean observation data that meet*
16 *the needs of user groups from the re-*
17 *spective regions;*

18 “(iv) *have the authority to enter into*
19 *and oversee contracts, leases, grants, or co-*
20 *operative agreements with non-Federal as-*
21 *sets, including regional information coordi-*
22 *nation entities, to support the purposes of*
23 *this chapter on such terms as the Adminis-*
24 *trator deems appropriate;*

1 “(v) *implement and maintain a merit-*
2 *based, competitive funding process to sup-*
3 *port non-Federal assets, including the devel-*
4 *opment and maintenance of a network of*
5 *regional coastal observing systems, and de-*
6 *velop and implement a process for the peri-*
7 *odic review and evaluation of the regional*
8 *associations;*

9 “(vi) *provide opportunities for com-*
10 *petitive contracts and grants for demonstra-*
11 *tion projects to design, develop, integrate,*
12 *deploy, maintain, and support components*
13 *of the System;*

14 “(vii) *establish and maintain efficient*
15 *and effective administrative procedures for*
16 *the timely allocation of funds among con-*
17 *tractors, grantees, and non-Federal assets,*
18 *including regional associations;*

19 “(viii) *develop and implement a proc-*
20 *ess for the periodic review and evaluation of*
21 *the regional coastal observing systems;*

22 “(ix) *formulate an annual process by*
23 *which gaps in observation coverage or needs*
24 *for capital improvements of Federal assets*
25 *and non-Federal assets of the System are—*

1 “(I) identified by the regional as-
2 sociations described in the System
3 Plan, the Administrator, or other
4 members of the System; and

5 “(II) submitted to the Interagency
6 Ocean Observation Committee;

7 “(x) develop and be responsible for a
8 data management and communication sys-
9 tem, in accordance with standards and pro-
10 tocols established by the Interagency Ocean
11 Observation Committee, by which all data
12 collected by the System regarding ocean and
13 coastal waters of the United States includ-
14 ing the Great Lakes, are processed, stored,
15 integrated, and made available to all end-
16 user communities;

17 “(xi) not less frequently than once each
18 year, submit to the Interagency Ocean Ob-
19 servation Committee a report on the accom-
20 plishments, operational needs, and perform-
21 ance of the System to contribute to the an-
22 nual and long-term plans prepared pursu-
23 ant to paragraph (2)(B)(i);

24 “(xii) develop and periodically update
25 a plan to efficiently integrate into the Sys-

tem new, innovative, or emerging technologies that have been demonstrated to be useful to the System and which will fulfill the purposes of this chapter and the System Plan; and

“(xiii) work with users and Regional Associations to develop products to enable real-time data sharing for decision makers, including with respect to weather forecasting and modeling, search and rescue operations, corrosive seawater forecasts, water quality monitoring and communication, and harmful algal bloom forecasting.

“(4) REGIONAL COASTAL OBSERVING SYSTEMS.—

“(A) IN GENERAL.—A regional coastal observing system operated by a Regional Association described in the System Plan may not be certified or established under this subtitle unless it—

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

“(ii) meets—

1 “(I) the certification standards
2 and compliance procedure guidelines
3 issued by the Administrator; and

4 “(II) the information needs of
5 user groups in the region while adher-
6 ing to national standards;

7 “(iii) demonstrates an organizational
8 structure, that under funding limitations is
9 capable of—

10 “(I) gathering required System
11 observation data;

12 “(II) supporting and integrating
13 all aspects of coastal and ocean observ-
14 ing and information programs within
15 a region; and

16 “(III) reflecting the needs of State,
17 local, and tribal governments, commer-
18 cial interests, and other users and
19 beneficiaries of the System and other
20 requirements specified under this sub-
21 title and the System Plan;

