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1ST SESSION

# H. R. 1237

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IN THE SENATE OF THE UNITED STATES

JUNE 10, 2019

Received; read twice and referred to the Committee on Commerce, Science,  
and Transportation

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## AN ACT

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  
6       2019” 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 coordina-  
14                       tion” and inserting “coordination and imple-  
15                       mentation”;

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.—  
10          Section 12402 of the Federal Ocean Acidification Re-  
11          search and Monitoring Act of 2009 (33 U.S.C. 3701(a))  
12          is amended 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  
18               Earth’s oceans” and all that follows before the pe-  
19               riod at the end and inserting “and changes in the  
20               water chemistry of the Earth’s oceans, coastal estu-  
21               aries, and waterways caused by carbon dioxide from  
22               the atmosphere and the breakdown of organic mat-  
23               ter”;

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

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

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

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

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

18 (5) by adding at the end the following new  
19 paragraph:

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

1 States, and any other territory or possession of the  
2 United States.”.

3 **SEC. 4. INTERAGENCY WORKING GROUP.**

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

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

9 (2) in subsection (a)—

10 (A) in paragraph (1), by striking “Joint  
11 Subcommittee on Ocean Science and Tech-  
12 nology of the National Science and Technology  
13 Council shall coordinate Federal activities on  
14 ocean acidification and” and insert “Sub-  
15 committee shall”;

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

1 (C) in paragraph (3), in the heading, by  
2 striking “CHAIRMAN” and inserting “CHAIR”;  
3 (3) in subsection (b)—

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

8 (B) in paragraph (2)—

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

12 (ii) in subparagraph (B), by inserting  
13 “and coastal acidification” after “ocean  
14 acidification”;

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

17 (D) in paragraph (5)—

18 (i) by striking “developed” and insert-  
19 ing “and coastal acidification developed”;  
20 and

21 (ii) by striking the period at the end  
22 and inserting “and coastal acidification;  
23 and”; and

24 (E) by adding at the end the following new  
25 paragraph:

1 “(6) ensure that each of the Federal agencies  
2 represented on the interagency working group—

3 “(A) participates in the Ocean Acidifica-  
4 tion Information Exchange established under  
5 paragraph (5); and

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

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

10 (A) by inserting “, and to the Office of  
11 Management and Budget,” after “House of  
12 Representatives”; and

13 (B) in subparagraph (B), by striking “the  
14 interagency research” and inserting “inter-  
15 agency strategic research”;

16 (5) by redesignating subsection (c) as sub-  
17 section (d); and

18 (6) by inserting after subsection (b) the fol-  
19 lowing:

20 “(c) ADVISORY BOARD.—

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

24 “(2) DUTIES.—The Advisory Board shall—

1 “(A) not later than 180 days before the  
2 Subcommittee submits the most recent report  
3 under subsection (d)(2)—

4 “(i) review such report;

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

9 “(iii) concurrently with the Sub-  
10 committee’s final submission of the report  
11 under subsection (d)(2), the Advisory  
12 Board shall submit a copy of the analysis  
13 provided to the Subcommittee to the Com-  
14 mittee on Commerce, Science, and Trans-  
15 portation of the Senate, the Committee on  
16 Science, Space, and Technology of the  
17 House of Representatives, and the Com-  
18 mittee on Natural Resources of the House  
19 of Representatives;

20 “(B) not later than 180 days before the  
21 Subcommittee submits the most recent strategic  
22 research plan under subsection (d)(3) to Con-  
23 gress—

24 “(i) review such plan;

1 “(ii) submit an analysis of such plan  
2 and the implementation thereof to the Sub-  
3 committee for consideration in the final  
4 strategic research plan submitted under  
5 subsection (d)(3); and

6 “(iii) concurrently with the Sub-  
7 committee’s final submission of the stra-  
8 tegic research plan under subsection  
9 (d)(3), the Advisory Board shall submit a  
10 copy of the analysis provided to the Sub-  
11 committee to the Committee on Commerce,  
12 Science, and Transportation of the Senate,  
13 the Committee on Science, Space, and  
14 Technology of the House of Representa-  
15 tives, and the Committee on Natural Re-  
16 sources of the House of Representatives;

17 “(C) provide ongoing advice to the Sub-  
18 committee and the interagency working group  
19 on matters related to Federal activities on  
20 ocean acidification and coastal acidification;

21 “(D) advise the Subcommittee and the  
22 interagency working group on—

23 “(i) efforts to coordinate research and  
24 monitoring activities related to ocean acidi-  
25 fication and coastal acidification; and

1 “(ii) the best practices for the stand-  
2 ards developed for data archiving under  
3 section 12406(e);

4 “(E) publish in the Federal Register a  
5 charter;

6 “(F) provide the Library of Congress  
7 with—

8 “(i) the charter described in subpara-  
9 graph (E);

10 “(ii) any schedules and minutes for  
11 meetings of the Advisory Board;

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

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

16 “(G) establish a publicly accessible web  
17 page on the website of the National Oceanic  
18 and Atmospheric Administration, that contains  
19 the information described in clauses (i) through  
20 (iv) of subparagraph (F).

