

# Union Calendar No.

116<sup>TH</sup> CONGRESS  
1<sup>ST</sup> SESSION

# H. R. 1237

[Report No. 116-]

To amend the Federal Ocean Acidification Research and Monitoring Act of 2009 to establish an Ocean Acidification Advisory Board, to expand and improve the research on Ocean Acidification and Coastal Acidification, to establish and maintain a data archive system for Ocean Acidification data and Coastal Acidification data, and for other purposes.

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## IN THE HOUSE OF REPRESENTATIVES

FEBRUARY 14, 2019

Ms. BONAMICI (for herself, Mr. YOUNG, Ms. PINGREE, and Mr. POSEY) introduced the following bill; which was referred to the Committee on Science, Space, and Technology

MAY --, 2019

Reported with an amendment, committed to the Committee of the Whole House on the State of the Union, and ordered to be printed

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

[For text of introduced bill, see copy of bill as introduced on February 14, 2019]

## **A BILL**

To amend the Federal Ocean Acidification Research and Monitoring Act of 2009 to establish an Ocean Acidification Advisory Board, to expand and improve the research on Ocean Acidification and Coastal Acidification, to establish and maintain a data archive system for Ocean Acidification data and Coastal Acidification data, 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 “Coastal and Ocean*  
5 *Acidification Stressors and Threats Research Act of 2019”*  
6 *or the “COAST Research Act of 2019”.*

7 **SEC. 2. PURPOSES.**

8       *(a) IN GENERAL.—Section 12402(a) of the Federal*  
9 *Ocean Acidification Research and Monitoring Act of 2009*  
10 *(33 U.S.C. 3701(a)) is amended—*

11           *(1) in paragraph (1)—*

12                   *(A) in the matter preceding subparagraph*  
13 *(A), by striking “development and coordination”*  
14 *and inserting “coordination and implementa-*  
15 *tion”;*

16                   *(B) in subparagraph (A), by striking*  
17 *“acidification on marine organisms” and insert-*  
18 *ing “acidification and coastal acidification on*  
19 *marine organisms”; and*

20                   *(C) in subparagraph (B), by striking “es-*  
21 *tablish” and all that follows through the semi-*  
22 *colon and inserting “maintain and advise an*  
23 *interagency research, monitoring, and public*  
24 *outreach program on ocean acidification and*  
25 *coastal acidification;”;*

1           (2) *in paragraph (2), by striking “establish-*  
2           *ment” and inserting “maintenance”;*

3           (3) *in paragraph (3), by inserting “and coastal*  
4           *acidification” after “ocean acidification”; and*

5           (4) *in paragraph (4), by inserting “and coastal*  
6           *acidification that take into account other environ-*  
7           *mental and anthropogenic stressors” after “ocean*  
8           *acidification”.*

9           (b) *TECHNICAL AND CONFORMING AMENDMENT.—Sec-*  
10          *tion 12402 of the Federal Ocean Acidification Research and*  
11          *Monitoring Act of 2009 (33 U.S.C. 3701(a)) is amended*  
12          *by striking “(a) PURPOSES.—”.*

13          **SEC. 3. DEFINITIONS.**

14          *Section 12403 of the Federal Ocean Acidification Re-*  
15          *search and Monitoring Act of 2009 (33 U.S.C. 3702) is*  
16          *amended—*

17                 (1) *in paragraph (1), by striking “of the Earth’s*  
18                 *oceans” and all that follows before the period at the*  
19                 *end and inserting “and changes in the water chem-*  
20                 *istry of the Earth’s oceans, coastal estuaries, and wa-*  
21                 *terways caused by carbon dioxide from the atmos-*  
22                 *phere and the breakdown of organic matter”;*

23                 (2) *in paragraph (3), by striking “Joint Sub-*  
24                 *committee on Ocean Science and Technology of the*  
25                 *National Science and Technology Council” and in-*

1       serting “National Science and Technology Council  
2       Subcommittee on Ocean Science and Technology”;

3               (3) by redesignating paragraphs (1), (2), and (3)  
4       as paragraphs (2), (3), and (4), respectively;

