

Calendar No. 636

114TH CONGRESS
2D SESSION**S. 1886****[Report No. 114–354]**

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

IN THE SENATE OF THE UNITED STATES

JULY 29, 2015

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

SEPTEMBER 20, 2016

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,*

3 **SECTION 1. SHORT TITLE.**

4 This Act may be cited as the “Coordinated Ocean
5 Monitoring and Research Act”.

1 **SEC. 2. PURPOSES.**

2 Section 12302 of the Integrated Coastal and Ocean
3 Observation System Act of 2009 (33 U.S.C. 3601) is
4 amended 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
9 observing systems, comprised of Federal and non-
10 Federal components coordinated at the national level
11 by the Council and at the regional level by a network
12 of Regional Coastal Observing Systems, and that in-
13 cludes in situ, remote, and other coastal and ocean
14 observation and modeling capabilities, technologies,
15 data management systems, communication systems,
16 and product development systems, and is designed to
17 address 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;

23 “(B) to support national defense, search
24 and rescue operations, marine commerce, navi-
25 gation safety, weather, climate, and marine
26 forecasting, energy siting and production, eco-

1 nomic development, ecosystem-based marine,
2 coastal, and Great Lakes resource management,
3 public safety, and public outreach and edu-
4 cation;

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

9 “(D) to provide easy access to ocean,
10 coastal, and Great Lakes data and promote
11 data sharing between Federal and non-Federal
12 sources and promote public data sharing;

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

18 “(F) to monitor and model changes in
19 ocean chemistry;

20 “(2) to improve the Nation’s capability to meas-
21 ure, track, observe, understand, and predict events
22 related directly and indirectly to weather and climate
23 change, natural climate variability, and interactions
24 between the oceanic and atmospheric environments,
25 including the Great Lakes; and

1 “(3) to authorize activities—

2 “(A) to promote basic and applied research
3 to develop, test, and deploy innovations and im-
4 provements in coastal and ocean observation
5 technologies, including advanced observing tech-
6 nologies needed to address critical data gaps;
7 modeling systems; other scientific and techno-
8 logical capabilities to improve the under-
9 standing of weather and climate, ocean-atmos-
10 phere dynamics, global climate change, and the
11 physical, chemical, and biological dynamics of
12 the ocean, coastal and Great Lakes environ-
13 ments; and

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

16 **SEC. 3. DEFINITIONS.**

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

20 (1) in paragraph (5), by striking “States, re-
21 gional organizations, universities, nongovernmental
22 organizations, or the private sector.” and inserting
23 “the regional coastal observing systems, the Na-
24 tional Oceanic and Atmospheric Administration, or
25 the Interagency Ocean Observation Committee.”;

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

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

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

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

21 ~~(a) SYSTEM ELEMENTS.—~~

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

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

4 “(A) Federal assets to fulfill national and
 5 international observation missions and prior-
 6 ities;

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

12 “(C) data management, communication,
 13 and modeling systems for the timely integration
 14 and dissemination of data and information
 15 products from the System;

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

20 “(E) a research and development program
 21 conducted under the guidance of the Council,
 22 consisting of—

23 “(i) basic and applied research and
 24 technology development—

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

4 “(II) to ensure improvement of
5 operational assets and products, in-
6 cluding related infrastructure, observ-
7 ing technologies, and information and
8 data processing and management
9 technologies;

10 “(ii) an advanced observing tech-
11 nology development program to fill gaps in
12 technology;

13 “(iii) large scale computing resources
14 and research to advance modeling of coast-
15 al and ocean processes;

16 “(iv) models to improve regional
17 weather forecasting capabilities and re-
18 gional weather forecasting products; and

19 “(v) reviews of data collection proce-
20 dures across regions and programs to
21 make recommendations for data collection
22 standards across the System to meet na-
23 tional ocean observation, applied research,
24 and weather forecasting needs.”.

1 (2) AVAILABILITY OF DATA.—Paragraph (3) of
 2 section 12304(b) of the Integrated Coastal and
 3 Ocean Observation System Act of 2009 (33 U.S.C.
 4 3603(b)) is amended by striking the period at the
 5 end and inserting “for research and for use in the
 6 development of products to address societal needs.”.

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

11 (A) in the paragraph heading, by striking
 12 “NON-FEDERAL” and inserting “COORDINA-
 13 TION OF NON-FEDERAL”; and

14 (B) by inserting “; the regional coastal ob-
 15 serving system,” after “Interagency Ocean Ob-
 16 serving Committee”.

17 (b) POLICY OVERSIGHT, ADMINISTRATION, AND RE-
 18 GIONAL COORDINATION.—Section 12304(e) of the Inte-
 19 grated Coastal and Ocean Observation System Act of
 20 2009 (33 U.S.C. 3603(e)) is amended by striking para-
 21 graphs (2), (3), and (4), and inserting the following:

22 “(2) INTERAGENCY OCEAN OBSERVATION COM-
 23 MITTEE.—

24 “(A) ESTABLISHMENT.—The Council shall
 25 establish or designate a committee which shall

1 be known as the Interagency Ocean Observation
2 Committee.

