

114TH CONGRESS
2D SESSION

H. R. 6321

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

IN THE HOUSE OF REPRESENTATIVES

NOVEMBER 15, 2016

Mr. GRAYSON introduced the following bill; which was referred to the Committee on Science, Space, and Technology, and in addition to the Committee on Natural Resources, for a period to be subsequently determined by the Speaker, in each case for consideration of such provisions as fall within the jurisdiction of the committee concerned

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”.

6 **SEC. 2. PURPOSES.**

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

1 **“SEC. 12302. PURPOSES.**

2 “The purposes of this subtitle are—

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

18 “(A) to the public;

19 “(B) to support national defense, search
20 and rescue operations, marine commerce, navi-
21 gation safety, weather, climate, and marine
22 forecasting, energy siting and production, eco-
23 nomic development, ecosystem-based marine,
24 coastal, and Great Lakes resource management,
25 public safety, and public outreach and edu-
26 cation;

1 “(C) to promote greater public awareness
2 and stewardship of the Nation’s ocean, coastal,
3 and Great Lakes resources and the general
4 public welfare;

5 “(D) to provide easy access to ocean,
6 coastal, and Great Lakes data and promote
7 data sharing between Federal and non-Federal
8 sources and promote public data sharing;

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

14 “(F) to monitor and model changes in
15 ocean chemistry;

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

22 “(3) to authorize activities—

23 “(A) to promote basic and applied research
24 to develop, test, and deploy innovations and im-
25 provements in coastal and ocean observation

1 technologies, including advanced observing tech-
2 nologies needed to address critical data gaps,
3 modeling systems, other scientific and techno-
4 logical capabilities to improve the under-
5 standing of weather and climate, ocean-atmos-
6 phere dynamics, global climate change, and the
7 physical, chemical, and biological dynamics of
8 the ocean, coastal and Great Lakes environ-
9 ments; and

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

12 **SEC. 3. DEFINITIONS.**

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

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

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

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

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

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

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

17 (a) SYSTEM ELEMENTS.—

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

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

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

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

9 “(C) data management, communication,
10 and modeling systems for the timely integration
11 and dissemination of data and information
12 products from the System;

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

17 “(E) a research and development program
18 conducted under the guidance of the Council,
19 consisting of—

20 “(i) basic and applied research and
21 technology development—

22 “(I) to improve understanding of
23 coastal and ocean systems and their
24 relationships to human activities; and

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

7 “(ii) an advanced observing tech-
8 nology development program to fill gaps in
9 technology;

10 “(iii) large scale computing resources
11 and research to advance modeling of coast-
12 al and ocean processes;

13 “(iv) models to improve regional
14 weather forecasting capabilities and re-
15 gional weather forecasting products; and

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

22 (2) AVAILABILITY OF DATA.—Paragraph (3) of
23 section 12304(b) of the Integrated Coastal and
24 Ocean Observation System Act of 2009 (33 U.S.C.
25 3603(b)) is amended by striking the period at the

1 end and inserting “for research and for use in the
2 development of products to address societal needs.”.

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

7 (A) in the paragraph heading, by striking
8 “NON-FEDERAL” and inserting “COORDINA-
9 TION OF NON-FEDERAL”; and

10 (B) by inserting “, the regional coastal ob-
11 serving system,” after “Interagency Ocean Ob-
12 serving Committee”.

13 (b) POLICY OVERSIGHT, ADMINISTRATION, AND RE-
14 GIONAL COORDINATION.—Section 12304(c) of the Inte-
15 grated Coastal and Ocean Observation System Act of
16 2009 (33 U.S.C. 3603(c)) is amended by striking para-
17 graphs (2), (3), and (4), and inserting the following:

18 “(2) INTERAGENCY OCEAN OBSERVATION COM-
19 MITTEE.—

20 “(A) ESTABLISHMENT.—The Council shall
21 establish or designate a committee which shall
22 be known as the Interagency Ocean Observation
23 Committee.