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

23 “(A) Two representatives of the shellfish  
24 and crab industry.

1           “(B) One representative of the finfish in-  
2           dustry.

3           “(C) One representative of seafood proc-  
4           essors.

5           “(D) Three representatives from academia,  
6           including both natural and social sciences.

7           “(E) One representative of recreational  
8           fishing.

9           “(F) One representative of relevant non-  
10          governmental organizations.

11          “(G) Six representatives from relevant  
12          State, local, and Tribal governments.

13          “(H) One representative from the Alaska  
14          Ocean Acidification Network.

15          “(I) One representative from the California  
16          Current Acidification Network.

17          “(J) One representative from the North-  
18          east Coastal Acidification Network.

19          “(K) One representative from the South-  
20          east Coastal Acidification Network.

21          “(L) One representative from the Gulf of  
22          Mexico Coastal Acidification Network.

23          “(M) One representative from the Mid-At-  
24          lantic Coastal Acidification Network.

1           “(N) One representative from the Pacific  
2 Islands Ocean Observing System or similar en-  
3 tity representing the island territories and pos-  
4 sessions of the United States in the Pacific  
5 Ocean, and the State of Hawaii.

6           “(O) One representative from the Carib-  
7 bean Regional Association for Coastal Ocean  
8 Observing or a similar entity representing Puer-  
9 to Rico and the United States Virgin Islands.

10           “(P) One representative from the National  
11 Oceanic and Atmospheric Administration shall  
12 serve as an ex-officio member of the Advisory  
13 Board without a vote.

14           “(4) APPOINTMENT OF MEMBERS.—The Chair  
15 of the Subcommittee shall—

16           “(A) appoint members to the Advisory  
17 Board (taking into account the geographical in-  
18 terests of each individual to be appointed as a  
19 member of the Advisory Board to ensure that  
20 an appropriate balance of geographical interests  
21 are represented by the members of the Advisory  
22 Board) who—

23           “(i) represent the interest group for  
24 which each seat is designated;

1           “(ii) demonstrate expertise on ocean  
2           acidification or coastal acidification and its  
3           scientific, economic, industry, cultural, and  
4           community impacts; and

5           “(iii) have a record of distinguished  
6           service with respect to ocean acidification  
7           or coastal acidification, and such impacts;

8           “(B) give consideration to nominations and  
9           recommendations from the members of the  
10          interagency working group and the public for  
11          such appointments; and

12          “(C) ensure that an appropriate balance of  
13          scientific, industry, and geographical interests  
14          are represented by the members of the Advisory  
15          Board.

16          “(5) TERM OF MEMBERSHIP.—Each member of  
17          the Advisory Board—

18                 “(A) shall be appointed for a 5-year term;  
19                 and

20                 “(B) may be appointed to more than one  
21                 term.

22          “(6) CHAIR.—The Chair of the Subcommittee  
23          shall appoint one member of the Advisory Board to  
24          serve as the Chair of the Advisory Board.

1           “(7) MEETINGS.—Not less than once each cal-  
 2       endar year, the Advisory Board shall meet at such  
 3       times and places as may be designated by the Chair  
 4       of the Advisory Board, in consultation with the  
 5       Chair of the Subcommittee and the Chair of the  
 6       interagency working group.

7           “(8) BRIEFING.—The Chair of the Advisory  
 8       Board shall brief the Subcommittee and the inter-  
 9       agency working group on the progress of the Advi-  
 10      sory Board as necessary.

11          “(9) FEDERAL ADVISORY COMMITTEE ACT.—  
 12      Section 14 of the Federal Advisory Committee Act  
 13      shall not apply to the Advisory Board.”.