5               (4) by inserting before paragraph (2), as so re-  
6       designated, the following new paragraph:

7               “(1) COASTAL ACIDIFICATION.—The term ‘coast-  
8       al acidification’ means the combined decrease in pH  
9       and changes in the water chemistry of coastal oceans,  
10       estuaries, and other bodies of water from chemical in-  
11       puts (including carbon dioxide from the atmosphere),  
12       freshwater inputs, and excess nutrient run-off from  
13       land and coastal atmospheric pollution that result in  
14       processes that release carbon dioxide, acidic nitrogen,  
15       and sulfur compounds as byproducts which end up in  
16       coastal waters.”; and

17               (5) by adding at the end the following new para-  
18       graph:

19               “(5) STATE.—The term ‘State’ means each State  
20       of the United States, the District of Columbia, the  
21       Commonwealth of Puerto Rico, American Samoa,  
22       Guam, the Commonwealth of the Northern Mariana  
23       Islands, the Virgin Islands of the United States, and  
24       any other territory or possession of the United  
25       States.”.

1 **SEC. 4. INTERAGENCY WORKING GROUP.**

2 *Section 12404 of the Federal Ocean Acidification Re-*  
3 *search and Monitoring Act of 2009 (33 U.S.C. 3703) is*  
4 *amended—*

5 (1) *in the heading, by striking “SUB-*  
6 **COMMITTEE” and inserting “WORKING GROUP”;**

7 (2) *in subsection (a)—*

8 (A) *in paragraph (1), by striking “Joint*  
9 *Subcommittee on Ocean Science and Technology*  
10 *of the National Science and Technology Council*  
11 *shall coordinate Federal activities on ocean*  
12 *acidification and” and insert “Subcommittee*  
13 *shall”;*

14 (B) *in paragraph (2), by striking “Wildlife*  
15 *Service,” and inserting “Wildlife Service, the*  
16 *Bureau of Ocean Energy Management, the Envi-*  
17 *ronmental Protection Agency, the Department of*  
18 *Agriculture, the Department of State, the De-*  
19 *partment of Energy, the Department of the*  
20 *Navy, the National Park Service, the Bureau of*  
21 *Indian Affairs, the National Institute of Stand-*  
22 *ards and Technology, the Smithsonian Institu-*  
23 *tion,”; and*

24 (C) *in paragraph (3), in the heading, by*  
25 *striking “CHAIRMAN” and inserting “CHAIR”;*

26 (3) *in subsection (b)—*

1           (A) in paragraph (1), by inserting “, in-  
2           cluding the efforts of the National Oceanic and  
3           Atmospheric Administration to facilitate such  
4           implementation” after “of the plan”;

5           (B) in paragraph (2)—

6           (i) in subparagraph (A), by inserting  
7           “and coastal acidification” after “ocean  
8           acidification”; and

9           (ii) in subparagraph (B), by inserting  
10          “and coastal acidification” after “ocean  
11          acidification”;

12          (C) in paragraph (4), by striking “; and”  
13          and inserting a semicolon;

14          (D) in paragraph (5)—

15          (i) by striking “developed” and insert-  
16          ing “and coastal acidification developed”;  
17          and

18          (ii) by striking the period at the end  
19          and inserting “and coastal acidification;  
20          and”; and

21          (E) by adding at the end the following new  
22          paragraph:

23          “(6) ensure that each of the Federal agencies rep-  
24          resented on the interagency working group—

1           “(A) participates in the Ocean Acidification  
2           Information Exchange established under para-  
3           graph (5); and

4           “(B) delivers data and information to sup-  
5           port the data archive system established under  
6           section 12406(d).”;

7           (4) in subsection (c), in paragraph (2)—

8           (A) by inserting “, and to the Office of  
9           Management and Budget,” after “House of Rep-  
10          resentatives”; and

11          (B) in subparagraph (B), by striking “the  
12          interagency research” and inserting “interagency  
13          strategic research”;

14          (5) by redesignating subsection (c) as subsection  
15          (d); and

16          (6) by inserting after subsection (b) the fol-  
17          lowing:

18          “(c) *ADVISORY BOARD.*—

19                 “(1) *ESTABLISHMENT.*—The Chair of the Sub-  
20          committee shall establish an Ocean Acidification Ad-  
21          visory Board.