22 “(iv) identifies—

23 “(I) gaps in observation coverage
24 needs for capital improvements of Fed-

1 *eral assets and non-Federal assets of*
2 *the System; and*

3 *“(II) other recommendations to*
4 *assist in the development of the annual*
5 *and long-term plans prepared pursu-*
6 *ant to paragraph (2)(B)(i) and trans-*
7 *mits such information to the Inter-*
8 *agency Ocean Observation Committee*
9 *via the Program Office established*
10 *under paragraph (3)(C)(i);*

11 *“(v) develops and operates under a*
12 *strategic operational plan that will ensure*
13 *the efficient and effective administration of*
14 *programs and assets to support daily data*
15 *observations for integration into the Sys-*
16 *tem, pursuant to the standards approved by*
17 *the Council;*

18 *“(vi) works cooperatively with govern-*
19 *mental and nongovernmental entities at all*
20 *levels to identify and provide information*
21 *products of the System for multiple users*
22 *within the service area of the regional coast-*
23 *al observing system; and*

24 *“(vii) complies with all financial over-*
25 *sight requirements established by the Ad-*

1 *ministrator, including requirements relat-*
 2 *ing to audits.*

3 *“(B) PARTICIPATION.—For the purposes of*
 4 *this title, employees of Federal agencies are per-*
 5 *mitted to be members of the governing body for*
 6 *the regional coastal observing systems and may*
 7 *participate in the functions of the regional infor-*
 8 *mation coordination entities.”.*

9 *(c) SYSTEM ADVISORY COMMITTEE.—Section 12304(d)*
 10 *of the Integrated Coastal and Ocean Observation System*
 11 *Act of 2009 (33 U.S.C. 3603(d)) is amended—*

12 *(1) in paragraph (1), by striking “or the Inter-*
 13 *agency Ocean Observing Committee.” and inserting*
 14 *“or the Council under this subtitle”; and*

15 *(2) in paragraph (2)—*

16 *(A) in subparagraph (A), by inserting “,*
 17 *data sharing,” after “data management”;*

18 *(B) in subparagraph (C), by striking “and”*
 19 *at the end; and*

20 *(C) by striking subparagraph (D) and in-*
 21 *serting the following:*

22 *“(D) additional priorities, including—*

23 *“(i) a national surface current map-*
 24 *ping network designed to improve fine scale*
 25 *sea surface mapping using high frequency*

1 *radar technology and other emerging tech-*
2 *nologies to address national priorities, in-*
3 *cluding Coast Guard search and rescue op-*
4 *eration planning and harmful algal bloom*
5 *forecasting and detection that—*

6 *“(I) is comprised of existing high*
7 *frequency radar and other sea surface*
8 *current mapping infrastructure oper-*
9 *ated by national programs and re-*
10 *gional associations;*

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

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

1 “(ii) *fleet acquisition for autonomous*
 2 *underwater and surface vehicles for deploy-*
 3 *ment and data integration to fulfill the pur-*
 4 *poses of this Act;*

5 “(iii) *an integrative survey program*
 6 *for application of manned and unmanned*
 7 *vehicles to the real-time or near real-time*
 8 *collection and transmission of sea floor,*
 9 *water column, and sea surface data on biol-*
 10 *ogy, chemistry, geology, physics, and hy-*
 11 *drography;*

12 “(iv) *remote sensing and data assimi-*
 13 *lation to develop new analytical methodolo-*
 14 *gies to assimilate data from the Integrated*
 15 *Ocean Observing System into hydro-*
 16 *dynamic models;*

17 “(v) *integrated, multi-State moni-*
 18 *toring to assess sources, movement, and fate*
 19 *of sediments in coastal regions;*

20 “(vi) *a multi-region marine sound*
 21 *monitoring system to be—*

22 “(I) *planned in consultation with*
 23 *the Interagency Ocean Observation*
 24 *Committee, the National Oceanic and*
 25 *Atmospheric Administration, the De-*

1 *partment of the Navy, and academic*
 2 *research institutions; and*

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

9 *“(E) any other purpose identified by the*
 10 *Administrator or the Council.”;*