14      **SEC. 5. STRATEGIC RESEARCH PLAN.**

15      Section 12405 of the Federal Ocean Acidification Re-  
 16      search and Monitoring Act of 2009 (33 U.S.C. 3704) is  
 17      amended—

18           (1) in subsection (a)—

19                (A) by striking “acidification” each place it  
 20                appears and inserting “acidification and coastal  
 21                acidification”;

22                (B) in the first sentence—

23                   (i) by inserting “, and not later than  
 24                   every 5 years thereafter” after “the date of  
 25                   enactment of this Act”;

(ii) by inserting “address the socio-economic impacts of ocean acidification and coastal acidification and to” after “mitigation strategies to”; and

(iii) by striking “marine ecosystems” each place it appears and inserting “ecosystems”; and

(C) in the second sentence, by inserting “and recommendations made by the Advisory Board in the review of the plan required under section 12404(c)(2)(B)(i)” after “subsection (d)”;

(2) in subsection (b)—

(A) in paragraph (1), by inserting “and social sciences” after “among the ocean sciences”;

(B) in paragraph (2)—

(i) in subparagraph (A), by striking “impacts” and inserting “impacts, including trends of changes in ocean chemistry,”;

(ii) in subparagraph (B)—

(I) by striking “improve the ability to assess the” and inserting “assess the short-term and long-term”; and

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

3 (iii) by amending subparagraph (C) to  
4 read as follows:

5 “(C) provide information for the—

6 “(i) development of adaptation and  
7 mitigation strategies to address the socio-  
8 economic impacts of ocean acidification  
9 and coastal acidification;

10 “(ii) conservation of marine organisms  
11 and ecosystems;

12 “(iii) assessment of the effectiveness  
13 of such adaptation and mitigation strate-  
14 gies; and”; and

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

17 “(D) improve research on—

18 “(i) ocean acidification and coastal  
19 acidification;

20 “(ii) the interactions between and ef-  
21 fects of multiple combined stressors includ-  
22 ing changes in water chemistry, changes in  
23 sediment delivery, hypoxia, and harmful  
24 algal blooms, on ocean acidification and  
25 coastal acidification; and

1 “(iii) the effect of environmental  
2 stressors on marine resources and eco-  
3 systems;”;

4 (C) in paragraph (3)—

5 (i) in subparagraph (F), by striking  
6 “database development” and inserting  
7 “data management”;

8 (ii) in subparagraph (H) by striking  
9 “and” at the end; and

10 (iii) by adding at the end the fol-  
11 lowing new subparagraphs:

12 “(J) assessment of adaptation and mitiga-  
13 tion strategies; and

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

15 (D) in paragraph (4), by striking “set  
16 forth” and inserting “ensure an appropriate  
17 balance of contribution in establishing”;

18 (E) in paragraph (5), by striking “reports”  
19 and inserting “the best available peer-reviewed  
20 scientific reports”;

21 (F) in paragraph (6)—

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

24 (ii) by striking “of the United States”  
25 and inserting “within the United States”;

1 (G) in paragraph (7), by striking “outline  
2 budget requirements” and inserting “estimate  
3 costs associated for full implementation of each  
4 element of the plan by fiscal year”;

5 (H) in paragraph (8)—

6 (i) by inserting “and coastal acidifica-  
7 tion” after “ocean acidification” each place  
8 it appears;

9 (ii) by striking “its” and inserting  
10 “their”; and

11 (iii) by striking “; and” at the end  
12 and inserting a semicolon;

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

15 (J) by adding at the end the following new  
16 paragraph:

17 “(10) describe monitoring needs necessary to  
18 support potentially affected industry members,  
19 coastal stakeholders, fishery management councils  
20 and commissions, non-Federal resource managers,  
21 and scientific experts on decision-making and adap-  
22 tation related to ocean acidification and coastal  
23 acidification.”;

24 (3) in subsection (c)—

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

3 (B) in paragraph (2), by inserting “and  
4 coastal acidification” after “ocean acidification”  
5 each place it appears;

6 (C) in paragraph (3)—

7 (i) by striking “input, and” and in-  
8 serting “inputs,”;

9 (ii) by inserting “, marine food webs,”  
10 after “marine ecosystems”; and

11 (iii) by inserting “, and modeling that  
12 supports fisheries management” after  
13 “marine organisms”;

14 (D) in paragraph (5), by inserting “and  
15 coastal acidification” after “ocean acidifica-  
16 tion”; and

17 (E) by adding at the end the following new  
18 paragraph:

19 “(6) Research to understand related and cumu-  
20 lative stressors and other biogeochemical processes  
21 occurring in conjunction with ocean acidification and  
22 coastal acidification.”; and

23 (4) by striking subsection (e) and inserting the  
24 following:

1       “(e) ADVISORY BOARD EVALUATION.—Not later  
 2 than 180 days before a plan is submitted to Congress, the  
 3 Subcommittee shall provide the Advisory Board estab-  
 4 lished under section 12404(c) a copy of the plan for pur-  
 5 poses of review under paragraph (2)(B)(i) of such section.