22                 “(2) *DUTIES.*—The Advisory Board shall—

23                         “(A) not later than 180 days before the Sub-  
24          committee submits the most recent report under  
25          subsection (d)(2)—



1                   “(i) review such report;

2                   “(ii) submit an analysis of such report  
3                   to the Subcommittee for consideration in the  
4                   final report submitted under subsection  
5                   (d)(2); and

6                   “(iii) concurrently with the Sub-  
7                   committee’s final submission of the report  
8                   under subsection (d)(2), the Advisory Board  
9                   shall submit a copy of the analysis provided  
10                  to the Subcommittee to the Committee on  
11                  Commerce, Science, and Transportation of  
12                  the Senate, the Committee on Science,  
13                  Space, and Technology of the House of Rep-  
14                  resentatives, and the Committee on Natural  
15                  Resources of the House of Representatives;

16                  “(B) not later than 180 days before the  
17                  Subcommittee submits the most recent strategic  
18                  research plan under subsection (d)(3) to Con-  
19                  gress—

20                  “(i) review such plan;

21                  “(ii) submit an analysis of such plan  
22                  and the implementation thereof to the Sub-  
23                  committee for consideration in the final  
24                  strategic research plan submitted under sub-  
25                  section (d)(3); and

1                   “(iii) concurrently with the Sub-  
2                   committee’s final submission of the strategic  
3                   research plan under subsection (d)(3), the  
4                   Advisory Board shall submit a copy of the  
5                   analysis provided to the Subcommittee to  
6                   the Committee on Commerce, Science, and  
7                   Transportation of the Senate, the Com-  
8                   mittee on Science, Space, and Technology of  
9                   the House of Representatives, and the Com-  
10                  mittee on Natural Resources of the House of  
11                  Representatives;

12                  “(C) provide ongoing advice to the Sub-  
13                  committee and the interagency working group on  
14                  matters related to Federal activities on ocean  
15                  acidification and coastal acidification;

16                  “(D) advise the Subcommittee and the  
17                  interagency working group on—

18                         “(i) efforts to coordinate research and  
19                         monitoring activities related to ocean acidi-  
20                         fication and coastal acidification; and

21                         “(ii) the best practices for the stand-  
22                         ards developed for data archiving under sec-  
23                         tion 12406(e);

24                  “(E) publish in the Federal Register a char-  
25                  ter;

1           “(F) provide the Library of Congress  
2           with—

3                   “(i) the charter described in subpara-  
4                   graph (E);

5                   “(ii) any schedules and minutes for  
6                   meetings of the Advisory Board;

7                   “(iii) any documents that are ap-  
8                   proved by the Advisory Board; and

9                   “(iv) any reports and analysis pre-  
10                  pared by the Advisory Board; and

11                  “(G) establish a publicly accessible web page  
12                  on the website of the National Oceanic and At-  
13                  mospheric Administration, that contains the in-  
14                  formation described in clauses (i) through (iv) of  
15                  subparagraph (F).

16                  “(3) MEMBERSHIP.—The Advisory Board shall  
17                  consist of 24 members as follows:

18                   “(A) 2 representatives of the shellfish and  
19                   crab industry.

20                   “(B) 1 representative of the finfish industry.

21                   “(C) 1 representative of seafood processors.

22                   “(D) 3 representatives from academia, in-  
23                   cluding both natural and social sciences.

24                   “(E) 1 representative of recreational fish-  
25                   ing.

1           “(F) 1 representative of relevant nongovern-  
2           mental organizations.

3           “(G) 6 representatives from relevant State,  
4           local, and Tribal governments.

5           “(H) 1 representative from the Alaska  
6           Ocean Acidification Network.

7           “(I) 1 representative from the California  
8           Current Acidification Network.

9           “(J) 1 representative from the Northeast  
10          Coastal Acidification Network.