3 “(B) DUTIES.—The Interagency Ocean
4 Observation Committee shall—

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

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

17 “(I) to operate all elements of
18 the System identified in subsection
19 (b); and

20 “(II) to ensure continuity of data
21 streams from Federal and non-Fed-
22 eral assets;

23 “(iii) establish requirements for obser-
24 vation data variables to be gathered by
25 both Federal and non-Federal assets and

1 identify, in consultation with regional in-
2 formation coordination entities, priorities
3 for System observations;

4 “(iv) establish and define protocols
5 and standards for System data processing,
6 management, collection, configuration
7 standards, formats, and communication for
8 new and existing assets throughout the In-
9 tegrated Ocean Observing System network;

10 “(v) develop contract requirements for
11 each Regional Coastal Observing System—

12 “(I) to establish eligibility for in-
13 tegration into the System;

14 “(II) to ensure compliance with
15 all applicable standards and protocols
16 established by the Council; and

17 “(III) to ensure that regional ob-
18 servations are integrated into the Sys-
19 tem on a sustained basis;

20 “(vi) identify gaps in observation cov-
21 erage or needs for capital improvements of
22 both Federal assets and non-Federal as-
23 sets;

24 “(vii) subject to the availability of ap-
25 propriations, establish through one or more

1 participating Federal agencies, in consulta-
2 tion with the System advisory committee
3 established under subsection (d), a com-
4 petitive matching grant or other pro-
5 grams—

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

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

16 “(viii) periodically—

17 “(I) review the System Plan; and

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

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

of the Interagency Ocean Observation
Committee; and

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

~~“(3) LEAD FEDERAL AGENCY.—~~

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

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

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

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

~~“(I) that utilizes, to the extent
necessary, personnel from member
agencies participating on the Inter-~~

1 agency Ocean Observation Committee;
2 and

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

5 “(ii) implement policies, protocols,
6 and standards approved by the Council
7 and delegated by the Interagency Ocean
8 Observation 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 de-
4 velopment and maintenance of a network
5 of Regional Coastal Observing Systems,
6 and develop and implement a process for
7 the periodic review and evaluation of the
8 regional associations;

9 “(vi) provide opportunities for com-
10 petitive contracts and grants for dem-
11 onstration projects to design, develop, inte-
12 grate, deploy, maintain, and support com-
13 ponents of the System;

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

19 “(viii) develop and implement a proc-
20 ess for the periodic review and evaluation
21 of the Regional Coastal Observing Sys-
22 tems;

23 “(ix) formulate an annual process by
24 which gaps in observation coverage or
25 needs for capital improvements of Federal

1 assets and non-Federal assets of the Sys-
2 tem are—

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

7 “(H) submitted to the Inter-
8 agency Ocean Observing Committee;

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

19 “(xi) not less frequently than once
20 each year, submit to the Interagency
21 Ocean Observing Observation Committee a
22 report on the accomplishments, operational
23 needs, and performance of the System to
24 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 Sys-
tem new, innovative, or emerging tech-
nologies that have been demonstrated to be
useful to the System and which will fulfill
the purposes of this chapter and the Sys-
tem Plan; and

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

“(4) REGIONAL COASTAL OBSERVING SYS-

TEMS.—

“(A) IN GENERAL.—A Regional Coastal
Observing System operated by a Regional Asso-
ciation described in the System Plan may not
be certified or established under this subtitle
unless it—

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

4 “(ii) meets—

5 “(I) the certification standards
6 and compliance procedure guidelines
7 issued by the Administrator; and

8 “(II) the information needs of
9 user groups in the region while adher-
10 ing to national standards;

11 “(iii) demonstrates an organizational
12 structure, that under funding limitations is
13 capable of—

14 “(I) gathering required System
15 observation data;

16 “(II) supporting and integrating
17 all aspects of coastal and ocean ob-
18 serving and information programs
19 within a region; and

20 “(III) reflecting the needs of
21 State, local, and tribal governments,
22 commercial interests, and other users
23 and beneficiaries of the System and
24 other requirements specified under
25 this subtitle and the System Plan;

1 “(iv) identifies—

2 “(I) gaps in observation coverage
3 needs for capital improvements of
4 Federal assets and non-Federal assets
5 of the System; and

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

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

21 “(vi) works cooperatively with govern-
22 mental and nongovernmental entities at all
23 levels to identify and provide information
24 products of the System for multiple users

1 within the service area of the regional
2 coastal observing system; and

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

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

13 (e) SYSTEM ADVISORY COMMITTEE.—Section
14 12304(d) of the Integrated Coastal and Ocean Observa-
15 tion System Act of 2009 (33 U.S.C. 3603(d)) is amend-
16 ed—

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

20 (2) in paragraph (2)—

21 (A) in subparagraph (A), by inserting
22 “data sharing,” after “data management”;

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

1 (C) by striking subparagraph (D) and in-
2 serting the following:

3 “(D) additional priorities, including—

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

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

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

23 “(III) follows a deployment plan
24 that prioritizes closing gaps in high
25 frequency radar infrastructure in the

1 United States, starting with areas
2 demonstrating significant sea surface
3 current data needs, especially in areas
4 where additional data will improve
5 Coast Guard search and rescue mod-
6 els;

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

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

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

23 “(v) integrated, multi-State moni-
24 toring to assess sources, movement and
25 fate of sediments in coastal regions; and

1 “(vi) a multi-region marine sound
2 monitoring system to be—

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

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

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

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

19 (E) in paragraph (4)—

20 (i) in subparagraph (A), by striking
21 “and the Interagency Ocean Observing
22 Committee”; and

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

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

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

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

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

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

13 “(a) IN GENERAL.—To carry out interagency activi-
 14 ties under this subtitle, 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, or any public or private organization, or indi-
 18 vidual to carry out interagency activities under this sub-
 19 title.”.