6       “(f) PUBLICATION AND PUBLIC COMMENT.—Not  
 7 later than 90 days before the strategic research plan, or  
 8 any revision thereof, is submitted to Congress, the Sub-  
 9 committee shall publish the plan in the Federal Register  
 10 and provide an opportunity for submission of public com-  
 11 ments for a period of not less than 60 days.”.

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

13       Section 12406 of the Federal Ocean Acidification Re-  
 14 search and Monitoring Act of 2009 (33 U.S.C. 3705) is  
 15 amended—

16               (1) in subsection (a)—

17                       (A) in the matter preceding paragraph (1),  
 18               by inserting “coordination,” after “research,  
 19               monitoring,”;

20               (B) in paragraph (1)—

21                       (i) in subparagraph (B)—

22                               (I) by inserting “including the  
 23                       Integrated Ocean Observing System  
 24                       and the ocean observing assets of

1 other Federal and State agencies,”  
2 after “ocean observing assets,”; and

3 (II) by inserting “and agency  
4 and department missions, prioritizing  
5 the location of monitoring instru-  
6 ments, assets, and projects to maxi-  
7 mize the efficiency of resources and to  
8 optimize understanding of socio-  
9 economic impacts and ecosystem  
10 health” after “research program”;

11 (ii) in subparagraph (C)—

12 (I) by striking “adaptation” and  
13 inserting “adaptation and mitigation”;  
14 and

15 (II) by inserting “and supporting  
16 socioeconomically vulnerable commu-  
17 nities and industries” after “marine  
18 ecosystems”;

19 (iii) in subparagraph (E), by striking  
20 “its impacts” and inserting “their respec-  
21 tive impacts”;

22 (iv) in subparagraph (F), by striking  
23 “monitoring and impacts research” and in-  
24 serting “research, monitoring, and adapta-  
25 tion and mitigation strategies”; and

1 (v) by adding at the end the following  
2 new subparagraph:

3 “(G) research to improve understanding of  
4 the effect of—

5 “(i) other environmental stressors on  
6 ocean acidification and coastal acidifica-  
7 tion;

8 “(ii) multiple environmental stressors  
9 on living marine resources and coastal eco-  
10 systems; and

11 “(iii) adaptation and mitigation strat-  
12 egies to address the socioeconomic impacts  
13 of ocean acidification and coastal acidifica-  
14 tion.”;

15 (C) in paragraph (2), by striking “critical  
16 research projects that explore” and inserting  
17 “critical research and education projects that  
18 explore and communicate”; and

19 (D) in paragraphs (1) and (2), by striking  
20 “acidification” each place it appears and insert-  
21 ing “acidification and coastal acidification”;  
22 and

23 (2) by adding at the end the following new sub-  
24 sections:

1       “(c) RELATIONSHIP TO INTERAGENCY WORKING  
2 GROUP.—The National Oceanic and Atmospheric Admin-  
3 istration shall serve as the lead Federal agency responsible  
4 for coordinating the Federal response to ocean acidifica-  
5 tion and coastal acidification, by—

6               “(1) leading the interagency working group in  
7 implementing the strategic research plan under sec-  
8 tion 12405;

9               “(2) coordinating monitoring and research ef-  
10 forts among Federal agencies in cooperation with  
11 State, local, and Tribal government and inter-  
12 national partners;

13               “(3) maintaining an Ocean Acidification Infor-  
14 mation Exchange described under section  
15 12404(b)(5) to allow for information to be electroni-  
16 cally accessible, including information—

17                       “(A) on ocean acidification developed  
18 through or used by the ocean acidification pro-  
19 gram described under section 12406(a); or

20                       “(B) that would be useful to State govern-  
21 ments, local governments, Tribal governments,  
22 resource managers, policymakers, researchers,  
23 and other stakeholders in mitigating or adapt-  
24 ing to the impacts of ocean acidification and  
25 coastal acidification; and

1           “(4) establishing and maintaining the data ar-  
2       chive system under subsection (d).

3       “(d) DATA ARCHIVE SYSTEM.—

4           “(1) MANAGEMENT.—The Secretary, in coordi-  
5       nation with members of the interagency working  
6       group, shall provide for the long-term stewardship  
7       of, and access to, data relating to ocean acidification  
8       and coastal acidification by establishing and main-  
9       taining a data archive system that the National Cen-  
10      ter for Environmental Information uses to process,  
11      store, archive, provide access to, and incorporate to  
12      the extent possible, such data collected—

13           “(A) through relevant federally-funded re-  
14      search; and

15           “(B) by a Federal agency, State agency,  
16      local agency, Tribe, academic scientist, citizen  
17      scientist, or industry organization.