11          “(K) 1 representative from the Southeast  
12          Coastal Acidification Network.

13          “(L) 1 representative from the Gulf of Mex-  
14          ico Coastal Acidification Network.

15          “(M) 1 representative from the Mid-Atlantic  
16          Coastal Acidification Network.

17          “(N) 1 representative from the Pacific Is-  
18          lands Ocean Observing System or similar entity  
19          representing the island territories and posses-  
20          sions of the United States in the Pacific Ocean,  
21          and the State of Hawaii.

22          “(O) 1 representative from the Caribbean  
23          Regional Association for Coastal Ocean Observ-  
24          ing or a similar entity representing Puerto Rico  
25          and the U.S. Virgin Islands.

1           “(P) 1 representative from the National  
2           *Oceanic and Atmospheric Administration shall*  
3           *serve as an ex-officio member of the Advisory*  
4           *Board without a vote.*

5           “(4) *APPOINTMENT OF MEMBERS.—The Chair of*  
6           *the Subcommittee shall—*

7           “(A) *appoint members to the Advisory*  
8           *Board (taking into account the geographical in-*  
9           *terests of each individual to be appointed as a*  
10           *member of the Advisory Board to ensure that an*  
11           *appropriate balance of geographical interests are*  
12           *represented by the members of the Advisory*  
13           *Board) who—*

14           “(i) *represent the interest group for*  
15           *which each seat is designated;*

16           “(ii) *demonstrate expertise on ocean*  
17           *acidification or coastal acidification and its*  
18           *scientific, economic, industry, cultural, and*  
19           *community impacts; and*

20           “(iii) *have a record of distinguished*  
21           *service with respect to ocean acidification or*  
22           *coastal acidification, and such impacts;*

23           “(B) *give consideration to nominations and*  
24           *recommendations from the members of the inter-*

1           *agency working group and the public for such*  
2           *appointments; and*

3           “(C) *ensure that an appropriate balance of*  
4           *scientific, industry, and geographical interests*  
5           *are represented by the members of the Advisory*  
6           *Board.*

7           “(5) *TERM OF MEMBERSHIP.—Each member of*  
8           *the Advisory Board—*

9           “(A) *shall be appointed for a 5-year term;*  
10          *and*

11          “(B) *may be appointed to more than one*  
12          *term.*

13          “(6) *CHAIR.—The Chair of the Subcommittee*  
14          *shall appoint one member of the Advisory Board to*  
15          *serve as the Chair of the Advisory Board.*

16          “(7) *MEETINGS.—Not less than once each cal-*  
17          *endar year, the Advisory Board shall meet at such*  
18          *times and places as may be designated by the Chair*  
19          *of the Advisory Board, in consultation with the Chair*  
20          *of the Subcommittee and the Chair of the interagency*  
21          *working group.*

22          “(8) *BRIEFING.—The Chair of the Advisory*  
23          *Board shall brief the Subcommittee and the inter-*  
24          *agency working group on the progress of the Advisory*  
25          *Board as necessary.*

1           “(9) *FEDERAL ADVISORY COMMITTEE ACT.*—*Sec-*  
2           *tion 14 of the Federal Advisory Committee Act shall*  
3           *not apply to the Advisory Board.*”.

4 **SEC. 5. STRATEGIC RESEARCH PLAN.**

5           *Section 12405 of the Federal Ocean Acidification Re-*  
6           *search and Monitoring Act of 2009 (33 U.S.C. 3704) is*  
7           *amended—*

8           (1) *in subsection (a)—*

9                   (A) *by striking “acidification” each place it*  
10                   *appears and inserting “acidification and coastal*  
11                   *acidification”;*

12                   (B) *in the first sentence—*

13                           (i) *by inserting “, and not later than*  
14                           *every 5 years thereafter” after “the date of*  
15                           *enactment of this Act”;*

16                           (ii) *by inserting “address the socio-*  
17                           *economic impacts of ocean acidification and*  
18                           *coastal acidification and to” after “mitiga-*  
19                           *tion strategies to”; and*

20                           (iii) *by striking “marine ecosystems”*  
21                           *each place it appears and inserting “eco-*  
22                           *systems”; and*