20 **SEC. 6. REPORTS TO CONGRESS.**

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

24 “(a) REQUIREMENT.—Not later than 2 years after
 25 March 30, 2009, and every 3 years thereafter, the Admin-

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

4 “(b) CONTENTS.—Each report required by 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) identification of Federal and non-Federal
 13 assets as determined by the Council that have been
 14 integrated into the System, including assets essential
 15 to the gathering of required observation data vari-
 16 ables necessary to meet the respective missions of
 17 Council agencies;

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

23 “(5) a summary of the existing gaps in observa-
 24 tion infrastructure and monitoring data collection,
 25 including—

1 “(A) priorities considered by the System
2 advisory committee;

3 “(B) the national sea surface current map-
4 ping network;

5 “(C) coastal buoys; and

6 “(D) ocean chemistry monitoring;

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

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

18 “(8) recommendations concerning—

19 “(A) modifications to the System; and

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

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

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

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

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

19 **SEC. 8. INDEPENDENT COST ESTIMATE.**

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

23 **SEC. 9. AUTHORIZATION OF APPROPRIATIONS.**

24 Section ~~12311~~ of the Integrated Coastal and Ocean
25 Observation System Act of 2009 (~~33~~ U.S.C. ~~3610~~) is

1 amended by striking section “2013” and inserting
 2 “2019”.

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

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

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

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

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

22 “(C) identifies areas which have gaps in
 23 ocean acidification research;

24 “(D) identifies United States coastal com-
 25 munities, including fishing communities, low-

1 population rural communities, tribal and sub-
2 sistence communities, and island communities,
3 that may be impacted by ocean acidification;

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

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

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

20 “(H) identifies areas in which existing In-
21 tegrated Ocean Observing System assets, in-
22 cluding buoys and gliders, that may be lever-
23 aged as platforms for the deployment of new
24 sensors; and

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

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

12 “(A) based on the report required by para-
13 graph (4);

14 “(B) prioritized by—

15 “(i) the threat to coastal economies
16 and ecosystems;

17 “(ii) gaps in data; and

18 “(iii) research needs; and

19 “(C) that leverage existing platforms;
20 where possible.”.

21 **SEC. 11. STRATEGIC RESEARCH PLAN.**

22 (a) **CONTENTS.**—Section 12405(b) of the Federal
23 Ocean Acidification Research And Monitoring Act of 2009
24 (~~33 U.S.C. 3704(b)~~) is amended—

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

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

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

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

11 (b) PROGRAM ELEMENTS.—Section 12405(e) of the
12 Federal Ocean Acidification Research And Monitoring Act
13 of 2009 (33 U.S.C. 3704(c)) is amended by adding at the
14 end the following:

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

21 “(7) Applied research to identify adaptation
22 strategies for species impacted by changes in ocean
23 chemistry including vegetation-based systems, shell
24 recycling, species and genetic diversity, applied tech-

1 nologies, aquaculture methodologies, and manage-
 2 ment recommendations.”.

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

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

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

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

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

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

20 **SEC. 13. RESEARCH ACTIVITIES.**

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

24 “(a) **RESEARCH ACTIVITIES.**—The Director of the
 25 National Science Foundation shall continue to carry out

1 research activities on ocean acidification which shall sup-
 2 port competitive, merit-based, peer-reviewed proposals for
 3 research, observatories and monitoring of ocean acidifica-
 4 tion and its impacts, including—

5 “(1) impacts on marine organisms and marine
 6 ecosystems;

7 “(2) impacts on ocean, coastal, and estuarine
 8 biogeochemistry;

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

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

16 **SECTION 1. SHORT TITLE.**

17 *This Act may be cited as the “Coordinated Ocean Mon-
 18 itoring and Research Act”.*

19 **SEC. 2. PURPOSES.**

20 *Section 12302 of the Integrated Coastal and Ocean Ob-
 21 servation System Act of 2009 (33 U.S.C. 3601) is amended
 22 to read as follows:*

23 **“SEC. 12302. PURPOSES.**

24 *“The purposes of this subtitle are—*

1 “(1) to establish and sustain a national inte-
 2 grated System of ocean, coastal, and Great Lakes ob-
 3 serving systems, comprised of Federal and non-Fed-
 4 eral components coordinated at the national level by
 5 the Council and at the regional level by a network of
 6 Regional Coastal Observing Systems, and that in-
 7 cludes in situ, remote, and other coastal and ocean
 8 observation and modeling capabilities, technologies,
 9 data management systems, communication systems,
 10 and product development systems, and is designed to
 11 address regional and national needs for ocean and
 12 coastal information, to gather specific data on key
 13 coastal, ocean, and Great Lakes variables, and to en-
 14 sure timely and sustained dissemination and avail-
 15 ability of these data—

16 “(A) to the public;

17 “(B) to support national defense, search
 18 and rescue operations, marine commerce, navi-
 19 gation safety, weather, climate, and marine fore-
 20 casting, energy siting and production, economic
 21 development, ecosystem-based marine, coastal,
 22 and Great Lakes resource management, public
 23 safety, and public outreach and education;

24 “(C) to promote greater public awareness
 25 and stewardship of the Nation’s ocean, coastal,

1 *and Great Lakes resources and the general public*
 2 *welfare;*

3 “(D) *to provide easy access to ocean, coast-*
 4 *al, and Great Lakes data and promote data*
 5 *sharing between Federal and non-Federal sources*
 6 *and promote public data sharing;*

7 “(E) *to enable advances in scientific under-*
 8 *standing to support the sustainable use, con-*
 9 *servation, management, and understanding of*
 10 *healthy ocean, coastal, and Great Lakes re-*
 11 *sources; and*