24 “(B) DUTIES.—The Interagency Ocean
25 Observation Committee shall—

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

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

13 “(I) to operate all elements of
14 the System identified in subsection
15 (b); and

16 “(II) to ensure continuity of data
17 streams from Federal and non-Fed-
18 eral assets;

19 “(iii) establish requirements for obser-
20 vation data variables to be gathered by
21 both Federal and non-Federal assets and
22 identify, in consultation with regional in-
23 formation coordination entities, priorities
24 for System observations;

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

7 “(v) develop contract requirements for
8 each Regional Coastal Observing System—

9 “(I) to establish eligibility for in-
10 tegration into the System;

11 “(II) to ensure compliance with
12 all applicable standards and protocols
13 established by the Council; and

14 “(III) to ensure that regional ob-
15 servations are integrated into the Sys-
16 tem on a sustained basis;

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

21 “(vii) subject to the availability of ap-
22 propriations, establish through one or more
23 participating Federal agencies, in consulta-
24 tion with the System advisory committee
25 established under subsection (d), a com-

1 petitive matching grant or other pro-
2 grams—

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

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

13 “(viii) periodically—

14 “(I) review the System Plan; and

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

20 “(ix) ensure collaboration among Fed-
21 eral agencies participating in the activities
22 of the Interagency Ocean Observation
23 Committee; and

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

1 “(3) LEAD FEDERAL AGENCY.—

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

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

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

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

18 “(I) utilizes, to the extent nec-
19 essary, personnel from member agen-
20 cies participating on the Interagency
21 Ocean Observation Committee; and

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

24 “(ii) implement policies, protocols,
25 and standards approved by the Council

1 and delegated by the Interagency Ocean
2 Observation Committee;

3 “(iii) promulgate program guide-
4 lines—

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

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

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

19 “(v) implement and maintain a merit-
20 based, competitive funding process to sup-
21 port non-Federal assets, including the de-
22 velopment and maintenance of a network
23 of Regional Coastal Observing Systems,
24 and develop and implement a process for

1 the periodic review and evaluation of the
2 regional associations;

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

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

13 “(viii) develop and implement a proc-
14 ess for the periodic review and evaluation
15 of the Regional Coastal Observing Sys-
16 tems;

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

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

1 “(II) submitted to the Inter-
2 agency Ocean Observing Committee;

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

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

21 “(xii) develop and periodically update
22 a plan to efficiently integrate into the Sys-
23 tem new, innovative, or emerging tech-
24 nologies that have been demonstrated to be
25 useful to the System and which will fulfill

1 the purposes of this chapter and the Sys-
2 tem Plan; and

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

11 “(4) REGIONAL COASTAL OBSERVING SYS-
12 TEMS.—

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

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

21 “(ii) meets—

22 “(I) the certification standards
23 and compliance procedure guidelines
24 issued by the Administrator; and

1 “(II) the information needs of
2 user groups in the region while adher-
3 ing to national standards;

4 “(iii) demonstrates an organizational
5 structure, that under funding limitations is
6 capable of—

7 “(I) gathering required System
8 observation data;

9 “(II) supporting and integrating
10 all aspects of coastal and ocean ob-
11 serving and information programs
12 within a region; and

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

19 “(iv) identifies—

20 “(I) gaps in observation coverage
21 needs for capital improvements of
22 Federal assets and non-Federal assets
23 of the System; and

24 “(II) other recommendations to
25 assist in the development of the an-

1 nual and long-term plans prepared
2 pursuant to paragraph (2)(B)(i) and
3 transmits such information to the
4 Interagency Ocean Observation Com-
5 mittee via the Program Office estab-
6 lished under paragraph (3)(C)(i);

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

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

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

24 “(B) PARTICIPATION.—For the purposes
25 of this title, employees of Federal agencies are

1 permitted to be members of the governing body
2 for the Regional Coastal Observing Systems
3 and may participate in the functions of the re-
4 gional information coordination entities.”.

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

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

13 (2) in paragraph (2)—

14 (A) in subparagraph (A), by inserting “,
15 data sharing,” after “data management”;

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

18 (C) by striking subparagraph (D) and in-
19 serting the following:

20 “(D) additional priorities, including—

21 “(i) a national surface current map-
22 ping network designed to improve fine
23 scale sea surface mapping using high fre-
24 quency radar technology and other emerg-
25 ing technologies to address national prior-

1 ities, including Coast Guard search and
2 rescue operation planning and harmful
3 algal bloom forecasting and detection
4 that—

5 “(I) is comprised of existing high
6 frequency radar and other sea surface
7 current mapping infrastructure oper-
8 ated by regional associations;

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

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

24 “(ii) fleet acquisition for autonomous
25 underwater and surface vehicles for deploy-

1 ment and data integration to fulfill the
2 purposes of the Act;

3 “(iii) an integrative survey program
4 for application of manned and unmanned
5 vehicles to the real-time or near real-time
6 collection and transmission of seafloor,
7 water column, and sea surface data on bi-
8 ology, chemistry, geology, physics, and hy-
9 drography;

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

15 “(v) integrated, multistate monitoring
16 to assess sources, movement and fate of
17 sediments in coastal regions; and

18 “(vi) a multiregion marine sound
19 monitoring system to be—

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

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

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

9 (D) in paragraph (3)(B), by inserting
10 “The Administrator has the ability to stagger
11 the terms of the System advisory committee
12 members.” before “Members”; and

13 (E) in paragraph (4)—

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

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

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

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

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

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

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

8 “(a) IN GENERAL.—To carry out interagency activi-
9 ties under this subtitle, the Secretary of Commerce may
10 execute an agreement, on a reimbursable or nonreimburs-
11 able basis, with any State or subdivision thereof, any Fed-
12 eral agency, or any public or private organization, or indi-
13 vidual to carry out interagency activities under this sub-
14 title.”.