23                   (C) *in the second sentence, by inserting*  
24                   *“and recommendations made by the Advisory*

1           *Board in the review of the plan required under*  
2           *section 12404(c)(2)(B)(i)” after “subsection (d)”;*  
3           *(2) in subsection (b)—*

4                   *(A) in paragraph (1), by inserting “and so-*  
5                   *cial sciences” after “among the ocean sciences”;*

6                   *(B) in paragraph (2)—*

7                           *(i) in subparagraph (A), by striking*  
8                           *“impacts” and inserting “impacts, includ-*  
9                           *ing trends of changes in ocean chemistry,”;*

10                           *(ii) in subparagraph (B)—*

11                                   *(I) by striking “improve the abil-*  
12                                   *ity to assess the” and inserting “assess*  
13                                   *the short-term and long-term”;* and

14                                   *(II) by striking “; and” at the end*  
15                                   *and inserting a semicolon;*

16                                   *(iii) by amending subparagraph (C) to*  
17                                   *read as follows:*

18                                   *“(C) provide information for the—*

19   *“(i) development of adaptation and*  
20   *mitigation strategies to address the socio-*  
21   *economic impacts of ocean acidification and*  
22   *coastal acidification;*

23   *“(ii) conservation of marine organisms*  
24   *and ecosystems; and*



1                   “(iii) assessment of the effectiveness of  
2                   such adaptation and mitigation strategies;  
3                   and”;

4                   (iv) by adding at the end the following  
5                   new subparagraph:

6                   “(D) improve research on—

7                   “(i) ocean acidification and coastal  
8                   acidification;

9                   “(ii) the interactions between and ef-  
10                  fects of multiple combined stressors includ-  
11                  ing changes in water chemistry, changes in  
12                  sediment delivery, hypoxia, and harmful  
13                  algal blooms, on ocean acidification and  
14                  coastal acidification; and

15                  “(iii) the effect of environmental  
16                  stressors on marine resources and eco-  
17                  systems;”;

18                  (C) in paragraph (3)—

19                  (i) in subparagraph (F), by striking  
20                  “database development” and inserting  
21                  “data management”;

22                  (ii) in subparagraph (H) by striking  
23                  “and” at the end; and

24                  (iii) by adding at the end the following  
25                  new subparagraphs:

1           “(J) assessment of adaptation and mitiga-  
2           tion strategies; and

3           “(K) education and outreach activities;”;

4           (D) in paragraph (4), by striking “set  
5           forth” and inserting “ensure an appropriate bal-  
6           ance of contribution in establishing”;

7           (E) in paragraph (5), by striking “reports”  
8           and inserting “the best available peer-reviewed  
9           scientific reports”;

10          (F) in paragraph (6)—

11           (i) by inserting “and coastal acidifica-  
12           tion” after “ocean acidification”; and

13           (ii) by striking “of the United States”  
14           and inserting “within the United States”;

15          (G) in paragraph (7), by striking “outline  
16           budget requirements” and inserting “estimate  
17           costs associated for full implementation of each  
18           element of the plan by fiscal year”;

19          (H) in paragraph (8)—

20           (i) by inserting “and coastal acidifica-  
21           tion” after “ocean acidification” each place  
22           it appears;

23           (ii) by striking “its” and inserting  
24           “their”; and

1                   (iii) by striking “; and” at the end  
2                   and inserting a semicolon;

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

5                   (J) by adding at the end the following new  
6                   paragraph:

7                   “(10) describe monitoring needs necessary to  
8                   support potentially affected industry members, coastal  
9                   stakeholders, fishery management councils and com-  
10                  missions, non-Federal resource managers, and sci-  
11                  entific experts on decision-making and adaptation re-  
12                  lated to ocean acidification and coastal acidifica-  
13                  tion.”;

14                  (3) in subsection (c)—

15                  (A) in paragraph (1)(C), by striking “sur-  
16                  face”;

17                  (B) in paragraph (2), by inserting “and  
18                  coastal acidification” after “ocean acidification”  
19                  each place it appears;