11 *(D) in paragraph (3)(B), by inserting “The*
 12 *Administrator may stagger the terms of the Sys-*
 13 *tem advisory committee members.” before “Mem-*
 14 *bers”;* and

15 *(E) in paragraph (4)—*

16 *(i) in subparagraph (A), by striking*
 17 *“and the Interagency Ocean Observing*
 18 *Committee”;* and

19 *(ii) in subparagraph (C), by striking*
 20 *“Observing” and inserting “Observation”.*

21 *(d) CIVIL LIABILITY.—Section 12304(e) of the Inte-*
 22 *grated Coastal and Ocean Observation System Act of 2009*
 23 *(33 U.S.C. 3603(e)) is amended—*

24 *(1) by striking “information coordination enti-*
 25 *ty” and inserting “coastal observing system”; and*

1 (2) by striking “non-Federal asset or regional in-
 2 formation coordination entity,” and inserting “re-
 3 gional coastal observing system,”.

4 **SEC. 5. FINANCING AND AGREEMENTS.**

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

8 “(a) *IN GENERAL.*—To carry out activities under this
 9 subtitle, the Secretary of Commerce may execute an agree-
 10 ment, on a reimbursable or nonreimbursable basis, with
 11 any State or subdivision thereof, any Federal agency, any
 12 public or private organization, or any individual to carry
 13 out activities under this subtitle.”.

14 **SEC. 6. REPORTS TO CONGRESS.**

15 Section 12307 of the Integrated Coastal and Ocean Ob-
 16 servation System Act of 2009 (33 U.S.C. 3606) is amended
 17 to read as follows:

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

19 “(a) *REQUIREMENT.*—Not later than 2 years after
 20 March 30, 2009, and every 3 years thereafter, the Adminis-
 21 trator shall prepare, and the President acting through the
 22 Council shall approve and transmit to the Congress, a re-
 23 port on progress made in implementing this subtitle.

24 “(b) *CONTENTS.*—Each report required under sub-
 25 section (a) shall include—

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

3 “(2) an evaluation of the effectiveness of the Sys-
4 tem, including an evaluation of progress made by the
5 Council to achieve the goals identified under the Sys-
6 tem Plan;

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

13 “(4) a review of procurements, planned or initi-
14 ated, by each Council agency to enhance, expand, or
15 modernize the observation capabilities and data prod-
16 ucts provided by the System, including data manage-
17 ment and communication subsystems;

18 “(5) a summary of the existing gaps in observa-
19 tion infrastructure and monitoring data collection,
20 including—

21 “(A) priorities considered by the System ad-
22 visory committee;

23 “(B) the national sea surface current map-
24 ping network;

25 “(C) coastal buoys;

- 1 “(D) ocean chemistry monitoring;
 2 “(E) marine sound monitoring; and
 3 “(F) autonomous underwater and surface
 4 vehicle technology gaps;
 5 “(6) an assessment regarding activities to inte-
 6 grate Federal and non-Federal assets, nationally and
 7 on the regional level, and discussion of the perform-
 8 ance and effectiveness of regional information coordi-
 9 nation entities to coordinate regional observation op-
 10 erations;
 11 “(7) a description of benefits of the program to
 12 users of data products resulting from the System (in-
 13 cluding the general public, industries, scientists, re-
 14 source managers, emergency responders, policy mak-
 15 ers, and educators);
 16 “(8) recommendations concerning—
 17 “(A) modifications to the System; and
 18 “(B) funding levels for the System in subse-
 19 quent fiscal years; and
 20 “(9) the results of a periodic external inde-
 21 pendent programmatic audit of the System.”.