12 “(F) *to monitor and model changes in*
 13 *ocean chemistry;*

14 “(2) *to improve the Nation’s capability to meas-*
 15 *ure, track, observe, understand, and predict events re-*
 16 *lated directly and indirectly to weather and climate*
 17 *change, natural climate variability, and interactions*
 18 *between the oceanic and atmospheric environments,*
 19 *including the Great Lakes; and*

20 “(3) *to authorize activities—*

21 “(A) *to promote basic and applied research*
 22 *to develop, test, and deploy innovations and im-*
 23 *provements in coastal and ocean observation*
 24 *technologies, including advanced observing tech-*
 25 *nologies needed to address critical data gaps,*

1 *modeling systems, other scientific and techno-*
 2 *logical capabilities to improve the understanding*
 3 *of weather and climate, ocean-atmosphere dy-*
 4 *namics, global climate change, and the physical,*
 5 *chemical, and biological dynamics of the ocean,*
 6 *coastal and Great Lakes environments; and*

7 *“(B) to conserve healthy and restore de-*
 8 *graded coastal ecosystems.”.*

9 **SEC. 3. DEFINITIONS.**

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

13 *(1) in paragraph (5), by striking “States, re-*
 14 *gional organizations, universities, nongovernmental*
 15 *organizations, or the private sector.” and inserting*
 16 *“the regional coastal observing systems, the National*
 17 *Oceanic and Atmospheric Administration, or the*
 18 *Interagency Ocean Observation Committee.”;*

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

21 *“(6) REGIONAL COASTAL OBSERVING SYSTEM.—*
 22 *The term ‘regional coastal observing system’ means*
 23 *an organizational body that is certified or established*
 24 *by contract or memorandum by the lead Federal*
 25 *agency designated in section 12304(c)(3) and coordi-*

1 *nates State, Federal, local, tribal, and private inter-*
 2 *ests at a regional level with the responsibility of en-*
 3 *gaging the private and public sectors in designing,*
 4 *operating, and improving regional coastal and ocean*
 5 *observing systems in order to ensure the provision of*
 6 *data and information that meet the needs of user*
 7 *groups from the respective regions.”; and*

8 *(3) in paragraph (7), by striking “National Oce-*
 9 *anic and Atmospheric Administration.” and inserting*
 10 *“Administrator.”.*

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

13 *(a) SYSTEM ELEMENTS.—*

14 *(1) IN GENERAL.—Section 12304(b) of the Inte-*
 15 *grated Coastal and Ocean Observation System Act of*
 16 *2009 (33 U.S.C. 3603(b)) is amended by striking*
 17 *paragraph (1) and inserting the following:*

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

21 *“(A) Federal assets to fulfill national and*
 22 *international observation missions and prior-*
 23 *ities;*

24 *“(B) non-Federal assets, including a net-*
 25 *work of regional coastal observing systems iden-*

1 *tified under subsection (c)(4), to fulfill regional*
 2 *and national observation missions and prior-*
 3 *ities;*

4 “(C) *data management, communication,*
 5 *and modeling systems for the timely integration*
 6 *and dissemination of data and information*
 7 *products from the System;*

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

11 “(E) *a research and development program*
 12 *conducted under the guidance of the Council,*
 13 *consisting of—*

14 “(i) *basic and applied research and*
 15 *technology development—*

16 “(I) *to improve understanding of*
 17 *coastal and ocean systems and their re-*
 18 *lationships to human activities; and*

19 “(II) *to ensure improvement of*
 20 *operational assets and products, in-*
 21 *cluding related infrastructure, observ-*
 22 *ing technologies, and information and*
 23 *data processing and management tech-*
 24 *nologies;*

1 “(ii) an advanced observing technology
2 development program to fill gaps in tech-
3 nology;

4 “(iii) large scale computing resources
5 and research to advance modeling of coastal
6 and ocean processes;

7 “(iv) models to improve regional
8 weather forecasting capabilities and re-
9 gional weather forecasting products; and

10 “(v) reviews of data collection proce-
11 dures across regions and programs to make
12 recommendations for data collection stand-
13 ards across the System to meet national
14 ocean observation, applied research, and
15 weather forecasting needs.”.

16 (2) *AVAILABILITY OF DATA.*—Paragraph (3) of
17 section 12304(b) of the Integrated Coastal and Ocean
18 Observation System Act of 2009 (33 U.S.C. 3603(b))
19 is amended by striking the period at the end and in-
20 serting “for research and for use in the development
21 of products to address societal needs.”.

22 (3) *COORDINATION OF NON-FEDERAL ASSETS.*—
23 Paragraph (4) of section 12304(b) of the Integrated
24 Coastal and Ocean Observation System Act of 2009
25 (33 U.S.C. 3603(b)) is amended—

1 (A) in the paragraph heading, by striking
2 “NON-FEDERAL” and inserting “COORDINATION
3 OF NON-FEDERAL”; and

4 (B) by inserting “, the regional coastal ob-
5 serving system,” after “Interagency Ocean Ob-
6 serving Committee”.