20                  (C) in paragraph (3)—

21                  (i) by striking “input, and” and in-  
22                  serting “inputs,”;

23                  (ii) by inserting “, marine food webs,”  
24                  after “marine ecosystems”; and

1                   (iii) by inserting “, and modeling that  
2                   supports fisheries management” after “ma-  
3                   rine organisms”;

4                   (D) in paragraph (5), by inserting “and  
5                   coastal acidification” after “ocean acidification”;  
6                   and

7                   (E) by adding at the end the following new  
8                   paragraph:

9                   “(6) Research to understand related and cumu-  
10                  lative stressors and other biogeochemical processes oc-  
11                  curring in conjunction with ocean acidification and  
12                  coastal acidification.”; and

13                  (4) by striking subsection (e) and inserting the  
14                  following:

15                  “(e) *ADVISORY BOARD EVALUATION.*—Not later than  
16                  180 days before a plan is submitted to Congress, the Sub-  
17                  committee shall provide the Advisory Board established  
18                  under section 12404(c) a copy of the plan for purposes of  
19                  review under paragraph (2)(B)(i) of such section.

20                  “(f) *PUBLICATION AND PUBLIC COMMENT.*—Not later  
21                  than 90 days before the strategic research plan, or any revi-  
22                  sion thereof, is submitted to Congress, the Subcommittee  
23                  shall publish the plan in the Federal Register and provide  
24                  an opportunity for submission of public comments for a pe-  
25                  riod of not less than 60 days.”.

1 **SEC. 6. NOAA OCEAN ACIDIFICATION ACTIVITIES.**

2 *Section 12406 of the Federal Ocean Acidification Re-*  
3 *search and Monitoring Act of 2009 (33 U.S.C. 3705) is*  
4 *amended—*

5 *(1) in subsection (a)—*

6 *(A) in the matter preceding paragraph (1),*  
7 *by inserting “coordination,” after “research,*  
8 *monitoring,”;*

9 *(B) in paragraph (1)—*

10 *(i) in subparagraph (B)—*

11 *(I) by inserting “including the In-*  
12 *tegrated Ocean Observing System and*  
13 *the ocean observing assets of other Fed-*  
14 *eral and State agencies,” after “ocean*  
15 *observing assets,”; and*

16 *(II) by inserting “and agency and*  
17 *department missions, prioritizing the*  
18 *location of monitoring instruments, as-*  
19 *sets, and projects to maximize the effi-*  
20 *ciency of resources and to optimize un-*  
21 *derstanding of socioeconomic impacts*  
22 *and ecosystem health” after “research*  
23 *program”;*

24 *(ii) in subparagraph (C)—*

1                   (I) by striking “adaptation” and  
2                   inserting “adaptation and mitiga-  
3                   tion”; and

4                   (II) by inserting “and supporting  
5                   socioeconomically vulnerable commu-  
6                   nities and industries” after “marine  
7                   ecosystems”;

8                   (iii) in subparagraph (E), by striking  
9                   “its impacts” and inserting “their respec-  
10                  tive impacts”;

11                  (iv) in subparagraph (F), by striking  
12                  “monitoring and impacts research” and in-  
13                  serting “research, monitoring, and adapta-  
14                  tion and mitigation strategies”; and

15                  (v) by adding at the end the following  
16                  new subparagraph:

17                  “(G) research to improve understanding of  
18                  the effect of—

19                         “(i) other environmental stressors on  
20                         ocean acidification and coastal acidifica-  
21                         tion;

22                         “(ii) multiple environmental stressors  
23                         on living marine resources and coastal eco-  
24                         systems; and

1                   “(iii) adaptation and mitigation strat-  
2                   egies to address the socioeconomic impacts  
3                   of ocean acidification and coastal acidifica-  
4                   tion.”;

5                   (C) in paragraph (2), by striking “critical  
6                   research projects that explore” and inserting  
7                   “critical research and education projects that ex-  
8                   plore and communicate”; and

9                   (D) in paragraphs (1) and (2), by striking  
10                  “acidification” each place it appears and insert-  
11                  ing “acidification and coastal acidification”;  
12                  and