22 **SEC. 7. PUBLIC-PRIVATE USE POLICY.**

23 Section 12308 of the Integrated Coastal and Ocean Ob-
 24 servation System Act of 2009 (33 U.S.C. 3607) is amended
 25 to read as follows:

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

2 *“The Council shall maintain a policy that defines*
 3 *processes for making decisions about the roles of the Federal*
 4 *Government, the States, regional information coordination*
 5 *entities, the academic community, and the private sector*
 6 *in providing to end-user communities environmental infor-*
 7 *mation, products, technologies, and services related to the*
 8 *System. The Administrator shall ensure that National Oce-*
 9 *anic and Atmospheric Administration adheres to the deci-*
 10 *sion making process developed by the Council regarding the*
 11 *roles of the Federal Government, the States, the regional*
 12 *coastal observing systems, the academic communities, and*
 13 *the private sector in providing the end-user communities*
 14 *environmental information, data products, technologies,*
 15 *and services related to the System.”.*

16 **SEC. 8. REPEAL OF INDEPENDENT COST ESTIMATE.**

17 *(a) IN GENERAL.—The Integrated Coastal and Ocean*
 18 *Observation System Act of 2009 (33 U.S.C. 3601 et seq.)*
 19 *is amended by striking section 12309 (33 U.S.C. 3608).*

20 *(b) TABLE OF CONTENTS AMENDMENT.—The table of*
 21 *contents in section 1(b) of the Omnibus Public Land Man-*
 22 *agement Act of 2009 (Public Law 111–11; 123 Stat. 991)*
 23 *is amended by striking the item related to section 12309.*

1 **SEC. 9. AUTHORIZATION OF APPROPRIATIONS.**

2 *Section 12311 of the Integrated Coastal and Ocean Ob-*
 3 *ervation System Act of 2009 (33 U.S.C. 3610) is amended*
 4 *by striking “2013” and inserting “2019”.*

5 **SEC. 10. REPORTS AND RESEARCH PLANS.**

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

9 *“(4) ECONOMIC VULNERABILITY REPORT.—*

10 *“(A) IN GENERAL.—Not later than 2 years*
 11 *after the date of the enactment of the Coordi-*
 12 *nated Ocean Monitoring and Research Act, and*
 13 *every 5 years thereafter, the Subcommittee shall*
 14 *transmit to appropriate committees of Congress*
 15 *a report that—*

16 *“(i) is named ‘The Ocean Chemistry*
 17 *Coastal Community Vulnerability Assess-*
 18 *ment’;*

19 *“(ii) identifies gaps in ocean acidifica-*
 20 *tion monitoring by public, academic, and*
 21 *private assets in the network of regional*
 22 *coastal observing systems;*

23 *“(iii) identifies geographic areas which*
 24 *have gaps in ocean acidification research;*

25 *“(iv) identifies United States coastal*
 26 *communities, including fishing commu-*

1 *nities, low-population rural communities,*
2 *tribal and subsistence communities, and is-*
3 *land communities, that may be impacted by*
4 *ocean acidification;*

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

11 *“(vi) identifies gaps in understanding*
12 *of the impacts of ocean acidification on eco-*
13 *nomically or commercially important spe-*
14 *cies, particularly those which support*
15 *United States commercial, recreational, and*
16 *tribal fisheries and aquaculture;*

17 *“(vii) identifies habitats that may be*
18 *particularly vulnerable to corrosive sea*
19 *water, including areas experiencing mul-*
20 *tiple stressors such as hypoxia, sedimenta-*
21 *tion, and harmful algal blooms;*

22 *“(viii) identifies areas in which exist-*
23 *ing Integrated Ocean Observing System as-*
24 *sets, including buoys and gliders, may be le-*
25 *veraged as platforms for the deployment of*

1 *new sensors or other applicable observing*
 2 *technologies; and*

3 “(ix) *is written in collaboration with*
 4 *the agencies responsible for carrying out*
 5 *this Act.*

6 “(B) *FORM OF REPORT.—*

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

11 “(ii) *SUBSEQUENT REPORTS.—Each*
 12 *report required under subparagraph (A)*
 13 *after the initial report—*

14 “(I) *may describe the information*
 15 *described in clauses (i) through (ix) on*
 16 *a national level; or*