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

12 “(2) *INTERAGENCY OCEAN OBSERVATION COM-*
13 *MITTEE.*—

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

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

20 “(i) prepare annual and long-term
21 plans for consideration and approval by the
22 Council for the integrated design, operation,
23 maintenance, enhancement, and expansion
24 of the System to meet the objectives of this
25 chapter and the System Plan;

1 “(ii) develop and transmit to Congress,
2 along with the budget submitted by the
3 President to Congress pursuant to section
4 1105(a) of title 31, United States Code, an
5 annual coordinated, comprehensive budg-
6 et—

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

10 “(II) to ensure continuity of data
11 streams from Federal and non-Federal
12 assets;

13 “(iii) establish requirements for obser-
14 vation data variables to be gathered by both
15 Federal and non-Federal assets and iden-
16 tify, in consultation with regional informa-
17 tion coordination entities, priorities for
18 System observations;

19 “(iv) establish and define protocols and
20 standards for System data processing, man-
21 agement, collection, configuration stand-
22 ards, formats, and communication for new
23 and existing assets throughout the Inte-
24 grated Ocean Observing System network;

1 “(v) develop contract requirements for
2 each Regional Coastal Observing System—

3 “(I) to establish eligibility for in-
4 tegration into the System;

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

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

11 “(vi) identify gaps in observation cov-
12 erage or needs for capital improvements of
13 both Federal assets and non-Federal assets;

14 “(vii) subject to the availability of ap-
15 propriations, establish through 1 or more
16 participating Federal agencies, in consulta-
17 tion with the System advisory committee es-
18 tablished under subsection (d), a competi-
19 tive matching grant or other programs—

20 “(I) to promote intramural and
21 extramural research and development
22 of new, innovative, and emerging ob-
23 servation technologies including testing
24 and field trials; and

1 “(II) to facilitate the migration of
 2 new, innovative, and emerging sci-
 3 entific and technological advances from
 4 research and development to oper-
 5 ational deployment;

6 “(viii) periodically—

7 “(I) review the System Plan; and

8 “(II) submit to the Council such
 9 recommendations as the Interagency
 10 Ocean Observation Committee may
 11 have for improvements to the System
 12 Plan;

13 “(ix) ensure collaboration among Fed-
 14 eral agencies participating in the activities
 15 of the Interagency Ocean Observation Com-
 16 mittee; and

17 “(x) perform such additional duties as
 18 the Council may delegate.

19 “(3) LEAD FEDERAL AGENCY.—

20 “(A) IN GENERAL.—The National Oceanic
 21 and Atmospheric Administration shall function
 22 as the lead Federal agency for the implementa-
 23 tion and administration of the System.

24 “(B) CONSULTATION REQUIRED.—In car-
 25 rying out this paragraph, the Administrator

1 *shall consult with the Council, the Interagency*
 2 *Ocean Observation Committee, other Federal*
 3 *agencies that maintain portions of the System,*
 4 *and the Regional Coastal Observing Systems.*

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

7 “(i) *establish and operate an Inte-*
 8 *grated Ocean Observing System Program*
 9 *Office within the National Oceanic and At-*
 10 *mospheric Administration—*

11 “(I) *that utilizes, to the extent*
 12 *necessary, personnel from member*
 13 *agencies participating on the Inter-*
 14 *agency Ocean Observation Committee;*
 15 *and*

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

18 “(ii) *implement policies, protocols, and*
 19 *standards approved by the Council and del-*
 20 *egated by the Interagency Ocean Observa-*
 21 *tion Committee;*

22 “(iii) *promulgate program guide-*
 23 *lines—*

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

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

8 “(iv) have the authority to enter into
9 and oversee contracts, leases, grants, or co-
10 operative agreements with non-Federal as-
11 sets, including regional information coordi-
12 nation entities, to support the purposes of
13 this chapter on such terms as the Adminis-
14 trator deems appropriate;

15 “(v) implement and maintain a merit-
16 based, competitive funding process to sup-
17 port non-Federal assets, including the devel-
18 opment and maintenance of a network of
19 Regional Coastal Observing Systems, and
20 develop and implement a process for the
21 periodic review and evaluation of the re-
22 gional associations;

23 “(vi) provide opportunities for com-
24 petitive contracts and grants for demonstra-
25 tion projects to design, develop, integrate,

1 *deploy, maintain, and support components*
 2 *of the System;*

3 “(vii) *establish and maintain efficient*
 4 *and effective administrative procedures for*
 5 *the timely allocation of funds among con-*
 6 *tractors, grantees, and non-Federal assets,*
 7 *including regional associations;*

8 “(viii) *develop and implement a proc-*
 9 *ess for the periodic review and evaluation of*
 10 *the Regional Coastal Observing Systems;*

11 “(ix) *formulate an annual process by*
 12 *which gaps in observation coverage or needs*
 13 *for capital improvements of Federal assets*
 14 *and non-Federal assets of the System are—*

15 “(I) *identified by the regional as-*
 16 *sociations described in the System*
 17 *Plan, the Administrator, or other*
 18 *members of the System; and*

19 “(II) *submitted to the Interagency*
 20 *Ocean Observing Committee;*

21 “(x) *develop and be responsible for a*
 22 *data management and communication sys-*
 23 *tem, in accordance with standards and pro-*
 24 *ocols established by the Interagency Ocean*
 25 *Observing Committee, by which all data col-*

1 lected by the System regarding ocean and
2 coastal waters of the United States includ-
3 ing the Great Lakes, are processed, stored,
4 integrated, and made available to all end-
5 user communities;

6 “(xi) not less frequently than once each
7 year, submit to the Interagency Ocean Ob-
8 serving Observation Committee a report on
9 the accomplishments, operational needs, and
10 performance of the System to contribute to
11 the annual and long-term plans prepared
12 pursuant to paragraph (2)(B)(i);