13                  (2) by adding at the end the following new sub-  
14                  sections:

15                  “(c) *RELATIONSHIP TO INTERAGENCY WORKING*  
16                  *GROUP.—The National Oceanic and Atmospheric Adminis-*  
17                  *tration shall serve as the lead Federal agency responsible*  
18                  *for coordinating the Federal response to ocean acidification*  
19                  *and coastal acidification, by—*

20                         “(1) leading the interagency working group in  
21                         implementing the strategic research plan under sec-  
22                         tion 12405;

23                         “(2) coordinating monitoring and research ef-  
24                         forts among Federal agencies in cooperation with

1       *State, local, and Tribal government and international*  
2       *partners;*

3           “(3) *maintaining an Ocean Acidification Infor-*  
4       *mation Exchange described under section 12404(b)(5)*  
5       *to allow for information to be electronically accessible,*  
6       *including information—*

7           “(A) *on ocean acidification developed*  
8       *through or used by the ocean acidification pro-*  
9       *gram described under section 12406(a); or*

10          “(B) *that would be useful to State govern-*  
11       *ments, local governments, Tribal governments,*  
12       *resource managers, policymakers, researchers,*  
13       *and other stakeholders in mitigating or adapting*  
14       *to the impacts of ocean acidification and coastal*  
15       *acidification; and*

16          “(4) *establishing and maintaining the data ar-*  
17       *chive system under subsection (d).*

18       “(d) *DATA ARCHIVE SYSTEM.—*

19           “(1) *MANAGEMENT.—The Secretary, in coordi-*  
20       *nation with members of the interagency working*  
21       *group, shall provide for the long-term stewardship of,*  
22       *and access to, data relating to ocean acidification*  
23       *and coastal acidification by establishing and main-*  
24       *taining a data archive system that the National Cen-*  
25       *ter for Environmental Information uses to process,*



1       *store, archive, provide access to, and incorporate to*  
2       *the extent possible, such data collected—*

3               “(A) *through relevant federally-funded re-*  
4               *search; and*

5               “(B) *by a Federal agency, State agency,*  
6               *local agency, Tribe, academic scientist, citizen*  
7               *scientist, or industry organization.*

8               “(2) *EXISTING GLOBAL OR NATIONAL DATA AS-*  
9               *SETS.—In establishing and maintaining the data ar-*  
10              *chive system under paragraph (1), the Secretary shall*  
11              *ensure that existing global or national data assets*  
12              *(including the data assets maintained by the National*  
13              *Centers for Environmental Information, the Inte-*  
14              *grated Ocean Observing System, and other existing*  
15              *data systems within Federal agencies) are incor-*  
16              *porated to the greatest extent possible.*

17              “(e) *STANDARDS, PROTOCOLS, AND PROCEDURES.—*  
18              *With respect to the data described in subsection (d), the Sec-*  
19              *retary, in coordination with members of the interagency*  
20              *working group, shall establish and revise as necessary the*  
21              *standards, protocols, or procedures for—*

22                      “(1) *processing, storing, archiving, and pro-*  
23                      *viding access to such data;*

24                      “(2) *the interoperability and intercalibration of*  
25                      *such data;*

1           “(3) the collection of any metadata underlying  
2           such data; and

3           “(4) sharing such data with State, local, and  
4           Tribal government programs, potentially affected in-  
5           dustry members, coastal stakeholders, fishery manage-  
6           ment councils and commissions, non-Federal resource  
7           managers, and academia.

8           “(f) *DISSEMINATION OF OCEAN ACIDIFICATION DATA*  
9           *AND COASTAL ACIDIFICATION DATA.*—The Secretary, in co-  
10          ordination with members of the interagency working group,  
11          shall disseminate the data described under subsection (d)  
12          to the greatest extent practicable by sharing such data on  
13          full and open access exchanges, including the Ocean Acidifi-  
14          cation Information Exchange described in section  
15          12404(b)(5).

