



AMENDMENT NO. 1

Calendar No. _____

Purpose: To improve the bill.

IN THE SENATE OF THE UNITED STATES—115th Cong., 1st Sess.

S. 1425

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

Referred to the Committee on _____ and ordered to be printed

Ordered to lie on the table and to be printed

AMENDMENT intended to be proposed by Mr. WICKER (for himself and Ms. CANTWELL)

Viz:

- 1 Beginning on page 1, strike line 3 and all that follows
- 2 through page 30, line 18, and insert the following:
- 3 **SECTION 1. SHORT TITLE; TABLE OF CONTENTS.**
- 4 (a) SHORT TITLE.—This Act may be cited as the
- 5 “Coordinated Ocean Monitoring and Research Act”.
- 6 (b) TABLE OF CONTENTS.—The table of contents for
- 7 this Act is as follows:

- Sec. 1. Short title; table of contents.
- Sec. 2. Purposes.
- Sec. 3. Definitions.
- Sec. 4. Integrated Coastal and Ocean Observation System.
- Sec. 5. Financing and agreements.
- Sec. 6. Reports to Congress.
- Sec. 7. Public-private use policy.
- Sec. 8. Repeal of independent cost estimate.
- Sec. 9. Authorization of appropriations.
- Sec. 10. Reports and research plans.
- Sec. 11. Strategic research plan.

Sec. 12. Stakeholder input on monitoring.

Sec. 13. Research activities.

1 **SEC. 2. PURPOSES.**

2 Section 12302 of the Integrated Coastal and Ocean
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-

1 gation safety, weather, climate, and marine
2 forecasting, energy siting and production, eco-
3 nomic development, ecosystem-based marine,
4 coastal, and Great Lakes resource management,
5 public safety, and public outreach and edu-
6 cation;

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

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

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

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

22 “(2) to improve the Nation’s capability to meas-
23 ure, track, observe, understand, and predict events
24 related directly and indirectly to weather and climate
25 change, natural climate variability, and interactions

1 between the oceanic and atmospheric environments,
2 including the Great Lakes; and

3 “(3) to authorize activities—

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

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

18 **SEC. 3. DEFINITIONS.**

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

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

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

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

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

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

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

3 (a) **SYSTEM ELEMENTS.—**

4 (1) **IN GENERAL.—**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 by striking
7 paragraph (1) and inserting the following:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

5 “(B) DUTIES.—The Interagency Ocean
6 Observation Committee shall—

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

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

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

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

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

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

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

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

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

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

23 “(vi) identify gaps in observation cov-
24 erage or needs for capital improvements of

1 both Federal assets and non-Federal as-
2 sets;

3 “(vii) subject to the availability of ap-
4 propriations, establish through 1 or more
5 participating Federal agencies, in consulta-
6 tion with the System advisory committee
7 established under subsection (d), a com-
8 petitive matching grant or other pro-
9 grams—

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

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

20 “(viii) periodically—

21 “(I) review the System Plan; and

22 “(II) submit to the Council such
23 recommendations as the Interagency
24 Ocean Observation Committee may

1 have for improvements to the System
2 Plan;

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

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

9 “(3) LEAD FEDERAL AGENCY.—

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

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

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

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

1 “(I) that utilizes, to the extent
2 necessary, personnel from member
3 agencies participating on the Inter-
4 agency Ocean Observation Committee;
5 and

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

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

12 “(iii) promulgate program guide-
13 lines—

14 “(I) to certify and integrate re-
15 gional associations into the System;
16 and

17 “(II) to provide regional coastal
18 and ocean observation data that meet
19 the needs of user groups from the re-
20 spective regions;

21 “(iv) have the authority to enter into
22 and oversee contracts, leases, grants, or co-
23 operative agreements with non-Federal as-
24 sets, including regional information coordi-
25 nation entities, to support the purposes of

1 this chapter on such terms as the Adminis-
2 trator deems appropriate;

3 “(v) implement and maintain a merit-
4 based, competitive funding process to sup-
5 port non-Federal assets, including the de-
6 velopment and maintenance of a network
7 of regional coastal observing systems, and
8 develop and implement a process for the
9 periodic review and evaluation of the re-
10 gional associations;