13 “(xii) develop and periodically update
14 a plan to efficiently integrate into the Sys-
15 tem new, innovative, or emerging tech-
16 nologies that have been demonstrated to be
17 useful to the System and which will fulfill
18 the purposes of this chapter and the System
19 Plan; and

20 “(xiii) work with users and Regional
21 Associations to develop products to enable
22 real-time data sharing for decision makers,
23 including with respect to weather fore-
24 casting and modeling, search and rescue op-
25 erations, corrosive seawater forecasts, water

1 *quality monitoring and communication,*
 2 *and harmful algal bloom forecasting.*

3 “(4) *REGIONAL COASTAL OBSERVING SYSTEMS.*—

4 “(A) *IN GENERAL.*—*A Regional Coastal Ob-*
 5 *serving System operated by a Regional Associa-*
 6 *tion described in the System Plan may not be*
 7 *certified or established under this subtitle unless*
 8 *it—*

9 “(i) *has been or shall be certified or es-*
 10 *tablished by contract or agreement by the*
 11 *Administrator;*

12 “(ii) *meets—*

13 “(I) *the certification standards*
 14 *and compliance procedure guidelines*
 15 *issued by the Administrator; and*

16 “(II) *the information needs of*
 17 *user groups in the region while adher-*
 18 *ing to national standards;*

19 “(iii) *demonstrates an organizational*
 20 *structure, that under funding limitations is*
 21 *capable of—*

22 “(I) *gathering required System*
 23 *observation data;*

24 “(II) *supporting and integrating*
 25 *all aspects of coastal and ocean observ-*

1 *ing and information programs within*
2 *a region; and*

3 *“(III) reflecting the needs of State,*
4 *local, and tribal governments, commer-*
5 *cial interests, and other users and*
6 *beneficiaries of the System and other*
7 *requirements specified under this sub-*
8 *title and the System Plan;*

9 *“(iv) identifies—*

10 *“(I) gaps in observation coverage*
11 *needs for capital improvements of Fed-*
12 *eral assets and non-Federal assets of*
13 *the System; and*

14 *“(II) other recommendations to*
15 *assist in the development of the annual*
16 *and long-term plans prepared pursu-*
17 *ant to paragraph (2)(B)(i) and trans-*
18 *mits such information to the Inter-*
19 *agency Ocean Observation Committee*
20 *via the Program Office established*
21 *under paragraph (3)(C)(i);*

22 *“(v) develops and operates under a*
23 *strategic operational plan that will ensure*
24 *the efficient and effective administration of*
25 *programs and assets to support daily data*

1 *observations for integration into the Sys-*
 2 *tem, pursuant to the standards approved by*
 3 *the Council;*

4 “(vi) *works cooperatively with govern-*
 5 *mental and nongovernmental entities at all*
 6 *levels to identify and provide information*
 7 *products of the System for multiple users*
 8 *within the service area of the regional coast-*
 9 *al observing system; and*

10 “(vii) *complies with all financial over-*
 11 *sight requirements established by the Ad-*
 12 *ministrator, including requirements relat-*
 13 *ing to audits.*

14 “(B) *PARTICIPATION.—For the purposes of*
 15 *this title, employees of Federal agencies are per-*
 16 *mitted to be members of the governing body for*
 17 *the Regional Coastal Observing Systems and*
 18 *may participate in the functions of the regional*
 19 *information coordination entities.”.*

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

23 “(1) *in paragraph (1), by striking “or the Inter-*
 24 *agency Ocean Observing Observation Committee.”*

1 *and inserting “or the Council under this subtitle”;*

2 *and*

3 *(2) in paragraph (2)—*

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

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

8 *(C) by striking subparagraph (D) and in-*
 9 *serting the following:*

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

11 *“(i) a national surface current map-*
 12 *ping network designed to improve fine scale*
 13 *sea surface mapping using high frequency*
 14 *radar technology and other emerging tech-*
 15 *nologies to address national priorities, in-*
 16 *cluding Coast Guard search and rescue op-*
 17 *eration planning and harmful algal bloom*
 18 *forecasting and detection that—*

19 *“(I) is comprised of existing high*
 20 *frequency radar and other sea surface*
 21 *current mapping infrastructure oper-*
 22 *ated by regional associations;*

23 *“(II) incorporates new high fre-*
 24 *quency radar assets or other fine scale*
 25 *sea surface mapping technology assets,*

1 *and other assets needed to fill gaps in*
2 *coverage on United States coastlines;*
3 *and*

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

12 “(ii) fleet acquisition for autonomous
13 underwater and surface vehicles for deploy-
14 ment and data integration to fulfill the pur-
15 poses of the Act;

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

23 “(iv) remote sensing and data assimi-
24 lation to develop new analytical methodolo-
25 gies to assimilate data from the Integrated

1 *Ocean Observing System into hydro-*
 2 *dynamic models;*

3 “(v) *integrated, multistate monitoring*
 4 *to assess sources, movement and fate of sedi-*
 5 *ments in coastal regions;*

6 “(vi) *a multiregion marine sound*
 7 *monitoring system to be—*

8 “(I) *planned in consultation with*
 9 *the International Ocean Observing*
 10 *Committee, the National Oceanic and*
 11 *Atmospheric Administration, the De-*
 12 *partment of the Navy, and academic*
 13 *research institutions; and*

14 “(II) *developed, installed, and op-*
 15 *erated in coordination with the Na-*
 16 *tional Oceanic and Atmospheric Ad-*
 17 *ministration, the Department of the*
 18 *Navy, and academic research institu-*
 19 *tions; and*

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

22 “(D) *in paragraph (3)(B), by inserting “The*
 23 *Administrator has the ability to stagger the*
 24 *terms of the System advisory committee mem-*
 25 *bers.” before “Members”; and*

1 (E) in paragraph (4)—

2 (i) in subparagraph (A), by striking
 3 “and the Interagency Ocean Observing
 4 Committee”; and
 5 (ii) in subparagraph (C), by striking
 6 “Observing” and inserting “Observation”.