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

21 “(iii) *REGIONAL REPORTS.—If the*
 22 *Subcommittee opts to prepare a report re-*
 23 *quired under subparagraph (A) as separate*
 24 *regional reports under clause (ii)(II), the*
 25 *Subcommittee shall submit a report for each*

1 *region of the National Oceanic and Atmos-*
 2 *pheric Administration not less frequently*
 3 *than once during each 5-year reporting pe-*
 4 *riod.*

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

14 “(5) *MONITORING PRIORITIZATION PLAN.*—*Not*
 15 *later than 180 days after the date of the submission*
 16 *of the initial report under paragraph (4)(A), the Sub-*
 17 *committee shall transmit to the appropriate commit-*
 18 *tees of Congress a report that develops a plan to de-*
 19 *ploy new sensors or other applicable observing tech-*
 20 *nologies—*

21 “(A) *based on such initial report;*

22 “(B) *prioritized by—*

23 “(i) *the threat to coastal economies and*
 24 *ecosystems;*

25 “(ii) *gaps in data; and*

1 “(iii) research needs; and
 2 “(C) that leverage existing platforms, where
 3 possible.”.

4 **SEC. 11. STRATEGIC RESEARCH PLAN.**

5 (a) *CONTENTS.*—Section 12405(b) of the Federal
 6 *Ocean Acidification Research And Monitoring Act of 2009*
 7 (33 U.S.C. 3704(b)) is amended—

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

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

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

13 “(10) make recommendations for research to be
 14 conducted, including in the social sciences and eco-
 15 nomics, to address the key knowledge gaps identified
 16 in the economic vulnerability report conducted under
 17 section 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 combined effects of
 23 changes in ocean chemistry, sediment delivery, hy-
 24 poxia, and harmful algal blooms and the impact these
 25 processes have on each other, and how these multiple

1 *stressors impact living marine resources 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 re-*
 6 *cycling, species and genetic diversity, applied tech-*
 7 *nologies, aquaculture methodologies, and management*
 8 *recommendations.”.*

9 **SEC. 12. STAKEHOLDER INPUT ON MONITORING.**

10 *Section 12406(a) of the Federal Ocean Acidification*
 11 *Research And Monitoring Act of 2009 (33 U.S.C. 3705(a))*
 12 *is amended—*

13 *(1) in paragraph (2), by striking “and” at the*
 14 *end;*

15 *(2) in paragraph (3), by striking the period at*
 16 *the end and inserting a semicolon and “and”; and*

17 *(3) by adding at the end the following:*

18 *“(4) includes an ongoing mechanism that allows*
 19 *potentially affected industry members, coastal stake-*
 20 *holders, fishery management councils and commis-*
 21 *sions, non-Federal resource managers, and scientific*
 22 *experts to provide input on monitoring needs that are*
 23 *necessary to support on the ground management, de-*
 24 *cision making, and adaptation related to ocean acidi-*
 25 *fication.”.*

1 **SEC. 13. RESEARCH ACTIVITIES.**

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

5 “(a) *RESEARCH ACTIVITIES.*—*The Director of the Na-*
6 *tional Science Foundation shall continue to carry out re-*
7 *search activities on ocean acidification which shall support*
8 *competitive, merit-based, peer-reviewed proposals for re-*
9 *search, observatories and monitoring of ocean acidification*
10 *and its impacts, including—*

11 “(1) *impacts on marine organisms and marine*
12 *ecosystems;*

13 “(2) *impacts on ocean, coastal, and estuarine*
14 *biogeochemistry;*

15 “(3) *the development of methodologies and tech-*
16 *nologies to evaluate ocean acidification and its im-*
17 *pacts; and*

18 “(4) *impacts of multiple stressors on ecosystems*
19 *exhibiting hypoxia, harmful algal blooms, or sediment*
20 *delivery, combined with changes in ocean chemistry.”.*

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A BILL

To reauthorize the Integrated Coastal and Ocean
Observation System Act of 2009, and for other
purposes.

NOVEMBER 27, 2017

Reported with an amendment