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

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

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

24 “(ix) formulate an annual process by
25 which gaps in observation coverage or

1 needs for capital improvements of Federal
2 assets and non-Federal assets of the Sys-
3 tem are—

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

8 “(II) submitted to the Inter-
9 agency Ocean Observation Committee;

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

20 “(xi) not less frequently than once
21 each year, submit to the Interagency
22 Ocean Observation Committee a report on
23 the accomplishments, operational needs,
24 and performance of the System to con-

1 tribute to the annual and long-term plans
2 prepared pursuant to paragraph (2)(B)(i);

3 “(xii) develop and periodically update
4 a plan to efficiently integrate into the Sys-
5 tem new, innovative, or emerging tech-
6 nologies that have been demonstrated to be
7 useful to the System and which will fulfill
8 the purposes of this chapter and the Sys-
9 tem Plan; and

10 “(xiii) work with users and Regional
11 Associations to develop products to enable
12 real-time data sharing for decision makers,
13 including with respect to weather fore-
14 casting and modeling, search and rescue
15 operations, corrosive seawater forecasts,
16 water quality monitoring and communica-
17 tion, and harmful algal bloom forecasting.

18 “(4) REGIONAL COASTAL OBSERVING SYS-
19 TEMS.—

20 “(A) IN GENERAL.—A regional coastal ob-
21 serving system operated by a Regional Associa-
22 tion described in the System Plan may not be
23 certified or established under this subtitle un-
24 less 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 transmits 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 and
11 may participate in the functions of the regional
12 information coordination entities.”.

13 (c) 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 Committee.” and inserting
19 “or 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; and

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 high
14 frequency radar and other sea surface
15 current mapping infrastructure oper-
16 ated by national programs and re-
17 gional associations;

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

24 “(III) follows a deployment plan
25 that prioritizes closing gaps in high

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

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

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

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

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

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

6 “(I) planned in consultation with
7 the Interagency Ocean Observation
8 Committee, the National Oceanic and
9 Atmospheric Administration, the De-
10 partment of the Navy, and academic
11 research institutions; and

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

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

20 (D) in paragraph (3)(B), by inserting
21 “The Administrator may stagger the terms of
22 the System advisory committee members.” be-
23 fore “Members”; and

24 (E) in paragraph (4)—

1 (i) in subparagraph (A), by striking
2 “and the Interagency Ocean Observing
3 Committee”; and

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

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

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

11 (2) by striking “non-Federal asset or regional
12 information coordination entity,” and inserting “re-
13 gional coastal observing system,”.

14 **SEC. 5. FINANCING AND AGREEMENTS.**

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

18 “(a) IN GENERAL.—To carry out activities under this
19 subtitle, the Secretary of Commerce may execute an agree-
20 ment, on a reimbursable or nonreimbursable basis, with
21 any State or subdivision thereof, any Federal agency, any
22 public or private organization, or any individual to carry
23 out activities under this subtitle.”.

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

2 Section 12307 of the Integrated Coastal and Ocean
3 Observation System Act of 2009 (33 U.S.C. 3606) is
4 amended 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 Admin-
8 istrator shall prepare, and the President acting through
9 the Council shall approve and transmit to the Congress,
10 a report on progress made in implementing this subtitle.

11 “(b) **CONTENTS.**—Each report required under sub-
12 section (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
16 System, including an evaluation of progress made by
17 the Council to achieve the goals identified under the
18 System Plan;

19 “(3) the identification of Federal and non-Fed-
20 eral assets as determined by the Council that have
21 been integrated into the System, including assets es-
22 sential to the gathering of required observation data
23 variables necessary to meet the respective missions
24 of Council 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
2 products provided by the System, including data
3 management 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
8 advisory committee;

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

11 “(C) coastal buoys;

12 “(D) ocean chemistry monitoring; and

13 “(E) autonomous underwater and surface
14 vehicle technology gaps;

15 “(6) an assessment regarding activities to inte-
16 grate Federal and non-Federal assets, nationally and
17 on the regional level, and discussion of the perform-
18 ance and effectiveness of regional information co-
19 ordination entities to coordinate regional observation
20 operations;

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

1 “(8) recommendations concerning—
2 “(A) modifications to the System; and
3 “(B) funding levels for the System in sub-
4 sequent fiscal years; and
5 “(9) the results of a periodic external inde-
6 pendent programmatic audit of the System.”.