7 (d) *CIVIL LIABILITY*.—Section 12304(e) of the Inte-
 8 grated Coastal and Ocean Observation System Act of 2009
 9 (33 U.S.C. 3603(e)) is amended—

10 (1) by striking “information coordination enti-
 11 ty” and inserting “coastal observing system”; and

12 (2) by striking “non-Federal asset or regional in-
 13 formation coordination entity,” and inserting “Re-
 14 gional Coastal Observing System,”.

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

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

19 “(a) *IN GENERAL*.—To carry out interagency activi-
 20 ties under this subtitle, the Secretary of Commerce may exe-
 21 cute an agreement, on a reimbursable or nonreimbursable
 22 basis, with any State or subdivision thereof, any Federal
 23 agency, or any public or private organization, or indi-
 24 vidual to carry out interagency activities under this sub-
 25 title.”.

1 **SEC. 6. REPORTS TO CONGRESS.**

2 *Section 12307 of the Integrated Coastal and Ocean Ob-*
 3 *serva**tion System Act of 2009 (33 U.S.C. 3606) is amended*
 4 *to read as follows:*

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

6 *“(a) REQUIREMENT.—Not later than 2 years after*
 7 *March 30, 2009, and every 3 years thereafter, the Adminis-*
 8 *trator shall prepare and the President acting through the*
 9 *Council shall approve and transmit to the Congress a report*
 10 *on progress made in implementing this subtitle.*

11 *“(b) CONTENTS.—Each report required by subsection*
 12 *(a) shall include—*

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

15 *“(2) an evaluation of the effectiveness of the Sys-*
 16 *tem, including an evaluation of progress made by the*
 17 *Council to achieve the goals identified under the Sys-*
 18 *tem Plan;*

19 *“(3) identification of Federal and non-Federal*
 20 *assets as determined by the Council that have been in-*
 21 *tegrated into the System, including assets essential to*
 22 *the gathering of required observation data variables*
 23 *necessary to meet the respective missions of Council*
 24 *agencies;*

25 *“(4) a review of procurements, planned or initi-*
 26 *ated, by each Council agency to enhance, expand, or*

1 *modernize the observation capabilities and data prod-*
 2 *ucts provided by the System, including data manage-*
 3 *ment and communication subsystems;*

4 “(5) *a summary of the existing gaps in observa-*
 5 *tion infrastructure and monitoring data collection,*
 6 *including—*

7 “(A) *priorities considered by the System ad-*
 8 *visory committee;*

9 “(B) *the national sea surface current map-*
 10 *ping network;*

11 “(C) *coastal buoys, and;*

12 “(D) *ocean chemistry monitoring;*

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 information coordi-*
 17 *nation entities to coordinate regional observation op-*
 18 *erations;*

19 “(7) *a description of benefits of the program to*
 20 *users of data products resulting from the System (in-*
 21 *cluding the general public, industries, scientists, re-*
 22 *source managers, emergency responders, policy mak-*
 23 *ers, and educators);*

24 “(8) *recommendations concerning—*

25 “(A) *modifications to the System; and*

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

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

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

6 Section 12308 of the Integrated Coastal and Ocean Ob-
7 ervation System Act of 2009 (33 U.S.C. 3607) is amended
8 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 Federal
12 Government, the States, regional information coordination
13 entities, 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 Oce-
17 anic and Atmospheric Administration adheres to the deci-
18 sion making process developed by the Council regarding the
19 roles of the Federal Government, the States, the Regional
20 Coastal Observing Systems, the academic communities, and
21 the private sector in providing the end-user communities
22 environmental information, data products, technologies,
23 and services related to the System.”.

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

2 (a) *IN GENERAL.*—*The Integrated Coastal and Ocean*
 3 *Observation System Act of 2009 is amended by striking sec-*
 4 *tion 12309 (33 U.S.C. 3608).*

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

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

10 *Section 12311 of the Integrated Coastal and Ocean Ob-*
 11 *servaion System Act of 2009 (33 U.S.C. 3610) is amended*
 12 *by striking “2013” and inserting “2019”.*

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

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

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

18 “(A) *IN GENERAL.*—*Not later than 2 years*
 19 *after the date of the enactment of the Coordi-*
 20 *nated Ocean Monitoring and Research Act, and*
 21 *every 5 years thereafter, the Subcommittee shall*
 22 *transmit to appropriate committees of Congress*
 23 *a report that—*

24 “(i) *is named ‘The Ocean Chemistry*
 25 *Coastal Community Vulnerability Assess-*
 26 *ment’;*

1 “(ii) identifies gaps in ocean acidifica-
2 tion monitoring by public, academic, and
3 private assets in the network of regional
4 coastal observing systems;

5 “(iii) identifies geographic areas which
6 have gaps in ocean acidification research;

7 “(iv) identifies United States coastal
8 communities, including fishing commu-
9 nities, low-population rural communities,
10 tribal and subsistence communities, and is-
11 land communities, that may be impacted by
12 ocean acidification;