15 **SEC. 6. REPORTS TO CONGRESS.**

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

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

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

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

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

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

9 “(3) identification of Federal and non-Federal
10 assets as determined by the Council that have been
11 integrated into the System, including assets essential
12 to the gathering of required observation data vari-
13 ables necessary to meet the respective missions of
14 Council agencies;

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

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

23 “(A) priorities considered by the System
24 advisory committee;

1 “(B) the national sea surface current map-
2 ping network;

3 “(C) coastal buoys; and

4 “(D) ocean chemistry monitoring;

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 co-
9 ordination entities to coordinate regional observation
10 operations;

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

16 “(8) recommendations concerning—

17 “(A) modifications to the System; and

18 “(B) funding levels for the System in sub-
19 sequent 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
24 Observation System Act of 2009 (33 U.S.C. 3607) is
25 amended 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 Fed-
4 eral Government, the States, regional information coordi-
5 nation entities, the academic community, and the private
6 sector in providing to end-user communities environmental
7 information, products, technologies, and services related to
8 the System. The Administrator shall ensure that the Na-
9 tional Oceanic and Atmospheric Administration adheres to
10 the decision making process developed by the Council re-
11 garding the roles of the Federal Government, the States,
12 the Regional Coastal Observing Systems, the academic
13 communities, and the private sector in providing the end-
14 user communities environmental information, data prod-
15 ucts, technologies, and services related to the System.”.

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

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

20 (b) TABLE OF CONTENTS AMENDMENT.—The table
21 of contents in section 1(b) of the Omnibus Public Land
22 Management Act of 2009 (Public Law 111–11; 123 Stat.
23 991) is amended by striking the item related to section
24 12309.

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 “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.
8 3703(c)) 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
14 shall transmit to appropriate committees of
15 Congress 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
4 by 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
13 economically or commercially important
14 species, particularly those which support
15 United States commercial, recreational,
16 and 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
24 assets, including buoys and gliders, may be
25 leveraged as platforms for the deployment

1 of new sensors or other applicable observ-
2 ing 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 by subparagraph (A) shall
9 include the information described in
10 clauses (i) through (ix) on a national level.

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

14 “(I) may describe the informa-
15 tion described in clauses (i) through
16 (ix) on 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 by subparagraph (A) as separate re-
24 gional reports under clause (ii)(II), the
25 Subcommittee shall submit a report for

1 each region of the National Oceanic and
2 Atmospheric Administration not less often
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 commit-
8 tees of Congress’ means the Committee on
9 Commerce, Science, and Transportation of the
10 Senate and the Committee on Science, Space,
11 and Technology and the Committee on Natural
12 Resources of the House of Representatives.

13 “(5) MONITORING PRIORITIZATION PLAN.—Not
14 later than 180 days after the date of the submission
15 of the initial report required by paragraph (4)(A),
16 the Subcommittee shall transmit to the appropriate
17 committees of Congress a report that develops a
18 plan to deploy new sensors or other applicable ob-
19 serving technologies—

20 “(A) based on such initial report;

21 “(B) prioritized by—

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

24 “(ii) gaps in data; and

25 “(iii) research needs; and

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

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

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

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

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

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

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

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

21 “(6) Research to understand combined effects
22 of changes in ocean chemistry, sediment delivery, hy-
23 poxia, and harmful algal blooms and the impact
24 these processes have on each other, and how these

1 multiple stressors impact living marine resources
2 and coastal ecosystems.

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

9 **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.
12 3705(a)) 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
23 are necessary to support on the ground manage-
24 ment, decision making, and adaptation related to
25 ocean acidification.”.

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.
4 3706(a)) is amended to read as follows:

5 “(a) **RESEARCH ACTIVITIES.**—The Director of the
6 National Science Foundation shall continue to carry out
7 research activities on ocean acidification which shall sup-
8 port competitive, merit-based, peer-reviewed proposals for
9 research, observatories and monitoring of ocean acidifica-
10 tion 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
16 technologies to evaluate ocean acidification and its
17 impacts; and

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

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