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

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

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

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

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

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

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

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

12 Section 12311 of the Integrated Coastal and Ocean
13 Observation System Act of 2009 (33 U.S.C. 3610) is
14 amended by striking “2013” and inserting “2019”.

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

16 Section 12404(e) of the Federal Ocean Acidification
17 Research And Monitoring Act of 2009 (33 U.S.C.
18 3703(c)) is amended by adding at the end the following:

19 “(4) ECONOMIC VULNERABILITY REPORT.—

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

1 “(i) is named ‘The Ocean Chemistry
2 Coastal Community Vulnerability Assess-
3 ment’;

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

8 “(iii) identifies geographic areas which
9 have gaps in ocean acidification research;

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

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

22 “(vi) identifies gaps in understanding
23 of the impacts of ocean acidification on
24 economically or commercially important
25 species, particularly those which support

1 United States commercial, recreational,
2 and tribal fisheries and aquaculture;

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

8 “(viii) identifies areas in which exist-
9 ing Integrated Ocean Observing System
10 assets, including buoys and gliders, may be
11 leveraged as platforms for the deployment
12 of new sensors or other applicable observ-
13 ing technologies; and

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

17 “(B) FORM OF REPORT.—

18 “(i) INITIAL REPORT.—The initial re-
19 port required under subparagraph (A)
20 shall include the information described in
21 clauses (i) through (ix) on a national level.

22 “(ii) SUBSEQUENT REPORTS.—Each
23 report required under subparagraph (A)
24 after the initial report—

1 “(I) may describe the informa-
2 tion described in clauses (i) through
3 (ix) on a national level; or

4 “(II) may consist of separate re-
5 ports for each region of the National
6 Oceanic and Atmospheric Administra-
7 tion.

8 “(iii) REGIONAL REPORTS.—If the
9 Subcommittee opts to prepare a report re-
10 quired under subparagraph (A) as separate
11 regional reports under clause (ii)(II), the
12 Subcommittee shall submit a report for
13 each region of the National Oceanic and
14 Atmospheric Administration not less fre-
15 quently than once during each 5-year re-
16 porting period.

17 “(C) APPROPRIATE COMMITTEES OF CON-
18 GRESS DEFINED.—In this paragraph and in
19 paragraph (5), the term ‘appropriate commit-
20 tees of Congress’ means the Committee on
21 Commerce, Science, and Transportation of the
22 Senate, the Committee on Science, Space, and
23 Technology of the House of Representatives,
24 and the Committee on Natural Resources of the
25 House of Representatives.

1 “(5) MONITORING PRIORITIZATION PLAN.—Not
2 later than 180 days after the date of the submission
3 of the initial report under paragraph (4)(A), the
4 Subcommittee shall transmit to the appropriate com-
5 mittees of Congress a report that develops a plan to
6 deploy new sensors or other applicable observing
7 technologies—

8 “(A) based on such initial report;

9 “(B) prioritized by—

10 “(i) the threat to coastal economies
11 and ecosystems;

12 “(ii) gaps in data; and

13 “(iii) research needs; and

14 “(C) that leverage existing platforms,
15 where possible.”.

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

17 (a) CONTENTS.—Section 12405(b) of the Federal
18 Ocean Acidification Research And Monitoring Act of 2009
19 (33 U.S.C. 3704(b)) is amended—

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

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

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

1 “(10) make recommendations for research to be
2 conducted, including in the social sciences and eco-
3 nomics, to address the key knowledge gaps identified
4 in the economic vulnerability report conducted under
5 section 12404(e)(4).”.

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

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

16 “(7) Applied research to identify adaptation
17 strategies for species impacted by changes in ocean
18 chemistry including vegetation-based systems, shell
19 recycling, species and genetic diversity, applied tech-
20 nologies, aquaculture methodologies, and manage-
21 ment recommendations.”.