13 “(v) identifies impacts of changing
14 ocean carbonate chemistry on the commu-
15 nities described in clause (iv), including
16 impacts from changes in ocean and coastal
17 marine resources that are not managed by
18 the Federal Government;

19 “(vi) identifies gaps in understanding
20 of the impacts of ocean acidification on eco-
21 nomically or commercially important spe-
22 cies, particularly those which support
23 United States commercial, recreational, and
24 tribal fisheries and aquaculture;

1 “(vii) identifies habitats that may be
 2 particularly vulnerable to corrosive sea
 3 water, including areas experiencing mul-
 4 tiple stressors such as hypoxia, sedimenta-
 5 tion, and harmful algal blooms;

6 “(viii) identifies areas in which exist-
 7 ing Integrated Ocean Observing System as-
 8 sets, including buoys and gliders, may be le-
 9 veraged as platforms for the deployment of
 10 new sensors or other applicable observing
 11 technologies; and

12 “(ix) is written in collaboration with
 13 the agencies responsible for carrying out
 14 this Act.

15 “(B) *FORM OF REPORT.*—

16 “(i) *INITIAL REPORT.*—The initial re-
 17 port required by subparagraph (A) shall in-
 18 clude the information described in clauses
 19 (i) through (ix) on a national level.

20 “(ii) *SUBSEQUENT REPORTS.*—Each
 21 report required by subparagraph (A) after
 22 the initial report—

23 “(I) may describe the information
 24 described in clauses (i) through (ix) on
 25 a national level; or

1 “(II) may consist of separate re-
 2 ports for each region of the National
 3 Oceanic and Atmospheric Administra-
 4 tion.

5 “(iii) REGIONAL REPORTS.—If the
 6 Subcommittee opts to prepare a report re-
 7 quired by subparagraph (A) as separate re-
 8 gional reports under clause (ii)(II), the
 9 Subcommittee shall submit a report for each
 10 region of the National Oceanic and Atmos-
 11 pheric Administration not less often than
 12 once during each 5-year reporting period.

13 “(C) APPROPRIATE COMMITTEES OF CON-
 14 GRESS DEFINED.—In this paragraph and in
 15 paragraph (5), the term ‘appropriate committees
 16 of Congress’ means the Committee on Commerce,
 17 Science, and Transportation of the Senate and
 18 the Committee on Science, Space, and Tech-
 19 nology and the Committee on Natural Resources
 20 of the House of Representatives.

21 “(5) MONITORING PRIORITIZATION PLAN.—Not
 22 later than 180 days after the date of the submission
 23 of the initial report required by paragraph (4)(A), the
 24 Subcommittee shall transmit to the appropriate com-
 25 mittees of Congress a report that develops a plan to

1 *deploy new sensors or other applicable observing tech-*
 2 *nologies—*

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

4 *“(B) prioritized by—*

5 *“(i) the threat to coastal economies and*
 6 *ecosystems;*

7 *“(ii) gaps in data; and*

8 *“(iii) research needs; and*

9 *“(C) that leverage existing platforms, where*
 10 *possible.”.*

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

12 (a) *CONTENTS.—Section 12405(b) of the Federal*
 13 *Ocean Acidification Research And Monitoring Act of 2009*
 14 *(33 U.S.C. 3704(b)) is amended—*

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

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

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

20 *“(10) make recommendations for research to be*
 21 *conducted, including in the social sciences and eco-*
 22 *nomics, to address the key knowledge gaps identified*
 23 *in the economic vulnerability report conducted under*
 24 *section 12404(c).”.*

1 (b) *PROGRAM ELEMENTS.*—Section 12405(c) of the
 2 *Federal Ocean Acidification Research And Monitoring Act*
 3 *of 2009 (33 U.S.C. 3704(c)) is amended by adding at the*
 4 *end the following:*

5 “(6) *Research to understand combined effects of*
 6 *changes in ocean chemistry, sediment delivery, hy-*
 7 *poxia, and harmful algal blooms and the impact these*
 8 *processes have on each other, and how these multiple*
 9 *stressors impact living marine resources and coastal*
 10 *ecosystems.*

11 “(7) *Applied research to identify adaptation*
 12 *strategies for species impacted by changes in ocean*
 13 *chemistry including vegetation-based systems, shell re-*
 14 *cycling, species and genetic diversity, applied tech-*
 15 *nologies, aquaculture methodologies, and management*
 16 *recommendations.”.*

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

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

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

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

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

1 “(4) includes an ongoing mechanism that allows
 2 potentially affected industry members, coastal stake-
 3 holders, fishery management councils and commis-
 4 sions, non-Federal resource managers, and scientific
 5 experts to provide input on monitoring needs that are
 6 necessary to support on the ground management, de-
 7 cision making, and adaptation related to ocean acidi-
 8 fication.”.

9 **SEC. 13. RESEARCH ACTIVITIES.**

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

13 “(a) **RESEARCH ACTIVITIES.**—The Director of the Na-
 14 tional Science Foundation shall continue to carry out re-
 15 search activities on ocean acidification which shall support
 16 competitive, merit-based, peer-reviewed proposals for re-
 17 search, observatories and monitoring of ocean acidification
 18 and its impacts, including—

19 “(1) impacts on marine organisms and marine
 20 ecosystems;

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

23 “(3) the development of methodologies and tech-
 24 nologies to evaluate ocean acidification and its im-
 25 pacts, and;

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

Calendar No. 636

114TH CONGRESS
2^D Session

S. 1886

[Report No. 114-354]

A BILL

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

SEPTEMBER 20, 2016

Reported with an amendment