16          “(g) *REQUIREMENT.*—Recipients of grants from the  
17          National Oceanic and Atmospheric Administration under  
18          this subtitle that collect data described under subsection (d)  
19          shall—

20                 “(1) collect such data in accordance with the  
21                 standards, protocols, or procedures established pursu-  
22                 ant to subsection (e); and

23                 “(2) submit such data to the data archive system  
24                 under subsection (d), in accordance with any rules  
25                 promulgated by the Secretary.”.

1 **SEC. 7. NSF OCEAN ACIDIFICATION ACTIVITIES.**

2 *Section 12407 of the Federal Ocean Acidification Re-*  
3 *search and Monitoring Act of 2009 (33 U.S.C. 3706) is*  
4 *amended—*

5 *(1) by striking “ocean acidification” each place*  
6 *it appears and inserting “ocean acidification and*  
7 *coastal acidification”;*

8 *(2) in subsection (a)—*

9 *(A) in the matter preceding paragraph*  
10 *(1)—*

11 *(i) by striking “continue” and all that*  
12 *follows through “which shall” ;*

13 *(ii) by striking “proposals for re-*  
14 *search” and inserting “proposals for the re-*  
15 *searching”; and*

16 *(iii) by striking “its impacts” and in-*  
17 *serting “their respective impacts”;*

18 *(B) in paragraph (1), by striking “marine*  
19 *ecosystems” and inserting “ecosystems”;*

20 *(C) in paragraph (2), by striking “; and”*  
21 *at the end and inserting a semicolon;*

22 *(D) in paragraph (3)—*

23 *(i) by striking “and its impacts” and*  
24 *inserting “and their respective impacts”;*

25 *and*

1                   (ii) by striking the period at the end  
2                   and inserting “; and”; and

3                   (E) by adding at the end the following new  
4                   paragraph:

5                   “(4) adaptation and mitigation strategies to ad-  
6                   dress socioeconomic effects of ocean acidification and  
7                   coastal acidification.”; and

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

9                   “(d) *REQUIREMENT.*—Recipients of grants from the  
10                  National Science Foundation under this subtitle that collect  
11                  data described under section 12406(d) shall—

12                  “(1) collect data in accordance with the stand-  
13                  ards, protocols, or procedures established pursuant to  
14                  section 12406(e); and

15                  “(2) submit such data to the Director and the  
16                  Secretary, in accordance with any rules promulgated  
17                  by the Director or the Secretary.”.

18   **SEC. 8. NASA OCEAN ACIDIFICATION ACTIVITIES.**

19                  Section 12408 of the Federal Ocean Acidification Re-  
20                  search and Monitoring Act of 2009 (33 U.S.C. 3707) is  
21                  amended—

22                  (1) by striking “ocean acidification” each place  
23                  it appears and inserting “ocean acidification and  
24                  coastal acidification”;

1           (2) *in subsection (a), by striking “its impacts”*  
2           *and inserting “their respective impacts”;* and

3           (3) *by adding at the end the following new sub-*  
4           *section:*

5           “(d) *REQUIREMENT.—Researchers from the National*  
6           *Aeronautics and Space Administration under this subtitle*  
7           *that collect data described under section 12406(d) shall—*

8                   “(1) *collect such data in accordance with the*  
9                   *standards, protocols, or procedures established pursu-*  
10                   *ant to section 12406(e); and*

11                   “(2) *submit such data to the Administrator and*  
12                   *the Secretary, in accordance with any rules promul-*  
13                   *gated by the Administrator or the Secretary.”.*

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

15           *Section 12409 of the Federal Ocean Acidification Re-*  
16           *search and Monitoring Act of 2009 (33 U.S.C. 3708) is*  
17           *amended—*

18                   (1) *in subsection (a), by striking “subtitle—”*  
19                   *and all that follows through paragraph (4) and in-*  
20                   *serting the following: “subtitle \$30,500,000 for each of*  
21                   *the fiscal years 2020 through 2024.”;* and

22                   (2) *in subsection (b), by striking “subtitle—”*  
23                   *and all that follows through paragraph (4) and in-*  
24                   *serting the following: “subtitle \$20,000,000 for each of*  
25                   *the fiscal years 2020 through 2024.”.*