18       “(2) EXISTING GLOBAL OR NATIONAL DATA AS-  
19      SETS.—In establishing and maintaining the data ar-  
20      chive system under paragraph (1), the Secretary  
21      shall ensure that existing global or national data as-  
22      sets (including the data assets maintained by the  
23      National Centers for Environmental Information,  
24      the Integrated Ocean Observing System, and other

1 existing data systems within Federal agencies) are  
2 incorporated to the greatest extent possible.

3 “(e) STANDARDS, PROTOCOLS, AND PROCEDURES.—

4 With respect to the data described in subsection (d), the  
5 Secretary, in coordination with members of the inter-  
6 agency working group, shall establish and revise as nec-  
7 essary the standards, protocols, or procedures for—

8 “(1) processing, storing, archiving, and pro-  
9 viding access to such data;

10 “(2) the interoperability and intercalibration of  
11 such data;

12 “(3) the collection of any metadata underlying  
13 such data; and

14 “(4) sharing such data with State, local, and  
15 Tribal government programs, potentially affected in-  
16 dustry members, coastal stakeholders, fishery man-  
17 agement councils and commissions, non-Federal re-  
18 source managers, and academia.

19 “(f) DISSEMINATION OF OCEAN ACIDIFICATION  
20 DATA AND COASTAL ACIDIFICATION DATA.—The Sec-  
21 retary, in coordination with members of the interagency  
22 working group, shall disseminate the data described under  
23 subsection (d) to the greatest extent practicable by sharing  
24 such data on full and open access exchanges, including

1 the Ocean Acidification Information Exchange described  
2 in section 12404(b)(5).

3 “(g) REQUIREMENT.—Recipients of grants from the  
4 National Oceanic and Atmospheric Administration under  
5 this subtitle that collect data described under subsection  
6 (d) shall—

7 “(1) collect such data in accordance with the  
8 standards, protocols, or procedures established pur-  
9 suant to subsection (e); and

10 “(2) submit such data to the data archive sys-  
11 tem under subsection (d), in accordance with any  
12 rules promulgated by the Secretary.”.

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

14 Section 12407 of the Federal Ocean Acidification Re-  
15 search and Monitoring Act of 2009 (33 U.S.C. 3706) is  
16 amended—

17 (1) by striking “ocean acidification” each place  
18 it appears and inserting “ocean acidification and  
19 coastal acidification”;

20 (2) in subsection (a)—

21 (A) in the matter preceding paragraph

22 (1)—

23 (i) by striking “continue” and all that  
24 follows through “which shall”;

1 (ii) by striking “proposals for re-  
2 search” and inserting “proposals for the  
3 researching”; and

4 (iii) by striking “its impacts” and in-  
5 serting “their respective impacts”;

6 (B) in paragraph (1), by striking “marine  
7 ecosystems” and inserting “ecosystems”;

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

10 (D) in paragraph (3)—

11 (i) by striking “and its impacts” and  
12 inserting “and their respective impacts”;  
13 and

14 (ii) by striking the period at the end  
15 and inserting “; and”; and

16 (E) by adding at the end the following new  
17 paragraph:

18 “(4) adaptation and mitigation strategies to ad-  
19 dress socioeconomic effects of ocean acidification and  
20 coastal acidification.”; and

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

22 “(d) REQUIREMENT.—Recipients of grants from the  
23 National Science Foundation under this subtitle that col-  
24 lect data described under section 12406(d) shall—

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

4           “(2) submit such data to the Director and the  
5           Secretary, in accordance with any rules promulgated  
6           by the Director or the Secretary.”.

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

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

11           (1) by striking “ocean acidification” each place  
12           it appears and inserting “ocean acidification and  
13           coastal acidification”;

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

16           (3) by adding at the end the following new sub-  
17           section:

18           “(d) REQUIREMENT.—Researchers from the National  
19           Aeronautics and Space Administration under this subtitle  
20           that collect data described under section 12406(d) shall—

21           “(1) collect such data in accordance with the  
22           standards, protocols, or procedures established pur-  
23           suant to section 12406(e); and

Section 12409 of the Federal Ocean Acidification Research and Monitoring Act of 2009 (33 U.S.C. 3708) is amended—

(2) in subsection (b), by striking “subtitle—” and all that follows through paragraph (4) and inserting the following: “subtitle \$20 million for each of the fiscal years 2020 through 2024.”.

Attest: **CHERYL L. JOHNSON,**  
*Clerk.*